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This Document, which is an admission document prepared in accordance with the AIM Rules for Companies, has been issued in connection with the application for admission of the entire issued share capital of Polarean Imaging plc (the "Company") to trading on the AIM market of the London Stock Exchange ("Admission"). None of Admission, the Placing or the Subscription shall constitute an offer to the public requiring an approved prospectus under section 85 of FSMA or the Prospectus Rules published by the Financial Conduct Authority ("FCA") (as amended) and accordingly this Document does not constitute a prospectus for these purposes and has not been pre-approved by the United Kingdom Listing Authority pursuant to section 85 of FSMA. The Company (whose registered office appears on page 7 of this Document) and the Directors (whose names appear on page 7 of this Document) accept responsibility, both individually and collectively, for the information contained in this Document, including individual and collective responsibility for compliance with the AIM Rules. To the best of the knowledge and belief of the Directors and the Company, who have taken all reasonable care to ensure that such is the case, the information contained in this Document is in accordance with the facts and does not omit anything likely to affect the import of such information. In connection with this Document no person is authorised to give any information or make any representations other than as contained in this Document and, if given or made, such information or representations must not be relied upon as having been so authorised.

AIM is a market designed primarily for emerging or smaller companies to which a higher investment risk tends to be attached than to larger or more established companies. AIM securities are not admitted to the Official List of the United Kingdom Listing Authority. A prospective investor should be aware of the risks of investing in such companies and should make the decision to invest only after careful consideration and, if appropriate, consultation with an independent financial adviser. Each AIM company is required pursuant to the AIM Rules for Companies to have a nominated adviser. The nominated adviser is required to make a declaration to the London Stock Exchange prior to Admission in the form set out in Schedule Two to the AIM Rules for Nominated Advisers. The London Stock Exchange has not itself examined or approved the contents of this Document. Application has been made to the London Stock Exchange for the Enlarged Issued Share Capital to be admitted to trading on AIM. It is expected that Admission will be effective and that dealings in the Ordinary Shares will commence on 29 March 2018.

POLAREAN IMAGING PLC

(Incorporated and registered in England and Wales with registered number 10442853)

Placing of and Subscription for 20,000,000 new Ordinary Shares each at a price of 15p per share

and

Admission of the Enlarged Issued Share Capital to trading on AIM

Nominated Adviser and Broker
Northland Capital Partners Limited

Share capital immediately following Admission

Ordinary Shares of £0.00037 each in the capital of the Company

£	*Number*
27,160.48	73,406,692

Northland Capital Partners Limited is authorised and regulated in the UK by the FCA and is acting as the Company's nominated adviser and broker in connection with the proposed Admission. Northland Capital Partners Limited's responsibilities as the Company's nominated adviser under the AIM Rules for Nominated Advisers and responsibilities as the Company's broker under the AIM Rules for Companies are owed solely to the London Stock Exchange and are not owed to the Company, to any Director or to any other person in respect of his decision to acquire Ordinary Shares in reliance on any part of this Document without limiting the statutory rights of any person to whom this Document is issued. No representation or warranty, express or implied, is made by Northland Capital Partners Limited as to, and no liability whatsoever is accepted by Northland Capital Partners Limited for, the accuracy of any information or opinions contained in this Document or for the omission of any material information from this Document, for which the Company and the Directors are solely responsible. Northland Capital Partners Limited will not be offering advice and will not otherwise be responsible for providing customer protections to recipients of this Document in respect of any acquisition of Ordinary Shares. Copies of this Document will be available free of charge during normal business hours on any weekday (except Saturdays and public holidays) at the offices of Northland Capital Partners Limited, 40 Gracechurch Street, 2nd Floor, London, EC3V 0BT from the date of this Document and shall remain available for a period of one month from Admission.

IMPORTANT INFORMATION

The information below is for general guidance only and it is the responsibility of any person or persons in possession of this Document to inform themselves of, and to observe, all applicable laws and regulations of any relevant jurisdiction.

No person has been authorised by the Company to issue any advertisement or to give any information or to make any representation in connection with the contents of this Document and if issued, given or made, such advertisement, information or representation must not be relied upon as having been authorised by the Company.

This Document does not constitute an offer to sell or an invitation to subscribe for, or solicitation of an offer to subscribe or buy, Ordinary Shares to any person in any jurisdiction to whom it is unlawful to make such an offer or solicitation.

No action has been taken by the Company, the holders of the Ordinary Shares or Northland Capital Partners Limited that would permit a public offer of Ordinary Shares or possession or distribution of this Document where action for those purposes is required. Prospective investors should inform themselves as to: (a) the legal requirements of their own country for the purchase, holding, transfer or other disposal of the Ordinary Shares; (b) any foreign exchange restrictions applicable to the purchase, holding, transfer or other disposal of the Ordinary Shares which they might encounter; and (c) the income and other tax consequences which may apply in their own countries as a result of the purchase, holding, transfer or other disposal of the Ordinary Shares. Failure to comply with these restrictions may constitute a violation of the securities laws of their country. Prospective investors must rely upon their own representatives, including their own legal advisers and accountants, as to legal, tax, investment or any other related matters concerning the Company and an investment therein. Statements made in this Document are based on the law and practice currently in force in the United Kingdom and are subject to change. This Document should be read in its entirety. All holders of Ordinary Shares are entitled to the benefit of, and are bound by and are deemed to have notice of, the provisions of the Articles.

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The delivery of this Document or any subscriptions or purchases made hereunder and at any time subsequent to the date of this Document shall not, under any circumstances, create an impression that there has been no change in the affairs of the Company since the date of this Document or that the information in this Document is correct.

PROSPECTIVE INVESTORS SHOULD READ THE WHOLE TEXT OF THIS DOCUMENT AND SHOULD BE AWARE THAT AN INVESTMENT IN THE COMPANY IS HIGHLY SPECULATIVE AND INVOLVES A HIGH DEGREE OF RISK. PROSPECTIVE INVESTORS ARE ADVISED TO READ, IN PARTICULAR, PART I "INFORMATION ON THE GROUP, INVESTMENT OPPORTUNITY AND STRATEGY" AND THE RISK FACTORS SET OUT IN PART II OF THIS DOCUMENT.

United States of America

This Document is not for distribution in or into the United States. The Ordinary Shares have not been and will not be registered with any securities regulatory authority of any state or other jurisdiction of the United States and may not be offered for sale or subscription or placed or sold or subscribed directly or indirectly within the United States. The securities described herein have not been and will not be registered under the US Securities Act of 1933 (as amended) (the "Securities Act"). The Ordinary Shares may not be offered, sold, resold, delivered or transferred within the United States or to, or for the account or benefit of, US persons (as such term is defined in Regulation S under the Securities Act ("Regulation S")) except in accordance with the Securities Act or an exemption therefrom. The Ordinary Shares are generally only

being offered and sold outside the United States to persons who are not US Persons (within the meaning of Regulation S) in transactions complying with Regulation S, which provides an exemption from the requirement to register the offer and sale under the Securities Act. The Ordinary Shares have not been approved or disapproved by the US Securities and Exchange Commission, any state securities authority or any other regulatory authority, nor have any of the foregoing passed upon or endorsed the merits of this Document. Any representation to the contrary is unlawful.

FORWARD-LOOKING STATEMENTS

This Document includes forward-looking statements. These statements relate to, among other things, analyses and other information that are based on forecasts of future results and estimates of amounts not yet determinable. These statements also relate to the Company's future prospects, developments and business strategies.

These forward-looking statements are identified by the use of terms and phrases such as "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "plan", "predict", "project", "will" or the negative of those variations, or comparable expressions, including references to assumptions. These statements are contained in all sections of this Document. The forward-looking statements in this Document, including statements concerning projections of the Company's future results, operating profits and earnings, are based on current expectations and are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by those statements.

Certain risks relating to the Group are specifically described in Part II "Risk Factors". If one or more of these risks or uncertainties arises, or if underlying assumptions prove incorrect, the Company's actual results may vary materially from those expected, estimated or projected. Given these uncertainties, potential Shareholders should not place undue reliance on forward-looking statements.

These forward-looking statements speak only as at the date of this Document. The Company undertakes no obligation to update forward-looking statements or risk factors other than as required by the AIM Rules for Companies or applicable law, whether as a result of new information, future events or otherwise.

CONTENTS

PLACING AND SUBSCRIPTION STATISTICS

Number of Existing Ordinary Shares	48,470,160
Number of Placing Shares being issued pursuant to the Placing	13,333,333
Number of Subscription Shares being issued pursuant to the Subscription	6,666,667
Number of Ordinary Shares in issue on Admission	73,406,692
Approximate percentage of Enlarged Share Capital on Admission represented by the Placing Shares	18.2 per cent.
Approximate percentage of Enlarged Share Capital on Admission represented by the Subscription Shares	9.1 per cent.
Approximate percentage of Enlarged Share Capital on Admission represented by the Placing and Subscription Shares	27.3 per cent.
Number of Ordinary Shares under Option or Warrant following the Placing, Subscription and Admission	24,469,061
Number of Ordinary Shares on a fully diluted basis following the Placing, Subscription and Admission*	97,875,753
Placing and Subscription Price	£0.15
Gross proceeds of the Placing	£2,000,000
Gross proceeds of the Subscription	£1,000,000
Estimated expenses of the Placing, Subscription and Admission (exclusive of VAT)	£1,011,800
Estimated Net Proceeds of the Placing and Subscription	£1,988,200
Market capitalisation of the Company on Admission	£11.01 million

* *On the basis that all Options and Warrants in existence on Admission have been exercised.*

EXPECTED TIMETABLE OF PRINCIPAL EVENTS

Publication of this Document	23 March 2018
Admission and commencement of dealings in Ordinary Shares	8.00 a.m. on 29 March 2018
CREST members' accounts credited in respect of Ordinary Shares	8.00 a.m. on 29 March 2018
Ordinary Share certificates dispatched	within 7 days of Admission

Each of the above times and dates is subject to change at the absolute discretion of the Company and Northland. All references to time in this Document are to London time unless otherwise stated.

DEALING CODES

ISIN	GB00BF3DT583
SEDOL	BF3DT58
TIDM	POLX

EXCHANGE RATE

Unless otherwise specified, this Document contains certain translations of US Dollars (US$) into amounts in British Pounds Sterling for the convenience of the reader based on the exchange rate of £1.00 = US$1.4, being the relevant exchange rate at 4.30 p.m. on 22 March 2018 (the latest practicable date prior to the date of this Document). This exchange rate was obtained from www.xe.com.

DIRECTORS, SECRETARY AND ADVISERS

Directors	Richard Morgan	*Non-Executive Chairman*
	Richard Hullihen	*Chief Executive Officer*
	Kenneth ("Ken") West	*Chief Operating Officer*
	Bastiaan Driehuys	*Chief Technology Officer*
	Jonathan Allis	*Non-executive Director*
	Robert ("Bob") Bertoldi	*Non-executive Director*
	Juergen Laucht	*Non-executive Director*
Registered Office	27-28 Eastcastle Street London, W1W 8DH	
Head Office, business address of the Directors and principal trading address	2500 Meridian Parkway Suite 175 Durham, NC 27713 United States	
Company website	www.polarean.com	
Company Secretary	Stephen Austin	
Nominated Adviser and Broker	Northland Capital Partners Limited 40 Gracechurch Street 2nd Floor London, EC3V 0BT	
Legal advisers to the Company	Reed Smith LLP The Broadgate Tower 20 Primrose Street London, EC2A 2RS	
Legal advisers to the Nominated Adviser and Broker	Marriott Harrison LLP 11 Staple Inn London, WC1V 7QH	
Auditors and reporting accountants	Crowe Clark Whitehill LLP St Bride's House 10 Salisbury Square London, EC4Y 8EH	
Independent Expert	Pharma Ventures Limited 1300 Parkway Court John Smith Drive Oxford Business Park South Oxford, OX4 2JY	
Financial Public Relations advisers	Walbrook PR 4 Lombard Street London, EC3V 9HD	
Registrars	Share Registrars Limited The Courtyard 17 West Street Farnham Surrey, GU9 7DR	
Principal banker	Silicon Valley Bank Alphabeta Building 14-18 Finsbury Square London, EC2A 1BR	

PART I

INFORMATION ON THE GROUP, INVESTMENT OPPORTUNITY AND STRATEGY

1. INTRODUCTION

The Group comprises medical drug-device combination companies operating in the high resolution medical imaging market. The Group develops equipment that enables existing MRI systems to achieve an improved level of pulmonary functional imaging and specialises in the use of polarised Xenon gas (^{129}Xe) as an imaging agent to visualise ventilation (the ability of air to reach the alveoli) and gas exchange (the ability of oxygen to diffuse through the alveolar membrane into the pulmonary vasculature) regionally down to the smallest airways of the lungs, the tissue barrier between the lung and the bloodstream and in the pulmonary vasculature; a novel diagnostic approach. The Group also develops and manufactures the high performance MRI radiofrequency (RF) coils which are a required component for imaging ^{129}Xe in the MRI system. The development of these coils by the Group facilitates the adoption of the Xenon technology by providing application-specific RF coils which optimise the imaging of ^{129}Xe in MRI equipment.

The Group was formed on 31 May 2017 when the Company acquired the Subsidiary. The Subsidiary was formed as a result of two mergers: the first between Polarean Merger-Sub Inc. and m2m, a company that the Subsidiary had developed a relationship with during the course of previous research and commercialisation programmes in the US and the second between m2m and the Subsidiary. m2m was previously a portfolio company of Amphion Innovations plc, developer of medical, life science, and technology businesses, which is itself currently listed on AIM.

2. INVESTMENT CASE

Pulmonary disease currently affects hundreds of millions of people globally, including approximately 174 million people who suffer from Chronic Obstructive Pulmonary Disease (COPD), which is responsible for 6 per cent. of all deaths globally each year. In the US more than 30 million people suffer from a chronic lung disease such as COPD, which includes emphysema, chronic bronchitis and asthma. In addition to its significant human toll, pulmonary disease also represents an economic burden in excess of US$150 billion annually in the US alone.

Every type of pulmonary disease involves some combination of ventilation and/or gas exchange impairment, yet the successful and cost-effective treatment of lung disease is hampered by sub-optimal methods for quantifying pulmonary ventilation and gas exchange. Current diagnostic techniques are either imprecise (such as spirometry) and/or expose the patient to potentially dangerous radiation (such as x-rays, CT scans and nuclear scintigraphy). While spirometry has benefits as a screening tool, none of these current methods can visualise ventilation or gas exchange regionally in the smallest airways, where lung disease typically begins and where improvements from new pharmaceutical therapies can first be detected.

As such, the Group operates in an area of significant unmet medical need and a number of key milestones are expected to be achieved by the Group over the next 12 to 24 months. The FDA has accepted the Group's Phase III trial design. The most important near-term milestone will be the successful completion of the FDA Phase III clinical trial in the US for the Group's technology. The proposed 80 patient non-inferiority trial will take place at Duke University Medical Center and the University of Virginia, two leading US research hospitals. The trial is expected to commence early in the second quarter of 2018 and to last for approximately 18 months, which includes the time required to prepare the New Drug Application (NDA). Upon completion of the Phase III trial and filing of the NDA, the Directors anticipate receiving a broad indication for use from the FDA following the FDA's review period.

The Group's technology overcomes important limitations of current lung diagnostic methods, providing the ability to visualise, quantify and monitor both the structure and function of the smallest airways and alveolar spaces with enhanced sensitivity and without harmful radiation. This provides a unique, valuable and more precise tool to help diagnose disease earlier, identify the type of intervention likely to benefit a patient, monitor the efficacy of treatment and facilitate developing new therapies for pulmonary diseases.

3. GROUP STRUCTURE AND HISTORY

The Company was incorporated in England and Wales on 24 October 2016 with company registration number 10442853. The Company's registered office is 27-28 Eastcastle Street, London, W1W 8DH.

Polarean Merger-Sub Inc., one of the companies involved in the first merger which resulted in the creation of the Subsidiary, was incorporated by the Subsidiary as a wholly-owned subsidiary incorporated in the US State of North Carolina on 23 November 2016. Polarean Merger-Sub, Inc. had its registered office at 2 South Salisbury Street, Raleigh, NC 27601 prior to being merged with and into m2m on 30 May 2017.

m2m, the company involved in both of the mergers which created the Subsidiary, was formed in the US State of Delaware on 18 February 1999 following the merger of spin out companies from Columbia University and the University of Queensland respectively, which was enabled by a financing round led by Amphion.

The Subsidiary was incorporated in the US State of North Carolina on 10 June 2011 and has its registered office at Wells Fargo Capitol Center, 150 Fayetteville Street, Suite 2300, Raleigh, NC 27601-2958.

On 17 May 2017 Polarean Merger-Sub, Inc. and m2m entered into a conditional agreement to complete the m2m Merger. The m2m Merger was conditional on completion of the Pre-Merger Fundraise. The m2m Merger and the Pre-Merger Fundraise were announced by Amphion on 31 May 2017. As a result of this transaction, the Subsidiary became the sole shareholder of m2m. Further details of the m2m Merger are set out in paragraphs 3.2 and 16.2.6 of Part VII of this Document.

On 31 May 2017, following completion of the Share Exchange with the former shareholders of the Subsidiary, the Company became the sole shareholder of the Subsidiary. Thereafter, the Subsidiary's board of directors determined that it was in the best interests of the Group to simplify the Subsidiary's corporate structure by merging m2m with and into the Subsidiary, with the Subsidiary being the surviving entity. This internal restructuring was completed on 1 September 2017. Further details regarding the establishment of the Group, including diagrams of the company structure at the various stages of its establishment, are set out in paragraph 3 of Part VII of this Document.

In December 2017 the Group raised £647,127 via the issuance of the Convertible Loan Notes in order to progress key workstreams ahead of the commencement of the Phase III trials. The Convertible Loan Notes and any accrued interest will automatically convert into fully paid Ordinary Shares at a conversion price equal to 90 per cent. of the Placing Price upon Admission. The Convertible Loan Notes have an interest rate of 10 per cent. per annum. In the event that Admission (and this automatic conversion) has not occurred by 31 March 2018, the Notes will be repayable over 10 months from 1 April 2018. The holder of each Convertible Loan Note will be granted warrants to subscribe for Ordinary Shares at Admission. The number of warrants to be issued will be equal 20 per cent. of the par value of the Convertible Loan Notes held by each Shareholder, divided by the Placing Price. The exercise period for the warrants will be 12 months from Admission.

4. INFORMATION ON POLAREAN, M2M AND STRATEGY OF GROUP

4.1 Polarean, Inc. – Background

The Subsidiary was co-founded by Dr Bastiaan Driehuys, a current Director of the Company, and John Sudol, a former director of the Subsidiary, in 2011. Prior to co-founding the Subsidiary, Dr Driehuys was a member of a research team at Princeton University in the early 1990s which was amongst the first research teams to focus on hyperpolarised gas MRI technology, in particular isotopically enriched Helium (^{3}He), and developed and held key patents relating to the technology. The technology was acquired in 1999 by Amersham, Inc. ("**Amersham**"), with the goal of commercialising hyperpolarised Helium products to be marketed and distributed alongside Amersham's full line of contrast agent products. Dr Driehuys led the development efforts for Amersham, which continued the development of these hyperpolarised Helium products throughout the early 2000s until GE Healthcare ("**GE**") acquired Amersham in 2004.

GE continued the research and development of hyperpolarised gas MRI after the acquisition of Amersham, focusing on ^{129}Xe as a more effective substitute for ^{3}He in visualising ventilation. GE also began to explore ways in which ^{129}Xe could be used to image gas exchange within the lung in addition

to ventilation. These work programmes culminated in the conduct of a Phase I/II clinical trial at Duke University in 2008-2009. GE also filed INDs with the FDA for both ^{3}He and ^{129}Xe.

By 2010, after an investment of around US$40 million in the technology and with the regulatory path for hyperpolarised gas remaining unclear, GE decided to out-license the hyperpolarised gas technology and the related patent families that it had developed and/or maintained to the Subsidiary, due to the scale at the time and the early stage nature of the technology's development.

In December 2011, the Subsidiary negotiated the acquisition of all of GE's assets related to the hyperpolarised MRI project, including an inventory of polarisers and parts and the licenses (or outright ownership) of the related patent families.

Following the acquisition of GE's hyperpolarisation assets, the Subsidiary focused on three key objectives:

- building and selling polarisers to research users to generate operating revenue and to disseminate the technology to academic research institutions that generate clinical data in order to build additional interest in the technology;
- further developing the xenon hyperpolarisation technology in order to meet clinical use specification requirements; and
- liaising with the FDA in order to clarify the FDA regulatory path under which the product could achieve clearance to market for clinical use.

In July 2012, the US Congress passed the FDA Safety and Innovation Act and the Medical Gas Act, which clarified and simplified the path under which hyperpolarised gas MRI technology could be approved for clinical use by the FDA.

As a result of discussions between the Group and the FDA, the Directors believe that a clearer path towards regulatory approval now exists. As such, following Admission the Company intends to focus on conducting the clinical studies required for FDA approval to market.

Between 2012 and May 2017, the Subsidiary generated over US$3.7 million of revenue from selling polarisers to customers in Canada, Germany, the UK and the US for research use, relating to both clinical (human) and pre-clinical (animal) applications. In addition, the Subsidiary received additional funding of approximately US$2.5 million from Nukem and other Series A investors. Prior to the m2m Merger, the Subsidiary was also successful in receiving grant funding, including a US$3 million grant awarded in April 2017 by the US National Heart, Lung and Blood Institute (NHLBI) following a competitive application process (for which the research will be conducted with its clinical collaborator, the Cincinnati Children's Hospital) and a US$250,000 small business research loan from the North Carolina Biotech Center in March 2017, which was also awarded following a competitive application process. Additional information regarding the grant from the NHLBI is set out in paragraph 15 of Part VII of this Document.

4.2 **m2m Imaging – Background**

Following its formation in 1999, m2m focused on the design and development of high performance MRI RF coils for the global research market. Primarily, m2m focussed on the custom development of application-specific coils for multi-nuclei high field MR, known as micro-imaging. m2m also developed technologies and intellectual property relating to the use of cryogenics and high temperature superconductors for use in MRI RF coils.

Prior to the m2m Merger, m2m had generated more than US$8 million in revenue over the course of its lifetime from sales to academic and research institutions and major pharmaceutical companies in Canada, Germany, the UK and the US. In addition, m2m was ISO 9001 and ISO 13485 certified and certain serially produced products were CE marked. A significant percentage of m2m's products went to market embedded in the imaging systems of major system manufacturers, including Bruker, Siemens, Varian and Agilent, all of which had supply relationships in place with m2m.

4.3 **Rationale for the m2m Merger**

The Subsidiary developed a relationship with m2m as a result of various research programmes that both companies were involved with in the US.

Each new application in Xenon imaging requires new, clinically optimised, RF coils designed specifically for detecting the Xenon signals and currently the major manufacturers of MRI systems do not engage in early stage development of these RF coils. As such, both the Subsidiary and m2m agreed to execute the m2m Merger as Xenon-specific coils gate the use of Xenon on existing MRI systems. It is anticipated that having access to this coil technology will accelerate the development and use of the techniques that the Subsidiary has developed, thus removing a barrier to market entry for the Group's technology. In addition, as the applications of the Group's technology move beyond the initial pulmonary function, key elements of the proprietary technology platform which had initially been developed by m2m, specifically relating to the use of cryogenics in RF signal detection, may play a key role in enabling and improving the viability of these applications.

4.4 **The Group's Technology and Products**

The Subsidiary is a clinical-stage company and its lead product has been designated as a drug-device combination by the FDA. The Subsidiary's product enables the visualisation of hyperpolarised ^{129}Xe ("**HPX**") via MRI technology to help diagnose lung disease earlier, identify the type of intervention likely to benefit a patient and to monitor the efficacy of treatment. As a result of the FDA's drug-device designation, the Subsidiary's products will be approved and sold only for use with each other. The products are currently being used at a number of research sites on a pre-FDA clearance basis to facilitate the research and evaluation of lung function, to assist in making improved disease progression assessment and to clearly visualise the effectiveness of several therapeutics which are under development. The Group currently generates revenue from the sale of its ^{129}Xe gas hyperpolarisation platform.

Implementing the Group's technology in a clinical setting is straightforward: prior to the MRI scan a patient breathes in a small amount of inert HPX to provide an extremely strong MRI signal. This transforms the MRI from a technology that is not applicable to the lungs into one that is able to provide multiple images of the lung structure and function in one 10-20 second breath-hold. HPX MRI overcomes the limitations of traditional pulmonary function testing as HPX MRI:

- is more accurate and reproducible than spirometry and other traditional pulmonary function tests, enabling the detection and mapping of small and localised changes in lung ventilation and gas exchange over time;
- provides regional information about lung disease without exposure to ionising radiation or radioactivity; and
- assesses ventilation and gas exchange in the smallest airways, where disease often begins.

The Group's technology works in conjunction with traditional MRI, transforming it into a powerful diagnostic modality for the lung. The Group's approach is to take ^{129}Xe, an inert gas, and hyperpolarise the nucleus to create an MRI signal which is approximately 100,000 times stronger than a conventional MRI signal. When the MRI scan is undertaken, the HPX resonates at different frequencies: (i) in the bronchioles and alveoli of the lung; (ii) in the barrier tissue of the lung; and (iii) when dissolved in arterial blood in the pulmonary vasculature, thus providing information on ventilation (the ability of air to reach the alveoli) and gas exchange (the ability of air to diffuse through the alveolar membrane into the pulmonary vasculature). As all pulmonary diseases result from impairments to the free flow of air through bronchioles, or from abnormal gas exchange between the lung alveoli and the pulmonary vasculature, the images that result from HPX MRI scans which have been executed using the Group's technology can aid diagnosis, as the physician's ability to clearly identify issues with ventilation and gas exchange on a regional basis, down to the smallest of airways, is enhanced.

Hyperpolarisation of the ^{129}Xe is accomplished by placing a non-radioactive isotope of Xenon (^{129}Xe) into a beam of circularly polarised laser light in the presence of very small concentration of the alkali metal Rubidium, which acts as a physical catalyst in the hyperpolarisation process. The result is ^{129}Xe

whose nuclear magnetic spin is highly aligned but not chemically or biologically different than unpolarised ^{129}Xe, an inert gas. This hyperpolarised state persists for around 2 hours allowing ample time to administer the HPX to the patient.

The Group's products include:

- the ^{129}Xe gas (see Figure 1 below), blended and made under GMP at high purity, to be polarised within the polariser;
- the polariser itself (see Figure 2 below), of which the latest model, the Polarean 9820 Xenon Hyperpolariser, has been designed to deliver up to 3 litres of HPX per hour (approximately 5-10 doses) of which each dose is to be used within 30 minutes of its production in order to retain sufficient polarisation to create a strong image;
- the dose delivery inhalation bag (see Figure 3 below), made of HPX-compatible impermeable plastic materials and a mouthpiece for ease of inhalation; and
- the Polarean 2881 Polarisation Measurement Station (see figure 4 below), which provides a calibrated measurement of the polarisation of hyperpolarised gas within the dose delivery inhalation bag.

The Group currently designs and builds the polariser equipment and has relationships with GMP gas producers to supply the Group with high purity ^{129}Xe.

In order to take advantage of the Group's current products, an MRI machine is required to be outfitted with hardware and software capable of operating at ^{129}Xe frequency to detect the HPX signal. In addition, the patient will need to wear a ^{129}Xe RF chest coil to allow for detecting the HPX MR signal in the lungs. Approximately 35,000 MRI machines are currently in use worldwide and technically many of these can be easily adapted to be used with ^{129}Xe frequency. The Group's products can be placed near the MRI scanner for ease of radiology workflow and, following the m2m Merger, the Group has continued to explore ways to further integrate the Group's existing technology with the coils which had previously been the focus of m2m.

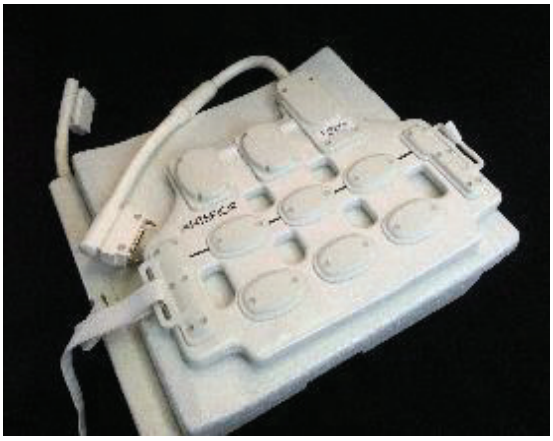
Figure 1, Proprietary ^{129}Xe blended gas

Figure 2, the Polarean 9820 Xenon Hyperpolariser

Figure 3, the dose delivery inhalation bag

Figure 4, the Polarean 2881 Polarisation Measurement Station

Figure 5, the Torso Xenon FR coil



4.5 **Location**

The Group is based at the Meridian Corporate Center, located in the Research Triangle Park area of North Carolina, which provides a favourable location at which to further develop the core technology and product range. The Group's facilities consist of more than 4,000 square feet of combined offices, laboratory space, inventory warehouse and assembly and testing areas. The Group benefits from facilities that were originally purpose-built by GE for the design and manufacture of hyperpolarisation equipment and components, pursuant to FDA-mandated guidelines.

Within these facilities are a dedicated research and development laboratory equipped with 3-phase power, central compressed air, specialty gas handling and distribution and separate heating, ventilation and air conditioning. The laboratory area also includes optical cell production equipment capable of simultaneous processing of four optical cells for Xenon applications. The laboratory is designed for safe operation of class 4 lasers and is equipped with laser power and spectral testing apparatus.

The Group also maintains a dedicated polariser test bed that is used for product development and a dedicated NMR system capable of delivering available electromagnetic field strength, utilised for calibrating absolute polarisation measurements of hyperpolarised gas samples.

4.6 **The Regulatory Environment**

At present, prior to the receipt of any approvals for clinical use, the Company sells its polarisers and disposables for research use only to academic medical centres with their research being subject to oversight by their respective institutional review boards and the FDA or equivalent regulatory body.

The Group has held regular meetings with the FDA to develop a path towards approval for clinical use and the FDA has indicated its willingness to accept a very broad indication for use for the Group's technology – for the evaluation of pulmonary function – as opposed to its use being limited to any particular pulmonary disease or condition. The FDA has reviewed proposals for the Group's Phase III clinical trials and has provided clearance for the trials to take place. The Phase III trials include a total of 80 patients and the FDA has indicated that it will also accept existing literature-based data in fulfilment of certain safety and toxicology requirements. The Directors believe that this broad indication and limited clinical trial size provides the Group with a sizeable, addressable market at a modest clinical trial cost.

4.7 **The Group's Customers**

The Group's existing customer base already comprises some of the world's luminary medical imaging research institutions. Indeed, there are currently twelve research institutions worldwide utilising the Group's system and products, including Cincinnati Children's Hospital, the University of Virginia, University of Wisconsin – Madison and Duke University in the US, Robarts Research Institute and Hospital for Sick Children (SickKids) in Canada, the University of Oxford and the University of Nottingham in the UK and the Fraunhofer Institute for Toxicology and Experimental Medicine in Germany. There are currently 15 Xenon Hyperpolariser units installed at these and several other leading research hospitals and the Group anticipates selling further units for research purposes during the course of the Phase III clinical trial.

4.8 **The Group's Suppliers**

The Group has entered into Master Service Agreements with two CROs in relation to the Phase III trial. Pharma Start LLC, doing business as Firma Clinical Research, has been engaged to project manage the trial and will oversee the recruitment of patients for the trial. In addition, Icon Clinical Research Limited will assist with the medical imaging aspects of the trial. Further information regarding the terms of these two Master Service Agreements are set out in paragraphs 13.2.2 and 13.2.3 of Part VII of this Document.

The Group has a long standing relationship with Nukem Isotopes GmbH, a leading global supplier of ^{129}Xe, the isotope of Xenon which is provided to the various gas blenders that in turn supply gas to the Group. Further information regarding the terms of the Subsidiary's Supply Agreement with Nukem is set out in paragraph 14.5 of Part VII of this Document.

In December 2017 the Company signed a letter of intent ("**LoI**") with Linde Electronics and Speciality Gases, a division of Linde Gas North America LLC ("**Linde**"), in relation to a potential product supply agreement. Under the terms of the LoI, the Company and Linde have agreed to negotiate, prepare and sign a product supply agreement for the supply of industrial gas to the Company, subject to all required licences and approvals being obtained by the parties. Further information regarding the LoI is set out in paragraph 13.2.9 of Part VII of this Document.

4.9 **Current Trading and Prospects**

Trading of the Group since the completion of the m2m Merger continues to be in line with the Directors' expectations. The potential of the Group's technology enables the Directors to view the future with confidence and they look forward, post-Admission, to having the funds available with which to execute the proposed Phase III clinical trials and to seek to exploit the addressable markets for the Group's technology.

4.10 **Growth Strategy**

The Group estimates that in the short term it will generate additional revenue from the sale of hyperpolarisers to global research institutions and the Directors believe that the market for polarisers will grow as the technology gains wider acceptance as a tool for studying lung disease and for monitoring the effectiveness of therapeutics. At present, a number of major pharmaceutical companies are working with universities that are well known to the Group, regarding the use of HPX

MRI technology to help guide clinical trials of developmental pharmaceutical products which is raising awareness of the Group's technology and product range.

The FDA have accepted the Group's Phase III clinical trial design and upon completion of the Phase III trial and subsequent FDA approval, the Group will adopt a traditional market entry strategy of building market awareness for its technology through key opinion leaders and a direct sales force to reach the key decision makers within its initial target market of large academic medical centres. In implementing this strategy, the Group benefits from more than 400 journal articles on the use of hyperpolarised gas MRI that are currently published in peer-reviewed journals. Over time, as more research centres purchase the Group's equipment and begin clinical studies, an increasing number of peer reviewed scientific articles are likely to be published, further enhancing the Group's credibility and raising awareness of the Group's technology. The Group also intends to continue patenting and in-licensing hyperpolarised gas technology IP to protect its current position.

Following completion of the Phase III trial and upon receipt of FDA clearance to market the technology, the Group's initial sales targets will be the radiology departments of top academic hospital organisations in the US, who are opinion leaders in the use of new diagnostic technologies and their application in a clinical setting.

Subsequently, the Group will seek to expand its sales and marketing teams. Because of the specialty nature of the Group's products in the pulmonary specialist market, which is concentrated in approximately 1,000 medical centres, the Directors believe that a small specialty sales force can be deployed effectively at reasonable cost. The Group may also choose to partner with companies that offer complementary products.

Furthermore, the Directors believe that the Group's products will benefit a number of clinical applications. While the Group's HPX MRI technology provides more specific information than currently available using existing lung diagnostic procedures (especially spirometry), the Group will focus its use on specific clinical conditions where the high accuracy of HPX MRI and greater cost are justified. The Directors do not believe that HPX MRI will replace low-cost spirometry as a general screening tool but believe that it should add value in more demanding clinical applications where HPX MRI addresses unmet diagnostic needs. These applications could include, but are not limited to, the following:

- the monitoring of COPD therapy, especially for the most severe cases;
- the management of cystic fibrosis exacerbations;
- a more efficient diagnosis of dyspnoea and the chronic cough;
- providing guidance for radiation therapy planning of lung cancer treatment;
- providing guidance for interventional pulmonology procedures including ablation and the placement of valves and stents;
- surgical procedure planning for lung transplant and volume reduction surgery;
- diagnosis of IPF and monitoring of IPF therapy; and
- diagnosis of PAH and monitoring of therapy.

The Directors will also seek to develop relationships with a range of strategic partners and will evaluate opportunities which will enable the Group to address its target markets globally, either alone or in collaboration with a partner.

5. INTELLECTUAL PROPERTY ("IP")

The Group's technology has been developed in four areas: (i) hyperpolarising gas; (ii) assuring the quality of the hyperpolarised gas; (iii) using the polarised gas in MRI applications; and (iv) developing and producing specialised RF coils to improve signal-to-noise ratios ("**SNR**").

GE had put a comprehensive patent policy in place to protect its technology from potential competitors. The Group is now the sole owner of this IP portfolio, which is based on 22 patent families, and when combined with the 7 patents that were previously owned by m2m, that were transferred to the Group following the m2m Merger, the Group's portfolio covers four broad types of patents:

- *imaging methods* – these cover the imaging of a subject, or patient, who has inhaled a hyperpolarised noble gas and the functionality of the gas as a contrast agent. Newly licensed technology from Duke University extends the protection over these patents through to the early 2030s;
- *hyperpolarisation methods* – these are Polarimetry patents covering the methods by which noble gases are polarised and the methods by which the resulting polarised gas is isolated and delivered to patients. The latest of these patents expire in the early 2020s;
- *hyperpolarisation equipment* – these patents cover the multiple preferred mechanical design and automation elements of hyperpolarised equipment; and
- *RF coil patents* – these patents cover the use of cryogenics to improve RF coils SNR and image quality and may play an important part in the next generation of applications such as neurological, cardiac and oncology imaging.

5.1 **Existing Patent Protection**

The Directors believe that the patent protection which is currently in place is robust. Certain patents currently owned or exclusively licensed by the Group, which the Directors believe to be particularly material to the Group's products and the successful implementation of the Group's strategy, are summarised in the table below:

Application Country	*Number*	*Patent Priority Date*	*Number*	*Recorded Expiration Date*	*Owner*
US	11/280069	17 May 2002	7275413	15 May 2023	The Subsidiary
US	11/856805	17 May 2002	7746075	15 May 2023	The Subsidiary
US	10/438464	17 May 2002	7127934	19 February 2024	The Subsidiary
US	10/277909	22 October 2001	7287390	22 April 2024	The Subsidiary
US	10/277911	22 October 2001	7287391	22 April 2024	The Subsidiary
US	14/535990	3 October 2006	9625550	13 Feb 2028	Duke University
US	11/866552	3 October 2006	8911709	16 Dec 2032	Duke University
US	15/120013	21 February 2014	—	est. 2034, if issued	Duke University

Patents 7127934, 7275413 and 7746075 grant protection over the Group's methods, systems, circuits and computer programme products for determining the polarisation of a gas. The Directors refer to these patents as the Group's "Polarimetry patents" and believe they are of particular significance to the Group as a result of its classification as a drug-device combination company, i.e. the Group's technology is responsible for creating the ^{129}Xe, at point of use. As such, the measurement of the polarisation is fundamental to determining when the ^{129}Xe can be delivered to a patient, regardless of the specific method of polarisation.

Patents 7287390 and 7287391 are referred to by the Directors as the Group's "automation patents" and grant the Group protection over certain processes and systems. Specifically these patents grant protection over the Group's optical pumping modules, the polarised gas blending and dispensing systems, automated modular hyperpolarisers (and related devices and methods) and automated polarised gas distribution systems (and related devices and methods).

Patents 8911709 and 9625550 grant protection to the Group's systems and methods for assessing pulmonary gas transfer using hyperpolarised ^{129}Xe. These patents were granted to Duke University and are exclusively licensed to the Group, and protect the inventions of Bastiaan Driehuys, the Group's Chief Technical Officer. The Directors believe these patents, the last of which expires in 2032, will be particularly significant to clinical indications beyond ventilation imaging. In addition, these patents are pending in European and other international jurisdictions.

As a result of the protections granted to the Group by the patents summarised above, the Directors believe that efforts by potential competitors to design products around multiple optimal, patented technologies that could be commercially successful would be unlikely and costly, and that the resulting freedom to operate would also be limited.

5.2 **Future Patent Strategy**

Polarean is committed to proactively developing further IP, both internally and through licensing arrangements with third parties, as part of the Group's overall growth strategy. The third parties are likely to include the Group's key collaborative academic sites, such as Duke University, that are seeking to develop emerging applications and technologies. Because of the Group's extensive patent portfolio and leading market position, the Directors believe the Group is an attractive licensing partner for academic research institutions that are interested in out-licensing such IP.

One such patent application (US15/120013), which is currently pending, relates to improving the overall efficiency of the hyperpolarisation process. This patent has also been exclusively licensed to the Group by Duke University. The Directors believe that this patent, if prosecuted successfully to issuance, would enable the Group to protect methods for increasing the level of hyperpolarisation significantly, which could improve the competitive economics of the Group's products. These patents are also pending in Europe and other international jurisdictions.

5.3 **FDA New Chemical Entity Status**

In addition to the Group's existing IP portfolio, as a designated drug-device combination company, the Directors have considered whether the Group's ^{129}Xe product could qualify as a New Chemical Entity ("**NCE**") under US Federal Law. Such NCE status would provide 5 years' exclusivity over other applicants seeking approval of the same drug product once the FDA approves the product for marketing.

The Directors, having consulted with the Company's regulatory advisors and having considered the views of independent regulatory and legal experts in the field, have concluded that there is nothing to suggest that the ^{129}Xe product manufactured by the Company's technology will not be afforded NCE status under US Federal law.

6. COMPETITION AND COMPETITIVE LANDSCAPE

As a result of the Group's intellectual property, summarised above, the Directors do not foresee any competitive entries in the US or European markets in the short term. At present, the Directors believe that competing technologies are either significantly less consistent, are non-quantitative or invasive (i.e. use x-rays or radioisotopes), are unsuitable for recurrent use, or fail to assess gas exchange.

The Group competes indirectly with imaging and non-imaging methods for measuring the lung function. Compared to the Group's technology, the Directors believe existing imaging methods, such as spirometry, are less accurate and other methods, such as x-rays, CT scans and nuclear scintigraphy, also expose the patient to potentially dangerous radiation. Spirometry is a low-cost and frequently ordered test but its variability makes it more of a screening test, providing only a global reading of the lung function without any regional information. Imaging methods such as CT scans and x-rays can provide regional information and are best suited to determine the structure of the lung, not its functional performance, and do not visualise the smallest airways. They can also expose the patient to harmful radiation, as does scintigraphy, a low-resolution method of determining regional lung function. The Group's technology overcomes all these limitations of existing lung function diagnostics.

The Directors also believe that the Group currently has no commercially viable competition in the field of HPX. A US-based company, Xemed LLC ("**Xemed**"), has conducted government-funded research involving technology similar to that of the Group, but the Group does not perceive this technology to be commercially viable at present due to factors such as cost, technical design limitations, know-how, and patent impediments. The Group has maintained a regular dialogue with Xemed in recent years and Xemed's management have confirmed that it will only use its own technology in FDA "Safe Harbour" applications pursuant to the Hatch Waxman Act. Whilst Xemed is prevented from any commercial activity that infringes any valid patent (including those of the Group), the FDA "Safe Harbour" permits Xemed to develop information required for submission to FDA in support of an ultimate approval, even if such work would otherwise infringe a valid patent.

In addition to Xemed, Cyclomedica Australia Pty Ltd ("**Cyclomedica**"), a subsidiary of the ASX listed company Cyclopharm Ltd, is currently marketing Technegas, a product to detect ventilation defects. Whilst

marketing this product outside the US, Cyclomedica is also undertaking a Phase III trial in the US to gain US marketing approval using a similar trial design to the Group, albeit with a larger number of patients. Like the Group, Cyclomedica's technology aims to enhance the diagnosis of pulmonary diseases, including COPD via imaging. Technegas is an ultra-fine dispersion of Technetium-labelled carbon, a technology that exposes the patient to ionising radiation. The Directors believe the product is also limited to the detection of ventilation defects and cannot be used to detect gas exchange impairment. As such, the Directors believe that Cyclomedica's product currently has certain attributes and limitations that will make it less attractive in the marketplace than the Group's products.

7. SUMMARISED HISTORICAL FINANCIAL INFORMATION

The table below sets out the income statement of the Subsidiary for the three years ended 31 December 2016.

Currency: US$'000s	*FY14*	*FY15*	*FY16*
Revenue	965	902	881
Cost of sales	(168)	(308)	(489)
Gross profit	797	594	392
Administrative expenses	(770)	(1,186)	(1,398)
Depreciation and amortisation	(12)	(10)	(9)
Selling and distribution expenses	(87)	(25)	(36)
Loss on contingent consideration revaluation	–	(284)	(5)
Operating loss	(72)	(911)	(1,056)
Interest	(37)	(160)	(4)
Loss before tax	(109)	(1,071)	(1,060)
Tax	–	–	–
Loss after tax	(109)	(1,071)	(1,060)

The Subsidiary has generated over US$800,000 of revenue in each of the three financial years to 31 December 2016, through a mix of the sale of polarisers, the sale of parts and upgrades, the provision of servicing and the receipt of grants.

Administrative expenses have increased year-on-year, principally due to an increase in consultancy and salary costs as the Subsidiary has grown and the company has been prepared for a listing. Consultancy costs were mainly incurred for Chief Executive Officer services.

The Subsidiary is continuing to develop and refine its core product, being the polariser, and therefore incurred losses after tax of US$109,000, US$1,071,000 and US$1,060,000 in 2014, 2015 and 2016 respectively.

The table below sets out the balance sheets of the Subsidiary for the three years ended 31 December 2014, 2015 and 2016.

Currency: US$'000s	*Dec-14*	*Dec-15*	*Dec-16*
Intangibles	32	28	23
Property, plant and equipment	11	6	12
Trade and other receivables	4	4	4
Total non-current assets	47	38	39
Inventory	275	402	322
Trade and other receivables	380	135	15
Cash	113	912	98
Total current assets	768	1,449	435
TOTAL ASSETS	815	1,487	474
Trade and other payables	778	495	562
Deferred revenue	88	129	67
Borrowings and loans	394	144	105
Total current liabilities	1,260	768	734
Deferred revenue	79	49	10
Provision for contingent consideration	27	311	316
Total non-current liabilities	106	360	326
Total liabilities	1,366	1,128	1,060
Share premium	2	1,839	1,839
Other equity	75	138	138
Share based payment reserve	42	123	238
Accumulated losses	(670)	(1,741)	(2,800)
Total equity	(551)	359	(586)
TOTAL LIABILITIES AND EQUITY	815	1,487	474

The Subsidiary acquired a number of patents on completion of the Asset Transfer Agreement it entered into with GE. As at 31 December 2016, these patents had a net book value of US$23,000. As part of the transfer, the Subsidiary agreed to pay 5 per cent. of gross revenue on clinical sales of products that are sold related to the patents purchased, for a period of seven years. As at 31 December 2016, this liability was valued at US$316,000 based on a probability weighted expected return method using projected future cash flows. Further details of the Asset Transfer Agreement are set out in paragraph 16.2.3 of Part VII of this Document.

The accumulated losses of the Subsidiary increased between 1 January 2014 and 31 December 2016 as result of the development expenditure incurred by the Subsidiary in improving and preparing to commercialise its products. The Company held cash amounts of US$98,000 at 31 December 2016.

8. DIRECTORS

Summarised biographies of the Directors and details of their roles, including the principal activities performed by each of them outside the Group, are set out below:

Richard Morgan, *Non-Executive Chairman (aged 73)*

Richard Morgan was a founder and continues to be an Executive Director of Amphion Innovations plc. Mr Morgan has played an active role in the development of over 35 life science companies, including MediSense, Inc. and Celgene Corporation and, most recently, Kromek plc and Motif Bio plc. Prior to founding Amphion, Mr Morgan spent time at Wolfensohn Partners, LP and spent 15 years with Schroders plc, a British merchant bank, where he was a member of the board of the merchant bank and head of the

Schroder Strategy Group, which he founded. Mr Morgan, a British citizen, was raised in Kenya and educated in England.

Mr Morgan graduated with a Bachelor Engineering First Class Honours from the University of Auckland, New Zealand. In 1982 he completed the Advanced Management Program at the Harvard Business School.

Richard Hullihen, *Chief Executive Officer (aged 65)*

Richard Hullihen began his career with GEC-Picker International in the start-up and formation of their CT and MRI businesses, holding key positions in engineering and programme management before moving into corporate business development and strategic planning. He also set up joint ventures in Japan for the production of MRI systems. Mr Hullihen led the acquisition of Instrumentarium's MRI business and was then Director of Development for the parent organisation, leading enterprise wide strategic planning and representing the medical business at the corporate level in Marconi Medical Systems, Inc. That led to the start-up of Marconi's healthcare informatics business where Mr Hullihen was Vice President and General Manager. Following that, Mr Hullihen became the Chief Executive Officer of m2m, specialising in the development of high performance cryogenic and superconducting RF coils for magnetic resonance systems.

Mr Hullihen holds a Bachelor of Science degree in electrical engineering from Western Michigan University and an MBA from Case Western Reserve University.

Kenneth ("Ken") West, *Chief Operating Officer (aged 61)*

Ken West began his career with Fortune 200 FMC Corporation in the 1980s, and since that time he has been involved at a senior level with five successful new companies in the medical technology field.

Mr West held senior management positions at three venture-capital backed start-ups, including Vice President of Sales, Marketing and Business Development at Embrex, Inc., a drug delivery company that went public and was acquired by Pfizer, Inc., Chief Operating Officer at VetInsite, a health care information technology company that was acquired by MediMedia and Biolex, a transgenic protein company, where he was a co-founder and the first President/Chief Operating Officer. The company raised more than US$180 million in venture capital and was acquired by Synthon BV. Mr West has also led the US subsidiaries of two European medical device companies as they entered the US market, including Curasan AG and Tem International GmbH. As President of each of these US companies, Mr West built and managed the US organisations, growing them into multi-million dollar subsidiaries with direct sales forces to physician offices and hospitals.

Mr West holds a Bachelor of Science degree in chemical engineering from Cornell University and an MBA from the Wharton School of the University of Pennsylvania.

Bastiaan Driehuys, Ph.D., *Chief Technology Officer (aged 49)*

Bastiaan Driehuys invented hyperpolarised gas MRI while completing his Doctorate in Atomic Physics at Princeton University. In 1996, Dr Driehuys helped to start MITI, a company founded to commercialise hyperpolarised gas technology. In 1999, Dr Driehuys became Chief Executive Officer of the company, managed its acquisition for US$15 million by Amersham and he remained with the company as Director of the Research Triangle Park Facility until 2003. In this senior management position he oversaw all hyperpolarised gas physics and applications research. He served on the Amersham Global Imaging Management Team, which was broadly responsible for the company's diagnostic imaging research efforts for all modalities and disease areas. In 2004, Dr Driehuys returned to academia at Duke University, where he is now a Professor of Radiology, Medical Physics and Biomedical Engineering. His research programme has been focused on driving the clinical translation of HPX MRI and exploiting the unique properties of this atom for functional and molecular imaging.

Dr Driehuys completed his Ph.D. in Atomic Physics and his post-doctoral work at Princeton University after receiving his BA summa cum laude in physics from Franklin & Marshall College in Lancaster, Pennsylvania.

He has authored more than 50 publications in the areas of hyperpolarisation physics and biological applications. He holds 32 granted US patents and is a co-recipient of the Thomas Alva Edison Patent Award, as well as the Tibbetts Award for Outstanding Small Business Scientific Accomplishment.

Robert ("Bob") Bertoldi, *Non-Executive Director (aged 63)*

Bob Bertoldi is Chief Financial Officer of Amphion Innovations plc and was a founder President and continues to be the Chief Financial Officer of Amphion Capital Partners LLC (the predecessor of Amphion) and VennWorks LLC. Mr Bertoldi is also a general partner of Amphion Partners LLC (formerly known as Wolfensohn Partners, LP). Prior to that Mr Bertoldi served as Chief Financial Officer for James D. Wolfensohn, Inc. and Hambro America Inc. Mr Bertoldi is currently a director of Motif Bio plc and was Chief Financial Officer at the time of the company's admission to AIM in April 2015. In addition, Mr Bertoldi serves as a director of Amphion Partner Companies, WellGen, Inc. and Axcess International Inc., and is also a director of DataTern, Inc. and the Subsidiary. Mr Bertoldi began his career at KPMG and left as a manager in the investment services department.

Mr Bertoldi obtained a B.A. in Accounting and Economics from Queens College, New York in 1976 and became a Certified Public Accountant in 1978. He is a member of the American Institute of Certified Public Accountants (AICPA) and New York State Society of Certified Public Accountants (NYSSCPA).

Juergen Laucht, *Non-Executive Director (aged 63)*

Juergen Laucht has over 40 years of business experience in the chemical engineering industry. In 2011 Mr Laucht took on the role of Managing Director of NUKEM Isotopes, prior to which he was the General Manager for Research Reactors & Stable Isotopes for NUKEM. Prior to joining NUKEM in 1995, Mr Laucht held positions at Siemens in their Fuel Fabrication Works team and at Reactor Brennelement Union, both in Germany.

Mr Laucht has a degree in Chemical Engineering from the Technical University of Darmstadt, Germany.

Jonathan Allis Ph.D., *Non-Executive Director (aged 55)*

Jonathan Allis joined the board of the Group as a Non-Executive Director in September 2017. Dr Allis is the founding Chief Executive Officer of Blue Earth Diagnostics. Prior to this role, Dr Allis was the General Manager for PET at GE Healthcare Life Sciences and had global responsibility for GE Healthcare's PET agent and PET synthesis platforms business. He has previously held positions in research and development, marketing and product development at GE Healthcare, Amersham plc., Siemens Medical Solutions and Oxford Magnet Technology in the UK, USA and Germany.

Dr Allis has an undergraduate degree in physics from the University of Cape Town and a doctorate in biochemistry from the University of Oxford.

Dr Allis is considered to be independent from the Group's other Directors and Shareholders at the time of Admission.

9. SENIOR MANAGEMENT AND EMPLOYEES

Summarised biographies of members of the senior management team and key employees and details of their roles, including the principal activities performed by them, are set out below:

William ("Bill") Patrick, *Chief Financial Officer (aged 57)*

Bill Patrick has 25 years' experience in corporate finance, in both public global multinational companies including GEC-Picker International, and privately held and venture backed technology based businesses, including Penske Corp, Kennedy Group and Noteworthy Medical Systems. Mr Patrick is skilled in manufacturing businesses, international operations and business finance.

Mr Patrick has a Bachelors' degree in Business Administration from the University of Toledo and is a Certified Public Accountant in the state of Ohio.

Kiarash Emami Ph.D., *Vice President of Technology and Applications (aged 43)*

Kiarash Emami joined the Subsidiary in 2012, and has directed all aspects of the Group's technical efforts, product development and production, customer relations and support related to ^{129}Xe hyperpolarisers around the world. Over the last fifteen years Dr Emami has been both a user and a developer of HP gas technology in both academic and industrial research organisations. He is the principal investigator for the Group's Phase II SBIR grant awarded by NIH in early 2017.

Prior to joining the Group, Dr Emami held various roles at the University of Pennsylvania as a research investigator in Department of Radiology and a fellow of Penn Centre for Innovation, where he developed a patent-pending clinical HP gas delivery device for metered multi-breath administration of HP gas to subjects. Dr Emami was also a co-founder of Spinhance, LLC, which designed and built the first fully automated ^{3}He polariser system under a limited license from GE Healthcare to support an NIH-funded multi-site COPD trial and the first programmable HP gas-compatible cross-species mechanical ventilator.

Dr Emami holds a Bachelor of Science in mechanical engineering from KNT University of Technology (Tehran), a Masters in bioengineering and a Ph.D. in Electrical and Systems Engineering both from University of Pennsylvania. He has co-authored more than 30 publications on HP gas MRI clinical and pre-clinical applications and devices.

Neil Wadehra, *Vice President of Operations (aged 38)*

Neil Wadehra is a healthcare industry professional with experience at both start-up and Fortune 500 medical device companies who joined the Subsidiary in March 2016. Mr Wadehra has an extensive background in the medical imaging space, both from an engineering and management perspective. Beginning his career at Carl Zeiss, Mr Wadehra developed a new high-speed autofocus system for neurosurgical microscopy. Later at Viking Systems, Mr Wadehra led a team of engineers to develop the first portable 3D High-Definition surgical endoscopic system. His 2D High-Definition system was awarded the 2008 Innovation of the Year from the Society of Laparoendoscopic Surgeons (SLS). At Medtronic, Mr Wadehra was part of an exclusive management-rotation programme and served in roles of increasing responsibility spanning finance, strategy and marketing.

Mr Wadehra holds a Bachelor of Science in Biomedical Engineering from the University of Toronto, a Masters in Biomedical Engineering and Medical Imaging from the University of London and a Masters in Business Administration in Finance and Healthcare Management from the Wharton School of the University of Pennsylvania.

10. REASONS FOR THE PLACING, SUBSCRIPTION AND ADMISSION

The Directors believe that Admission will assist the Group in its development by raising its profile and providing access to wider pools of capital. This will enable the Group to embark on the FDA Phase III clinical trials, begin automation improvements on its polarisers and to further develop its range of RF MRI coils.

Of the net proceeds of the Placing and Subscription receivable by the Company, when taken with the funds raised from the Pre-Admission Fundraise, a minimum of US$3.3 million is expected to be used as follows:

- US$2.1 million for FDA required documentation and the initial production run of polarisers for FDA clearance to market trials and to conduct the clinical trials to gain clearance to market for ^{129}Xe as a contrast agent and the polariser as a device; and
- US$1.2 million for working capital.

11. DETAILS OF THE PLACING AND SUBSCRIPTION

On Admission the Company will have 73,406,692 Ordinary Shares in issue and a market capitalisation of approximately £11.01 million. The Company will have raised £3,000,000 (before expenses) by the issue of 13,333,333 Placing Shares at the Placing Price and 6,666,667 Subscription Shares at the Subscription Price. Northland has conditionally agreed, pursuant to the Placing Agreement and as agent for the Company, to use its reasonable endeavours to procure subscribers for the Placing Shares at the Placing Price. The Placing Shares are being placed with institutional and other investors. The new Ordinary Shares

issued pursuant to the Placing will represent 18.2 per cent. of the Enlarged Issued Share Capital. The Placing has not been underwritten and is conditional, among other things, on Admission occurring by 29 March 2018 and in any event no later than 6 April 2018 and on the Placing Agreement not being terminated. Further details of the Placing Agreement are set out in paragraph 13.1.2 of Part VII of this Document.

Through the Subscription, 6,666,667 Subscription Shares, raising £1,000,000 before expenses, have been subscribed for by high net worth and other investors at the Subscription Price, conditional on Admission. The Directors and persons associated with the Directors subscribed for a total of 713,333 Subscription Shares under the Subscription at the Subscription Price. Further details of the Subscription Agreements can be found at paragraph 13.1.4 of Part VII of this Document.

EIS and VCT investors should be aware that, whilst advance assurance has been obtained from HMRC, the advance assurance is based on certain assumptions and the Directors cannot guarantee that the Placing Shares and the Subscription Shares will be able to be treated as qualifying for relief under EIS or as qualifying holdings within the meaning of Part 6 of the Income Tax Act 2007 (VCT) (as applicable). For further details on EIS and VCT, please refer to paragraph 4 of Part VI of this Document.

It is expected that the appropriate CREST accounts of Placees and Subscribers will be credited on or around 29 March 2018. In the case of Placees and Subscribers requesting Placing Shares and Subscription in certificated form, it is expected that certificates in respect of the Placing and Subscription Shares will be despatched by post within seven days of the date of Admission.

12. ADMISSION, SETTLEMENT AND CREST

Application has been made to the London Stock Exchange for all of the Existing Ordinary Shares and the new Ordinary Shares issued pursuant to the Placing to be admitted to trading on AIM. It is expected that Admission will become effective, and that dealings in the Enlarged Issued Share Capital will commence, at 8.00 a.m. on 29 March 2018.

The Articles permit the Company to issue Ordinary Shares in uncertificated form in accordance with the CREST Regulations. CREST is a computerised share transfer and settlement system. The system allows shares and other securities to be held in electronic form rather than paper form, although a Shareholder can continue dealing based on share certificates and notarial deeds of transfer. For private investors who do not trade frequently, this latter course is likely to be more cost-effective. The Company has applied for the Ordinary Shares to be admitted to CREST with effect from Admission. Accordingly, settlement of transactions in Ordinary Shares held in uncertificated form following Admission will take place within the CREST system.

The ISIN number of the Ordinary Shares is GB00BF3DT583. The TIDM is POLX.

13. LOCK IN AND ORDERLY MARKET ARRANGEMENTS

The Locked-in Persons, who will hold a total of 47,557,725 Ordinary Shares (representing 64.8 per cent. of the Enlarged Issued Share Capital) on Admission, have entered into the Lock-In and Orderly Market Agreements pursuant to which they have each agreed with the Company and Northland that they will not dispose of any interest in Ordinary Shares for the period of 12 months following Admission except in certain limited circumstances. The Locked-In Persons have also agreed that for a further 12 months following the expiry of the initial 12 month period they will only dispose of an interest in Ordinary Shares through Northland (or the broker for the time being of the Company, if it is not Northland) and in such manner as Northland (or such other broker) may reasonably require with a view to the maintenance of an orderly market in the Ordinary Shares.

Further details of the Lock-In and Orderly Market Agreements are set out in paragraph 13.1.5 of Part VII of this Document

14. DIVIDEND POLICY

Following Admission, when it is commercially prudent to do so and subject to the availability of distributable reserves, the Directors may approve the payment of dividends. However, at present, the Directors consider that it is more prudent to retain cash to fund the expansion of the Group and, as a result, feel it is inappropriate to give an indication of the likely level or timing of any future dividend payment.

15. SHARE OPTIONS

15.1 ***2011 Plan***

On 1 December 2011, the Subsidiary adopted the 2011 Plan pursuant to which the board of the Subsidiary could grant options to purchase shares of the authorised but unissued common stock of the Subsidiary. The board of the Subsidiary had discretion to determine to whom stock options were granted, although incentive stock options could only be granted to employees. The maximum number of shares of common stock that could be issued under the 2011 Plan was 6,412,800 shares. All options were required to be granted, if at all, within 10 years of the date of the Plan.

As at the date of this Document, 5,156,960 share options have been granted under the 2011 Plan, each of which was assumed and converted by the Company into options over Ordinary Shares, as described in paragraph 14.3 of Part VII of this Document. Further details of the 2011 Plan are set out in paragraph 5.1 of Part VII of this Document.

15.2 ***Pre-Admission Share Option Plan***

Prior to Admission, the Company adopted a share option plan (the "**Pre-Admission Share Option Plan**") pursuant to which the Company granted options over Ordinary Shares to certain members of the senior management team. As at the date of this document 9,619,200 share options have been granted under this Pre-Admission Share Option Plan.

Further details of the Pre-Admission Share Option Plan are set out in paragraph 5.2 of Part VII of this Document.

15.3 ***Company's share option plan***

Separately, the Company will adopt the Plan, which will be administered by the Board, with effect from Admission. Participation in the Plan will be limited to employees of the Group. Share options granted to non-employees (e.g. consultants and directors) will be by way of a sub-plan, governed by the same rules as the Plan unless the context otherwise provides. As at the date of this Document no share options have been granted under the Plan.

Further details of the Plan are set out in paragraph 5.3 of Part VII of this Document.

16. WARRANTS

At the date of this Document, there are 8,908,501 warrants in issue, which have not yet been exercised or lapsed, all of which are to be settled upon exercise by the issue of Ordinary Shares.

16.1 ***Polarean Warrants***

Prior to completion of the m2m Merger, the Subsidiary issued the Polarean Warrants to be settled by the issue of shares in the Subsidiary. On 30 May 2017, the Company entered into agreements pursuant to which, upon exercise, the Polarean Warrants will be settled by the issue of Ordinary Shares. At the date of this Document, there are 4,921,129 Polarean Warrants in issue, which have not yet been exercised or lapsed, all of which are to be settled upon exercise by the issue of Ordinary Shares.

Further details of the Polarean Warrants are set out in paragraph 6.1 of Part VII of this Document.

16.2 ***Amphion Warrants***

On completion of the m2m Merger, the Company granted a warrant of 5 per cent. of the issued share capital of the Subsidiary following the Merger to Amphion Innovations plc, Robert Bertoldi and Richard Morgan. A total of 2,618,373 Amphion Warrants were issued pursuant to the Amphion Warrant Instrument.

Further details of the Amphion Warrants are set out in paragraph 6.2 of Part VII of this Document.

16.3 ***Subscriber Warrants***

The Company granted 1,236,174 Subscriber Warrants on 31 May 2017 as part of the Pre-Merger Fundraise which the Company concluded as a pre-condition to the completion of the Merger.

Further details of the Subscriber Warrants are set out in paragraph 6.3 of Part VII of this Document.

16.4 ***Pre-Admission Fundraising Warrants***

As part of the pre-Admission Fundraising, which was completed by the Company in December 2017, the Company issued 129,425 Pre-Admission Warrants to subscribers to the Convertible Loan Notes.

Further details of the Pre-Admission Warrants are set out in paragraph 6.4 of Part VII of this Document.

16.5 ***MCS Warrants***

Conditional on Admission, 3,400 MCS Warrants have been granted by the Company to MC Services AG in accordance with the terms of the MCS Warrant Instrument.

Further details of the MCS Warrants are set out in paragraph 6.5 of Part VII of this Document.

17. CORPORATE GOVERNANCE

The Directors intend to take account of the requirements of the Quoted Companies Alliance's Corporate Governance Code for Small and Mid-Size Quoted Companies (the "**QCA Code**"), to the extent that they consider it appropriate having regard to the Company's size, board structure, stage of development and resources.

At Admission Jonathan Allis will be the Company's only independent (as defined in the QCA Code) non-executive director. The Company acknowledges that the guidance in the QCA Code is for a company to have at least two independent non-executive directors. However, the Directors are satisfied that at Admission the Company's board composition is appropriate given the Company's size and stage of development. The Directors shall keep the position under regular review and to the extent additional independence is felt to be required on the Board, it shall be sought.

The Company will hold regular board meetings and the Directors will be responsible for formulating, reviewing and approving the Company's strategy, budget and major items of capital expenditure. The Directors have established an audit committee and a remuneration committee with formally delegated rules and responsibilities. Each of these committees will meet as and when appropriate, but at least twice each year.

The audit committee will comprise Juergen Laucht and Richard Morgan and will be chaired by Robert Bertoldi. The audit committee will, among other things, determine and examine matters relating to the financial affairs of the Company including the terms of engagement of the Company's auditors and, in consultation with the auditors, the scope of the audit. It will receive and review reports from management and the Company's auditors relating to the half yearly and annual accounts and the accounting and the internal control systems in use throughout the Group.

The remuneration committee will comprise Bastiaan Driehuys and Juergen Laucht and will be chaired by Richard Morgan. The remuneration committee will review and make recommendations in respect of the Directors' remuneration and benefits packages, including share options and the terms of their

appointment. The remuneration committee will also make recommendations to the Board concerning the allocation of share options to employees under the intended share option schemes.

The Company does not have a nomination committee, and will not have one on Admission, as the Board does not consider it appropriate to establish such a committee at this stage of the Company's development. Decisions which would usually be taken by the nomination committee will be taken by the Board as a whole. The Board as a whole will also be responsible for AIM compliance.

18. SHARE DEALING CODE

With effect from Admission the Company will adopt the Share Dealing Code, which will apply to any person discharging management responsibility, including the Directors and members of the senior management team and any closely associated persons and applicable employees.

The Share Dealing Code imposes restrictions beyond those that are imposed by law (including by FSMA and the Market Abuse Regulation (EU) No.596/2014 and other relevant legislation) and its purpose is to ensure that persons discharging managerial responsibility and persons connected with them do not abuse, and do not place themselves under suspicion of abusing, price-sensitive information that they may have or be thought to have, especially in periods leading up to an announcement of both financial results and the results of the Group's clinical trials. The Share Dealing Code sets out a notification procedure which is required to be followed prior to any dealing in the Company's securities.

19. ANTI-BRIBERY POLICY

The Group takes a zero-tolerance approach to bribery and corruption and is committed to acting professionally, fairly and with integrity in all business dealings and relationships wherever they occur. The Group implements effective systems to counter bribery and corruption and as part of this the Company has adopted an anti-bribery and anti-corruption policy. The policy provides guidance to those working for the Group on how to recognise and deal with bribery and corruption issues and the potential consequences and applies to all persons working for the Group or on its behalf in any capacity, including employees at all levels, directors, officers, consultants and agents.

20. CITY CODE AND CONCERT PARTIES

The City Code is issued and administered by the Panel. The City Code applies to, among others, all companies whose registered office is in the United Kingdom, the Channel Islands or the Isle of Man and whose securities are admitted to trading on a regulated market or multilateral trading facility in the United Kingdom (such as AIM) or on any stock exchange in the Channel Islands or the Isle of Man. The Company will therefore be subject to the City Code following Admission and Shareholders will be entitled to the protections afforded by the City Code.

Mandatory Bid

The City Code governs, *amongst other things*, transactions which may result in a change of control of a company to which the City Code applies. Under Rule 9 of the City Code, where any person acquires, whether by a series of transactions over a period of time or not, an interest in shares which (taken together with shares in which persons acting in concert with him are interested) carry 30 per cent. or more of the voting rights of a company which is subject to the City Code, that person is normally required by the Panel to make a general offer to all the remaining shareholders of that company to acquire their shares. Similarly, when any person, together with persons acting in concert with him, is interested in shares which in aggregate carry not less than 30 per cent. of the voting rights of a company and not more than 50 per cent. of such voting rights and such person, or any person acting in concert with him, acquires an interest in any other shares which increases the percentage of shares carrying voting rights in which he is interested, a general offer will normally be required in accordance with Rule 9.

Unless the Panel otherwise consents, an offer under Rule 9 must be made in cash (or be accompanied by a cash alternative) and at not less than the highest price paid by the person required to make the offer, or any person acting in concert with him, for any interest in shares of the company during the 12 months prior to the announcement of the offer.

Concert Parties

Under the City Code, a concert party arises when persons acting together pursuant to an agreement or understanding (whether formal or informal) cooperate to obtain or consolidate control of, or frustrate the successful outcome of an offer for, a company subject to the City Code. Control means an interest or interests in shares carrying an aggregate of 30 per cent. or more of the voting rights of the company, irrespective of whether the holding or holdings give de facto control.

Following Admission, there will be two separate concert parties for the purposes of the City Code, the Amphion Concert Party and the Polarean Concert Party.

The Amphion Concert Party will hold in aggregate 24.7 per cent. of the Company's Enlarged Share Capital at Admission. The Amphion Concert Party will consist of Amphion, Richard Morgan and persons associated with him, Bob Bertoldi and L. Jean Macaleer Revocable Trust. The members of the Amphion Concert Party are deemed to be acting in concert as a result of their close relationships with Amphion.

The Polarean Concert Party will hold in aggregate 40.6 per cent. of the Company's Enlarged Share Capital at Admission. The Polarean Concert Party will consist of Bastiaan Driehuys, Kenneth West, Suzanne West, Daybreak Capital Partners LLC, Ajay Khanna, Raghu Ballal, NUKEM Isotopes Imaging GmbH, Duke University, Juergen Laucht, John Sudol and Technology Commercialization Group, LLC. Bastiaan Driehuys and John Sudol are deemed to be acting in concert as they are founding members of the Subsidiary. Kenneth West is the former Chief Executive Officer of the Subsidiary so, along with his wife Suzanne West, he is also deemed to be acting in concert with Bastiaan Driehuys and John Sudol. The remaining members of the Polarean Concert Party are deemed to be acting in concert as a result of their close personal or business relationships with the Subsidiary, Kenneth West and/or Bastiaan Driehuys.

Further information on the City Code, the Amphion Concert Party and the Polarean Concert Party is set out in paragraph 8 of Part VII of this Document.

21. TAXATION – EIS/VCT

The Company has received advance assurance from HMRC that the Ordinary Shares that were issued pursuant to the Pre-Merger Fundraise will rank as "eligible shares" for the purposes of EIS and are capable of being a "qualifying holding" for the purposes of investment by VCTs. As such, the Company expects that the Ordinary Shares to be issued pursuant to the Placing and Subscription will rank as "eligible shares" for the purposes of EIS and are capable of being a "qualifying holding" for the purposes of investment by VCTs. However, neither the Company nor the Directors nor any of the Company's advisers give any warranties or undertakings that such reliefs will continue to be available and not withdrawn at a later date.

Further information on taxation for UK taxpayers is given, and your attention is drawn to, in Part VI of this Document. These details are intended only as a general guide to the current tax position under UK taxation law and practice. If an investor is in any doubt as to his or her tax position he or she should immediately consult his or her own independent financial adviser.

22. FURTHER INFORMATION AND RISKS

You should read the whole of this Document which provides additional information on the Company and the Placing and Subscription and not rely on summaries or individual parts only. Your attention is drawn, in particular, to the Risk Factors set out in Part II of this Document and the additional information set out in Part VII of this Document.

PART II

RISK FACTORS

The investment described in this Document may not be suitable for all of the recipients of the Document. In addition to all of the other information set out in this Document, the following specific risk factors should be considered carefully by potential investors, who should also ensure that they have read this Document in its entirety before making a decision to invest in the Company. Although the Directors will seek to minimise the impact of the Risk Factors, investment in the Company should only be made by investors able to sustain a total loss of their investment. Before making a final decision, investors in any doubt are strongly advised to consult their stockbroker, bank manager, solicitor, accountant or other independent professional adviser authorised pursuant to FSMA if resident in the United Kingdom or, if not, another appropriately authorised independent financial adviser.

Prospective investors should be aware that an investment in the Company is speculative and involves a high degree of risk. In addition to the other information contained in this Document, the Directors believe that the following risk factors are the most significant for potential investors and should be considered carefully in evaluating whether to make an investment in the Company. If any of the risks described in this Document actually occur, the Company may not be able to conduct its business as currently planned and its financial condition, operating results and cash flows could be seriously harmed. In that case, the market price of the Ordinary Shares could decline and all or part of an investment in the Ordinary Shares could be lost. However, the risks listed do not necessarily comprise all those associated with an investment in the Company. Additional risks and uncertainties not presently known to the Directors, or which the Directors currently deem immaterial, may also have an adverse effect on the Company. In particular, the Company's performance may be affected by changes in market or economic conditions and in legal, regulatory and tax requirements. The risks listed below are not set out in any particular order of priority.

RISKS RELATING TO THE COMPANY'S BUSINESS

Early stage of operations

The Company's operations are at an early stage of development and there can be no guarantee that the Company will be able to, or that it will be commercially advantageous for the Company to, develop its proprietary technology. Further, the Company currently has no positive operating cash flow and its ultimate success will depend on the Directors' ability to implement the Company's strategy, generate cash flow and access capital markets. Whilst the Directors are optimistic about the Company's prospects, there is no certainty that anticipated outcomes and sustainable revenue streams will be achieved. The Company will not generate any material income until commercialisation of its proprietary technology has successfully commenced and in the meantime the Company will continue to expend its cash reserves. There can be no assurance that the Company's proposed operations will be profitable or produce a reasonable return, if any, on any investment.

Regulatory approvals and compliance

The Company will need to obtain various regulatory approvals (including FDA and EMA approvals) and otherwise comply with extensive regulations regarding safety, quality and efficacy standards in order to market its future products. These regulations, including the time required for regulatory review, vary from country to country and can be lengthy, expensive and uncertain. While efforts will be made to ensure compliance with government standards, there is no guarantee that any products will be able to achieve the necessary regulatory approvals to promote that product in any of the targeted markets and any such regulatory approval may include significant restrictions on the uses for which the Company's products can be promoted and used. In addition, the Company may be required to incur significant costs in obtaining or maintaining its regulatory approvals. Delays or failure in obtaining regulatory approval for products would be likely to have a serious adverse effect on the value of the Company and have a consequent impact on its financial performance.

Future funding requirements

The Company will need to raise additional funding or enter into a strategic partnership with industry partners to undertake work beyond that being funded by the Placing and Subscription. There is no certainty that this will be possible at all or on acceptable terms. In addition, the terms of any such financing may be dilutive to, or otherwise adversely affect, Shareholders.

Dependence on key personnel

The success of the Company, in common with other businesses of a similar size, will be highly dependent on the expertise and experience of the Directors and key employees. However, the retention of such key personnel cannot be guaranteed. Should key personnel leave the Company's business, prospects, financial condition or results of operations may be materially adversely affected.

Intellectual property and proprietary technology

No assurance can be given that any current or future patent applications will result in granted patents, that the scope of any patent protection will exclude competitors or provide competitive advantages to the Group, that any of the Group's patents will be held valid if challenged or that third parties will not claim rights in or ownership of the patents and other proprietary rights held by the Group.

When patents, trademarks or other proprietary rights are obtained, the Group may be subject to claims in relation to the infringement of these rights. Adverse judgments against the Group may give rise to significant liabilities in monetary damages, legal fees and/or an inability to manufacture, market or sell products either at all or in particular territories using existing trademarks and/or particular technology. Where the Group has given assurances to customers that its products do not infringe proprietary rights of third parties, any such infringement might also expose the Group to liabilities to those customers. Even claims without merit could deter customers and have a detrimental effect on the Group's business as well as being costly and time consuming to defend and diverting Group resources.

Further, there can be no assurance that other companies or individuals have not developed or will not develop similar products, duplicate any of the Group's products or design around any patents held by the Group. Others may hold or receive patents which contain claims having a scope that covers products developed by the Group (whether or not patents are issued to the Group).

The Group may rely on patents to protect, among other things, its products. These rights act only to prevent a competitor from copying but not from independently developing products that perform the same functions. No assurance can be given that others will not independently develop or otherwise acquire substantial equivalent techniques or otherwise gain access to the Group's unpatented proprietary technology or disclose such technology or that the Group can ultimately protect meaningful rights to such unpatented proprietary technology.

Technology and products

The Group is a manufacturer and service provider for noble gas polariser devices and ancillary instruments with a special focus on pulmonary imaging. The development and commercialisation of its proprietary technology and future products, which are in early stages of development, will require multiple series of clinical trials and there is a risk that safety and efficacy issues may arise when the products are tested. There is also a risk that there will be delays to the development of the products or that unforeseen technical problems arise as the Group's technology becomes increasingly automated. These risks are common to all new medical products and there is also a risk that the clinical trials may not be successful.

Research and development risk

The Group will be operating in the life sciences and medical device development sector and will look to exploit opportunities within that sector. The Group will therefore be involved in complex scientific research and industry experience indicates that there may be a very high incidence of delay or failure to produce results. The Group may not be able to develop new products or to identify specific market needs that can be addressed by technology solutions developed by the Group. The ability of the Group to develop new technology relies, in part, on the recruitment of appropriately qualified staff as the Group grows. The Group may be unable to find a sufficient number of appropriately highly trained individuals to satisfy its growth rate which could affect its ability to develop as planned.

Reliance on third parties

The business model for the Group anticipates that it will have limited internal resources over the next few years and that it will use third party providers wherever possible to conduct the research, development, registration, manufacture, marketing and sales of its proposed products. The commercial success of the Group's products will depend upon the performance of these third parties. The Group cannot guarantee that the third parties will be able to carry out their obligations under the relevant arrangements. Disagreements between the Group and any of these third parties could lead to delays in the Group's research and development programme and/or commercialisation plans. If any of those third parties were to terminate their relationship with the Group, the Group would be required to obtain development and/or commercialisation services from other parties or develop these functions internally. The process of entering into such similar relationships or developing these functions internally could require significant expenditure and, while the Directors believe that the Group would be able to enter into arrangements with other companies within a reasonable period of time, upon commercially reasonable terms, and in compliance with applicable regulatory requirements, no assurance can be given that it would be able to do so, and failure to do so, or failure to do so in a timely manner, could materially and adversely affect the Group's business, operating results and financial condition.

Manufacturing

There can be no assurance that the Group's proposed products will be capable of being manufactured in commercial quantities, in compliance with regulatory requirements and at an acceptable cost. The Group intends to outsource the manufacture of the raw materials and finished products required in connection with the research, development and commercial manufacture of its proposed products and, as such, will be wholly dependent upon third parties for the provision of adequate facilities and raw material supplies. ^{129}Xe, the specific isotope of Xenon which is the active ingredient in the Group's drug-device product, is available from a limited number of suppliers and there can be no assurance that adequate supplies of this material at acceptable cost can be obtained. In addition, where the Group is dependent upon third parties for manufacture, its ability to procure the manufacture of the drug-device in a manner which complies with regulatory requirements may be constrained, and its ability to develop and deliver such products on a timely and competitive basis may be adversely affected.

Product development timelines

Product development timelines are at risk of delay, particularly since it is not always possible to predict the rate of patient recruitment into clinical trials. There is a risk therefore that product development could take longer than presently expected by the Directors. If such delays occur the Company may require further working capital. The Directors shall seek to minimise the risk of delays by careful management of projects.

RISKS RELATING TO THE MARKETS IN WHICH THE COMPANY OPERATES

Economic, political, judicial, administrative, taxation or other regulatory factors

The Group may be adversely affected by changes in economic, political, judicial, administrative, taxation or other regulatory factors in the areas and countries in which the Group operates and proposes to operate.

Currency risk

The Group expects to present its financial information in US Dollars although part of its business may be conducted in other currencies. As a result, it will be subject to foreign currency exchange risks due to exchange rate movements which will affect the Group's transaction costs and the translation of its results. The Company's ordinary shares will be traded in Pounds Sterling.

General legal and regulatory issues

The Group's operations are subject to laws, regulatory restrictions and certain governmental directives, recommendations and guidelines relating to, amongst other things, occupational safety, laboratory practice, the use and handling of hazardous materials, prevention of illness and injury, environmental protection and animal and human testing. There can be no assurance that future legislation will not impose further government regulation, which may adversely affect the business or financial condition of the Group. Furthermore, as the Group already has some exposure to the UK market, there is a risk that possible

changes resulting from the Brexit negotiations could lead to additional barriers to trade and regulatory divergence which could adversely affect the Group.

Healthcare pricing environment

In common with other healthcare products companies, the ability of the Group and any of its licensees or collaborators to market its products successfully depends in part on the extent to which reimbursement for the cost of such products and related treatment will be available from government health administration authorities, private health coverage insurers and other organisations. There is uncertainty as to the reimbursement status of newly approved healthcare products and there is no assurance that adequate health administration or third party coverage will be available for the Group or its licensees or collaborators to obtain satisfactory price levels to realise an appropriate return on the Group's investment.

Adverse public opinion

Government bodies and regulatory agencies require that potential healthcare products are subject to preclinical studies, including animal testing, prior to conducting human trials. Such work can be subject to adverse public opinion and has attracted the attention of special interest groups, including those of animal rights activists. There can be no assurance that such groups will not, in the future, focus on the Group's activities or those of its licensees or collaborators, or that any such public opinion would not adversely affect the Group's operations.

The life sciences industry is frequently subject to adverse publicity on many topics, including corporate governance or accounting issues, product recalls and research and discovery methods, as well as to political controversy over the impact of novel techniques and therapies on humans, animals and the environment. Adverse publicity about the Group, its collaborators, its products, or any other part of the industry may adversely affect the Group's public image, which could harm its operations, impair its ability to gain market acceptance for its products or cause the Company's share price to decrease.

Competition

Technological competition from medical device companies, life science companies and universities is intense and can be expected to increase. Many competitors and potential competitors of the Group have substantially greater product development capabilities and financial, scientific, marketing and human resources than the Group. The future success of the Company depends, in part, on its ability to maintain a competitive position, including an ability to further progress through the necessary preclinical and clinical trials towards regulatory approval for sale and commercialisation. Other companies may succeed in commercialising products earlier than the Group or in developing products that are more effective than those which may be produced by the Group. While the Group will seek to develop its capabilities in order to remain competitive, there can be no assurance that research and development by others will not render the Group's compounds and products obsolete or uncompetitive.

RISKS RELATING TO AN INVESTMENT IN THE ORDINARY SHARES

Investment in AIM Securities

Although the Company is applying for the admission of its Enlarged Share Capital to trading on AIM, there can be no assurance that an active trading market for the Ordinary Shares will develop, or if developed, that it will be maintained. An investment in shares traded on AIM may be less liquid and is perceived to involve a higher degree of risk than an investment in a company whose shares are listed on the Official List. Prospective investors should be aware that the value of the Ordinary Shares may go down as well as up and that the market price of the Ordinary Shares may not reflect the underlying value of the Group. Investors may therefore realise less than, or lose all of, their investment.

AIM Rules for Companies and volatility of share price

The AIM Rules for Companies are less onerous than those of the Official List and an investment in a company whose shares are traded on AIM is likely to carry a higher risk than an investment in a company whose shares are quoted on the Official List. Neither the FCA nor the London Stock Exchange has examined or approved the contents of this Document.

The share price of publicly traded, early stage companies can be highly volatile and it may be more difficult for investors to realise their investment in a company whose shares are traded on AIM than to realise an investment in a company whose shares are quoted on the Official List. The price at which the Ordinary Shares will be traded and the price at which investors may realise these investments will be influenced by a large number of factors, such as variations in operating results, announcements of innovations or new services by the Company or its competitors, changes in financial estimates and recommendations by securities analysts, the share price performance of other companies that investors may deem comparable to the Company, news reports relating to trends in the Company's markets, large purchases or sales of Ordinary Shares, liquidity (or absence of liquidity) in the Ordinary Shares, currency fluctuations, legislative or regulatory changes and general economic conditions. These fluctuations may adversely affect the trading price of the Ordinary Shares, regardless of the Company's performance.

In addition, if the stock market in general experiences a loss of investor confidence, the trading price of the Ordinary Shares could decline for reasons unrelated to the Group's business, financial condition or operating results. The trading price of the Ordinary Shares might also decline in reaction to events that affect other companies in the industry, even if such events do not directly affect the Group. Each of these factors, among others, could harm the value of the Ordinary Shares.

The value of Ordinary Shares will be dependent upon the success of the operational activities undertaken by the Company and prospective investors should be aware that the value of the Ordinary Shares can go down as well as up. Furthermore, there is no guarantee that the market price of an Ordinary Share will accurately reflect its underlying value. Shareholders and prospective investors (as appropriate) should be aware of the risks of investing in AIM quoted shares and should make the decision to invest only after careful consideration and, if appropriate, consultation with an independent financial adviser.

Impact of research on share price

If securities or industry analysts do not publish research or publish unfavourable or inaccurate research about the business, the Company's share price and trading volume of the Ordinary Shares could decline. The trading market for the Ordinary Shares will depend, in part, on the research and reports that securities or industry analysts publish about the Group or its business. The Directors may be unable to sustain coverage by well-regarded securities and industry analysts. If either none or only a limited number of securities or industry analysts maintain coverage of the Company, or if these securities or industry analysts are not widely respected within the general investment community, the trading price for the Ordinary Shares could be negatively impacted. In the event that the Group obtains securities or industry analyst coverage, if one or more of the analysts who cover the Company downgrade the Ordinary Shares or publish inaccurate or unfavourable research about the Group's business, the share price would be likely to decline. If one or more of these analysts cease coverage of the Company or fail to publish reports regularly, demand for the Ordinary Shares could decrease, which might cause the share price and trading volume to decline.

EIS and VCT status

The Company has received advance assurance from HMRC that the Placing Shares and Subscription Shares to be issued pursuant to the Placing and Subscription will rank as "eligible shares" for the purposes of EIS and are capable of being a "qualifying holding" for the purposes of VCT. However, the advance assurance does not cover all aspects of EIS or VCT and does not take into account any changes to the structure of the Group since the date of the advance assurance (15 February 2017) or the precise structure of this Placing and Subscription. In addition, although it is intended that the Company will be managed so that this status continues, there is no guarantee that such status will be maintained. Changes in the Company's circumstances may result in such status being withdrawn, in which case investors who had participated in the Placing or Subscription as an EIS or VCT investment may lose the tax benefits associated with such an investment and/or any tax relief that has been claimed may be reduced or withdrawn. Further, it should be noted that the conditions for EIS and VCT relief are complex and depend not only on the qualifying status of the Company but also on the circumstances of individual EIS investors or the characteristics of the VCT concerned (as applicable).

Accordingly, EIS and VCT investors should be aware that, whilst advance assurance has been obtained from HMRC, that assurance is based on certain assumptions and the Directors cannot guarantee that the Placing Shares and/or Subscription Shares will be able to be treated as qualifying for relief under EIS or as a "qualifying holding" for the purposes of VCT (as applicable).

Future sales of Ordinary Shares could adversely affect the price of the Ordinary Shares

Certain existing shareholders have given undertakings that, save in certain circumstances, they will not until twelve months following Admission, dispose of the legal or beneficial ownership of, or any other interest in, Ordinary Shares held by them at Admission. There can be no assurance that such parties will not effect transactions upon the expiry of the lock-in or any earlier waiver of the provisions of their lock-in. The sale of a significant number of Ordinary Shares in the public market, or the perception that such sales may occur, could materially adversely affect the market price of the Ordinary Shares.

Shareholders not subject to lock-in arrangements and, following the expiry of twelve months following Admission (or earlier in the event of a waiver of the provisions of the lock-in), Shareholders who are otherwise subject to lock-in arrangements, may sell their Ordinary Shares in the public or private market and the Company may undertake a public or private offering of Ordinary Shares. The Company cannot predict what effect, if any, future sales of Ordinary Shares will have on the market price of the Ordinary Shares. If the Company's existing shareholders were to sell, or the Company was to issue a substantial number of Ordinary Shares in the public market, the market price of the Ordinary Shares could be materially adversely affected. Sales by the Company's existing Shareholders could also make it more difficult for the Company to sell equity securities in the future at a time and price that it deems appropriate.

Dilution of Shareholders' interests as a result of additional equity fundraising

The Company may need to raise additional funds in the future to finance, amongst other things, working capital, expansion of the Company, new developments relating to existing operations or new acquisitions. If additional funds are raised through the issuance of new equity or equity-linked securities of the Company other than on a *pro-rata* basis to existing Shareholders, the percentage ownership of the existing Shareholders may be reduced. Shareholders may also experience subsequent dilution and/or such securities may have preferred rights, options and pre-emption rights senior to the Ordinary Shares. The Company may also issue shares as consideration shares on acquisitions or investments which would also dilute Shareholders' respective shareholdings.

Future payment of dividends

There can be no assurance as to the level of future dividends (if any). The declaration, payment and amount of any future dividends of the Company are subject to the discretion of the Shareholders or, in the case of interim dividends to the discretion of the Directors, and will depend upon, amongst other things, the Group's earnings, financial position, cash requirements, availability of profits, as well as provisions for relevant laws or generally accepted accounting principles from time to time.

Although the Board intends to pay dividends to Shareholders in the future, there can be no assurance that the Company will declare and pay, or have the ability to declare and pay, any dividends in the future.

Valuation of shares

The Placing Price and the Subscription Price have been determined by the Company and may not relate to the Group's net asset value, net worth or any established criteria or value. There can be no guarantee that the Ordinary Shares will be able to achieve higher valuations or, if they do so, that such higher valuations can be maintained.

Market perception

Market perception of the Company and/or the Group may change, potentially affecting the value of investors' holdings and the ability of the Company to raise further funds by the issue of further Ordinary Shares or otherwise.

Suitability

A prospective investor should consider carefully whether an investment in the Company is suitable in the light of his or her personal circumstances and the financial resources available to him or her. An investment in the Company involves a high degree of risk and may not be suitable for all recipients of this Document. Prospective investors are advised to consult a person authorised by the FCA (or, if outside the UK, another appropriate regulatory body) before making their investment decision.

Disapplication of pre-emption rights

The Directors have been granted authority to allot up to 11,011,004 new Ordinary Shares, including up to 11,011,004 new Ordinary Shares for cash, other than on a pre-emptive basis. Accordingly, potential additional investors should consider the risk that, following Admission, Shareholders may be diluted if new Ordinary Shares are issued.

Forward looking statements

This Document contains forward-looking statements that involve risks and uncertainties. The Group's results could differ materially from those anticipated in the forward-looking statements as a result of many factors, including the risks faced by the Company and the Group, which are described above and elsewhere in the document. Additional risks and uncertainties not currently known to the Board may also have an adverse effect on the Company's business.

PART III

INDEPENDENT EXPERT'S REPORT

Set out below is the text of a report on Polarean Imaging Plc by PharmaVentures Limited

PharmaVentures Ltd.
Triumph House
Parkway Court
John Smith Drive
Oxford Business Park
Oxford
OX4 2JY

19 December 2017

The Directors
Polarean Imaging Plc
2500 Meridian Parkway #175
Durham, NC 27713
USA

The Directors
Northland Capital Partners Limited
40 Gracechurch Street
2nd Floor
London
EC3V 0BT

Dear Sirs,

Polarean Imaging Plc. ("Polarean" or the "Company")

PharmaVentures Limited (PharmaVentures) is an independent global healthcare business consultancy that specialises in assisting biomedical companies in forming alliances, conducting M&A and performing technical and commercial evaluations of pharmaceutical and biotechnology products, medical technologies, product portfolios and companies. Over the course of the past 25 years, PharmaVentures has built up considerable expertise in the analysis of healthcare markets, biomedical companies and their technologies.

PharmaVentures has been instructed by the Directors of Polarean and Northland Capital Partners Limited ("Northland") to prepare an independent Expert Report ("Report") on the Company for inclusion in its Admission Document covering a technical and commercial assessment of and an overview of the markets targeted by Polarean including competitive products in the market and in development. Our Report is being prepared pursuant to Rule AR 4 of Schedule 3 of the AIM Rules for Nominated Advisers issued by the London Stock Exchange in order to provide technical comfort to the Directors of Polarean Imaging Public Limited Company and Northland.

In preparing this report, PharmaVentures interviewed members of the Polarean management team and reviewed relevant Company documentation and scientific literature. These sources were supplemented by PharmaVentures' extensive internal and external resources, experience and understanding of the global biomedical industry. It should be noted that PharmaVentures does not comment on the validity or enforceability of any patents, granted or applied for by the Company.

This report has been prepared with due diligence based on the information provided by Polarean or taken from public domain sources deemed to be reliable by PharmaVentures. While every effort has been made to ensure the accuracy and completeness of the information and data presented, PharmaVentures cannot accept liability for errors or omissions. In particular, the industry area under examination is fast moving and any change in circumstances may render some or all of the information or conclusions incomplete, obsolete or invalid.

PharmaVentures is a healthcare industry consultancy and is not an investment advisor. This report is specifically limited to the matters set out above and is not to be taken as giving any advice on the merits of an investment in Polarean.

1. Summary

Polarean Imaging Ltd. develops and manufactures technology for magnetic resonance imaging ("MRI") machines that utilises hyperpolarised 129xenon ("HPX") gas to enable much improved pulmonary imaging. The technology is an 'add-on' that is compatible with all existing MRI machines, which total approximately 36,000 globally (Rinck, 2017).

Hyperpolarised 129xenon gas imaging is a well-characterised area of research that has been advanced by Polarean over many years. Working with renowned scientists in the subject, the technology has been refined to produce detailed images of ventilation and gas exchange, even in the narrowest airways of the lungs. These images allow pulmonologists and radiologists to visualise the structure and function of the lungs much more clearly than is currently possible with other lung imaging technologies, many of which involve radioactive agents. This will allow them to make more informed diagnoses and assessments of treatment response for a wide range of pulmonary conditions.

Polarean was formed from the 2017 merger of Polarean Inc. and m2m Acquisitions Inc., a company that specialised in the design and development of custom radiofrequency ("RF") coils for MRI research. The rationale for combining these companies was to facilitate adoption and accelerate growth by combining complementary technologies. The merged entity, Polarean, now offers equipment sales, RF coils for xenon detection, consumable xenon sales, service contract sales and follow-on upgrade sales. Specifically, a customer receives a polariser, xenon gas, a high-performance RF coil and a quality assurance (QA) station that measures the percentage of gas polarised.

Assuming Polarean's planned pivotal Phase III clinical trials for its drug-device combination product are successful and demonstrate non-inferiority over existing methodologies for lung function imaging, FDA approval is likely in early 2020. Acceptance and adoption into routine clinical practice and confirmation of the revenue streams (either direct sale or through reimbursement) will need to be established after the clinical trial. Success in these areas should give Polarean access to markets which have large global revenue potential.

2. Current tools for measuring lung function[1]

Several methods currently exist for the diagnosis and monitoring of pulmonary disease. These range from simple, low-cost techniques, such as spirometry, to high-tech, high-cost techniques, such as x-ray and computed tomography (CT). While these tests are used to aid diagnosis, assess severity, monitor treatment and evaluate prognosis, utility is limited by imprecision, technological inadequacies and/or the use of radiation. Furthermore, current techniques cannot quantitatively assess pulmonary ventilation and gas exchange and are limited to visualising only the largest airways. Hyperpolarised gases, such as helium and xenon, on the other hand, can be visualised by MRI in all 23 branches of the human lung and thus are able to generate images of defects in the smallest airways which are the initial site of many pulmonary diseases. Hyperpolarised gas MRI, therefore, overcomes the limitations of current methods and is able to visualise, quantify, and monitor both ventilation and gas exchange without exposing patients to radiation.

2.1 *Spirometry*

Spirometry is the most commonly used lung function test since it is easy to use, low cost (reimbursement rate of approximately US$35) and distinguishes between restrictive (e.g. pulmonary fibrosis) and obstructive (e.g. COPD, asthma) lung diseases, narrowing down the diagnosis. It measures vital capacity and forced expiratory volume in one second (FEV1), which is the total amount of air exhaled from the lungs and how fast it can be exhaled (British Lung Foundation, 2017). There are several types of spirometers that vary in complexity, with most generating and displaying graphs called spirograms that display either volume-time curves or flow-volume loops. If a person has already been diagnosed with a lung disease, spirometry may be carried out to check the severity of the condition or the response to treatment. Spirometry has several limitations:

1 Reimbursement rates used in this section were supplied by Polarean.

- The test relies on the patient cooperating fully, which a lack of can lead to imprecision, and it must be repeated at least three times to ensure reproducibility.
- The output of the test cannot differentiate between specific pulmonary diseases and can only be used as an aid to indicate the overall problem with airflow and lung capacity.

2.2 *Scintigraphy*

Scintigraphy is a non-invasive 2D nuclear diagnostic imaging technique that, when used with medical isotopes, can be used to evaluate the circulation of air and blood within a patients' lungs. It is useful for ventilation imaging but cannot visualise gas exchange. Scintigraphy is primarily used to aid in the diagnosis of pulmonary embolism but can also be used in preoperative evaluations and in the assessment of right-to-left shunts and lung transplants. There are three types of scintigraphy (Parker *et al*., 2012):

1. Aerosol ventilation scintigraphy involves the inhalation of radioactive aerosol to determine the bronchopulmonary distribution;
2. Gas ventilation scintigraphy uses radioactive gas to record pulmonary distribution during breathing;
3. Pulmonary perfusion scintigraphy is a diagnostic imaging test that records the distribution of pulmonary arterial blood flow.

Scintigraphy has several disadvantages, including the fact that it exposes the patient to potentially harmful radiation (for example, ^{133}Xe, a radioactive isotope of xenon, is a commonly used contrast agent for scintigraphy) and generates low-resolution images. At a reimbursement rate of approximately US$190 per procedure, it is a relatively inexpensive tool.

Cyclomedica Australia Pty Limited is developing an improved aerosol ventilation scintigraphy technology, Technegas, which is in phase 3 trials. It is an ultra-fine dispersion of technetium-labelled carbon that enables improved ventilation imaging, primarily for diagnosing pulmonary embolism, but may also be used in a wider range of pulmonary images, such as COPD.

2.3 *Optical Coherence Tomography (OCT)*

OCT is a high-resolution imaging modality that uses light to capture micrometer-resolution, 3D images from within optical scattering media, such as biological tissues. A bronchoscope is used to introduce a fibreoptic probe with a light source into the airways and an image is produced by reconstructing the light patterns reflected by the tissue of interest. Bronchoscopy is limited to reaching the sixth branch (of 23) of the lung and thus, is only able to image disease in the large airways. The main strength of OCT is in examining airway morphology, which makes it particularly useful for imaging airway diseases such as asthma and COPD. In smokers, OCT provides a high sensitivity measure and simultaneously provides data on airway wall morphology, sub-epithelial remodelling and collagen deposition (Washko, 2012). In pulmonary imaging, the narrowness of the tracheobronchial tree poses an issue for OCT. A flexible bronchoscopy (an invasive procedure) is required and the OCT probe needs to be small enough to pass through the working channel of a standard bronchoscope. Also, the imaging technology needs to be able to overcome the motion artefacts that will invariably be present secondary to cardiac pulsation and respiratory movements (Hou *et al*. 2011). In addition, OCT is an invasive technique and patients are at risk of potential complications such as dissection or perforation stemming from use of a wire and catheter. OCT is primarily used for research and only appears to be reimbursed for coronary imaging.

2.4 *X-ray and computed tomography (CT)*

X-ray and CT are well-established and low-cost imaging tools, with reimbursement rates ranging from US$60-US$290 per procedure. X-ray is a common first step in the radiological evaluation of patients with suspected pulmonary disease, which can be followed by a CT scan to create a 3D image to evaluate the structure of the lung. The images created by pulmonary x-rays can show large obstructions but cannot visualise past the 6th branch and are low resolution. CT scans can be used to create 3D images of the lungs and evaluate abnormalities in the lung structure, but they cannot identify abnormalities in lung function, such as ventilation or gas exchange (although ventilation to approximately the 6th branch can be estimated based on computed volume of the large airways). This makes CT best suited to assessing lung tissue defects, such as lung cancer. An additional limitation to both x-ray and CT is that they use ionising radiation, thus exposing patients to potentially harmful radiation.

Consequently, these techniques are of limited use in certain types of patients, such as children and pregnant women, and cannot be used over long periods due to the risks associated with cumulative radiation build up.

Low-dose CT, in which the dose of radiation is reduced by a half to a fifth of that typically used for diagnostic CT procedures, has been introduced to address concerns over exposure to radiation and is now commonly used in the diagnosis of lung cancer. However, reduced dosages can negatively impact the quality of images produced, limiting the use of this imaging technique (US FDA, 2009). If CT scanning uses iodine-based intravenous contrast agents to outline arterial blood vessels, there is a risk of anaphylaxis and renal impairment. Asthma patients have an increased risk of atopy and will be concerned about anaphylaxis.

2.5 *Positron Electron Tomography (PET) and Single-Photon Emission Computed Tomography (SPECT)*

PET is a nuclear medicine tool that is used to study metabolic processes within a patient. It uses positron-emitting radiotracers specifically designed to bind to molecules associated with the disease of interest. These are introduced into the body and emit gamma rays that are detected by the PET system to produce 3D images based on the regional concentration of the rays. It enables the diagnosis and staging of disease, as well as treatment monitoring, and is commonly used in cancer and neurological disease. Although not widely used for lung imaging, studies have demonstrated that PET can be applied to imaging lung function in conditions such as COPD (Vidal Melo *et al*., 2010; Alford *et al*., 2010). The use of radioactive tracers in this technique present the same limitations as x-ray and CT in that they cannot be used in certain patients and the number of times a patient can undergo the procedure is limited. At US$900-US$1,400 per procedure, PET is an expensive imaging option.

SPECT is also a nuclear medicine tool that utilises radiotracers and gamma rays. It provides 3D cross-sectional images. However, in addition to using radiation, SPECT produces low-resolution images and suffers from long scan times that take many respiratory cycles and mean that small changes cannot be detected. SPECT is more commonly used than PET, particularly for perfusion imaging. Ventilation imaging is not possible with gaseous agents such as ^{133}Xe because it does not persist in the lungs for long enough. Technegas is being developed to overcome this limitation.

3. Polarean's approach

3.1 *Scientific rationale*

MRI has been routinely used as a medical imaging technique for decades. It offers a considerable advantage over alternative techniques, such as x-ray and CT, since it produces high resolution images without the use of ionising radiation. This makes it invaluable in patients where radiation is contra-indicated, such as children, pregnant women and conditions that require monitoring over prolonged periods where there is a risk of cumulative radiation (Biederer *et al*., 2012).

MRI detects the nuclear magnetic resonance signal from the protons of water molecules in tissues. This signal is detected using a magnetic field and radio waves to generate images of the structure and physiology of the body. It is notoriously difficult to execute in the lungs due to the low proton density, multiple air-tissue interfaces and the breathing motion of the lungs (Hochhegger *et al*., 2012). Furthermore, the data acquisition process is inherently slow, meaning that scans take a long time.

A number of strategies have been employed to overcome these problems, including breath-hold imaging, respiratory and cardiac gating procedures, use of short repetition and echo times, administration of intravenous contrast agents to increase the relaxivity of existing spins, and enrichment of spin density by hyperpolarised noble gas (Kauczor and Kreitner, 2000). Recent developments in MRI data acquisition, known as compressed sensing, have reduced scan times without compromising data quality. The hyperpolarisation of gaseous contrast agents has been found to overcome the limitations of proton MRI by increasing polarisation, thereby amplifying the signal that can be detected by the MRI machine (Mugler III and Altes, 2013).

History of hyperpolarised gas MRI

Hyperpolarised gas MRI was first used in studies in 1994 when the isotope ^{129}Xenon (^{129}Xe) was used for *ex-vivo* imaging (Albert *et al*., 1994). Of the nine stable isotopes of xenon, ^{129}Xe has the advantage of having a nuclear spin equal to that of the protons in water and fat molecules, thus making it an ideal choice (Mugler and Altes, 2013). However, it was found that imaging the lungs using ^{129}Xe was of limited utility due to the relatively low polarisation of ^{129}Xe which caused a low signal intensity. In light of this limitation, interest shifted to using the ^{3}He isotope of helium, an alternative stable inert gas isotope which has higher polarisation (~30 per cent.) and a stronger signal (Roos *et al*., 2015). MRI imaging using hyperpolarised ^{3}He provided a clearer image with better signal to noise ratio (SNR), causing a shift in research to focus on ^{3}He in human imaging.

The supply of ^{3}He is limited by the fact that it is not a naturally-occurring isotope, rather, it comes from the decay of tritium which is exclusively derived from nuclear warheads. Additionally, a change in the regulations more clearly designating medical gases as drugs, along with increased use of ^{3}He by US Homeland Security for detecting smuggled plutonium, generated huge demand leading to a significant price increase and strict rationing. The higher cost, coupled with low availability, caused clinical research using ^{3}He MRI to falter and refocus on optimising hyperpolarised ^{129}Xe as a contrast agent for MRI lung imaging. While ^{3}He initially provided higher resolution images, subsequent advances in MRI using polarised^{129}Xe, which makes up 26 per cent. of naturally occurring xenon, mean that image quality can rival that achieved with ^{3}He. ^{129}Xe also has the advantage of enabling measurement of gas exchange, which ^{3}He cannot.

Mechanism of action

When xenon gas is unpolarised, approximately half the nuclei spin in the same direction as the MRI magnetic field, and the other half spin against it. MRI detects the difference in the spins aligned in each direction, thus in an unpolarised state, the signal is zero. Hyperpolarisation causes the xenon nuclei to align and spin in parallel to the magnetic field of the MRI machine. Polarean has now achieved over 40 per cent. polarisation, a considerable improvement from historic rates of 1 per cent.-2 per cent. and rates of 30 per cent. with helium, thereby creating a strong signal (Roos *et al*., 2015).

Xenon is hyperpolarised by placing it into a beam of polarised laser light in the presence of small amounts of an alkali metal. This causes the nuclear spin of each molecule to align in the direction of the magnetic field, polarising the molecules. The result is ^{129}Xe whose nuclear magnetic spin is highly aligned, but not chemically or biologically different to unpolarised xenon, a harmless inert gas. By hyperpolarising the nucleus, Polarean is able to create an MRI signal that is 100,000 times stronger than conventional MRI. This hyperpolarised state persists for up to two hours, allowing sufficient time to administer it to patients, and can be extended by placing the gas in the QA station where it is shielded from magnetic relaxation. This unique feature adds flexibility and means that patient processing and gas production can be carried out independently.

250mL of HPX is then combined with 750mL of nitrogen (to make a 'full breath') and administered via a small disposable gas bag (made of materials that are compatible with the hyperpolarised xenon) with a disposable mouthpiece. Patients inhale the gas and hold their breath for 10-seconds while undergoing an MRI scan.

The strength of the signal from inhaled hyperpolarised ^{129}Xe produces images showing the distribution of the gas throughout the lungs. A low signal or no signal indicates that the patient has not been able to inhale the gas into that part of the lung and corresponds with a ventilation defect, as occurs in conditions such as asthma, COPD and cystic fibrosis.

Moreover, in addition to its detectability in the airways of the lung, ^{129}Xe has the advantage of being soluble in pulmonary tissues and diffusing into the functional parts of the lung where it can also be detected by MRI. Once it enters the lungs, ^{129}Xe diffuses into the alveolar capillary membrane and then into the capillary blood stream where it binds with red blood cells. At each of these levels, the airway, alveolar membrane and blood stream, the ^{129}Xe resonance frequency differs, allowing MRI to distinguish these structures and identify impaired gas exchange. This can be used for visualising conditions such as idiopathic pulmonary fibrosis where diffusion of gases across the alveolar membrane is impaired due to interstitial thickening (Wang *et al*., 2017; Roos *et al*., 2015).

The images resulting from HPX MRI show the state of ventilation and gas exchange in the patient and allow physicians to diagnose pulmonary conditions and monitor treatment response with much more certainty.

Technology applications

All pulmonary diseases involve a combination of ventilation and/or gas exchange impairment that can be characterised by disease-specific patterns. As such, there is a need for effective methods to quantify pulmonary ventilation and gas exchange in order to aid in the early diagnosis and treatment of lung disease, and HPX MRI can be used to address both these issues. Since early lung disease usually begins in the smallest airways, visualising the function of the lungs regionally, as enabled by HPX MRI would allow precise detection and early diagnosis of disease. HPX MRI allows the visualisation, quantification and monitoring of the smallest airways and alveolar spaces without the need for radiation. In addition to visualising the airways, HPX MRI also enables monitoring of gas exchange through the barrier tissues into the red blood cells. This allows gas exchange to be measured and impairments to be detected accurately as an aid in the diagnosis of various pulmonary diseases. Therefore, HPX MRI provides a safe, non-invasive, fast and effective alternative for evaluating pulmonary disease patients.

3.2 ***COPD***

Chronic obstructive pulmonary disease (COPD) is a complex progressive disease with many underlying processes. This results in a range of problems in the lungs, including obstruction in the airways, destruction of the alveolar units and inflammation and thickening of barrier tissues. The disease affects more than 200 million people worldwide, with 65 million having a moderate to severe form of the disease (World Health Organisation, 2007). The direct cost of COPD in the European Union is estimated at 6 per cent. of healthcare spending, €38.6 billion annually (European Respiratory Society, 2013).

In addition to identifying risk factors, a clinical diagnosis of COPD is currently established using spirometry to assess the severity of airflow obstruction. This does not allow clinicians to fully characterise the effects of COPD on the small airways or quantify regional disease burden, which leads to uncertainty in patient treatment and monitoring. A review of published rehospitalisation rates found that 22.6 per cent. of patients released from hospital after treatment for COPD were readmitted within 30 days, highlighting the need for improved methods to assess the risk of exacerbation and monitor the status of lung function, disease progression and therapeutic effect (Jencks *et al*., 2009). HPX permits 3D images to be created to monitor gas exchange by quantifying the degree of airflow impairment (image of airspace), the total emphysema burden (image of the gas exchange) and the overall efficiency of gas transfer into the blood (image of the red blood cells) (see Figure 1).

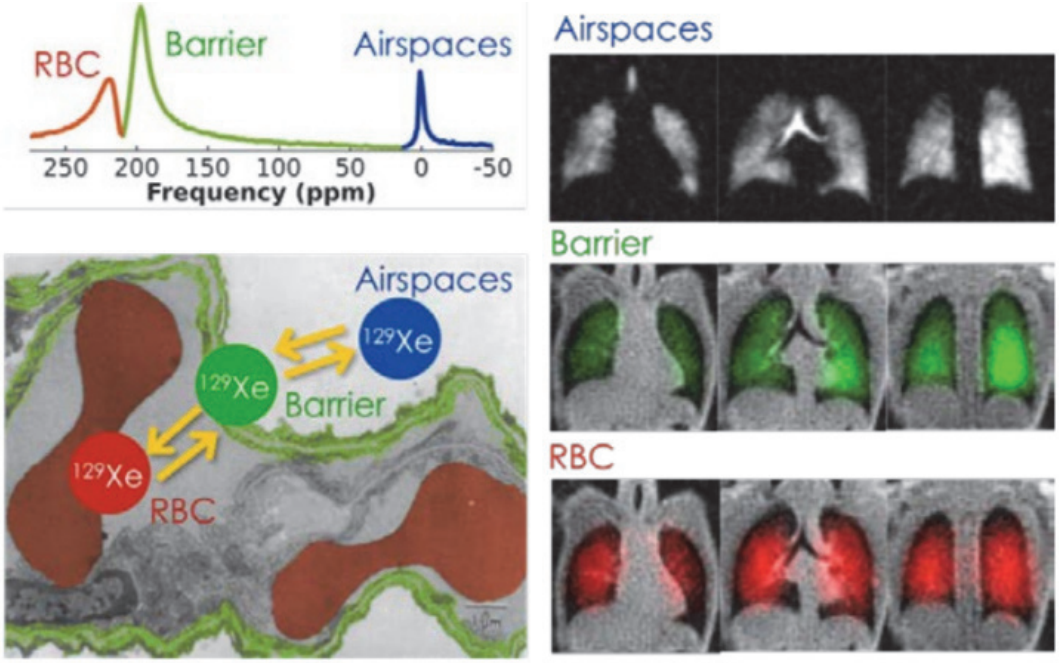


Figure 1. HPX MRI showing gas exchange in the lungs

3.3 *Cystic Fibrosis*

Cystic Fibrosis (CF) is a genetic disease, typically diagnosed by the age of one, that affects approximately 30,000 people in the US and 70,000 individuals worldwide (Cystic Fibrosis Foundation, USA). Patients suffer from overproduction of thick, sticky mucus in the lungs which causes breathing difficulties and recurrent lung infections. There is currently no cure for CF and treatment is aimed at managing symptoms to extend life expectancy.

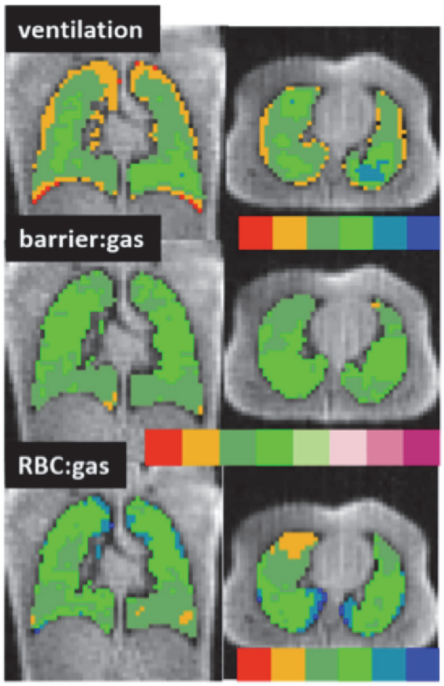
These patients commonly experience pulmonary exacerbations related to microbial infection, with each exacerbation leading to a decrease in lung function. Early detection of infection to enable early administration of antibiotics is the best approach to minimise damage to the lungs. Antibiotic resistance and efficacy are considerable issues with these patients, and intravenous antibiotics can be prescribed which can raise toxicity concerns.

CT may be used to assess and monitor exacerbations, however the use of radiation in this technique limits its long-term use, particularly in the mainly paediatric CF population. HPX MRI offers a radiation-free alternative for the long-term assessment of lung function and monitoring of antibiotic treatment response. This would allow ineffective treatments to be discontinued and replaced earlier, reducing the duration of exacerbations, and therefore minimising lung damage, as well as the overall treatment costs.

3.4 *Pulmonary Vascular Disease*

Pulmonary vascular disease (PVD) is another set of conditions which are difficult to definitively diagnose and monitor. The conditions manifest as increased pressure in the pulmonary vasculature as a result of various blockages or conditions such as left heart failure. The current technique for a definitive diagnosis of PVD involves an invasive right-heart catheterisation to measure the pressure in the blood vessels of interest. This comes with significant cost and complications can occur. HPX MRI allows non-invasive and comprehensive characterisation of the overall efficiency of gas transfer to the blood. It can be used to detect impaired gas transfer and infer high vascular pressure without subjecting patients to more invasive diagnostic techniques. Increasingly, PVD patients present with other lung diseases which make monitoring and managing PVD difficult. HPX MRI can play a part in monitoring PVD by creating non-invasive 3D maps of gas exchange impairment (see Figure 2 where patients with PVD show impaired gas exchange to the red blood cells). With better diagnostic aids for PVD, patients will gain access to numerous therapies to manage and treat the disease.

Healthy Control



Pulmonary Arterial Hypertension

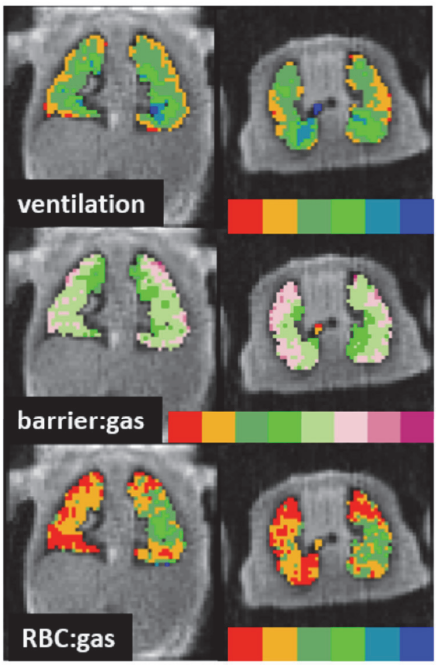


Figure 2. HPX MRI in a healthy control subject, versus one with pulmonary arterial hypertension (PAH). Notably, in the PAH patient, ^{129}Xe transfer to the red blood cells is severely impaired in numerous regions of the lung, as a result of reduced capillary blood volume in regions affected by arteriopathy.

3.5 *Idiopathic Pulmonary Fibrosis*

Idiopathic Pulmonary Fibrosis (IPF) is characterised by thickening of the barrier tissues that separate the airspace and pulmonary vasculature. IPF is difficult to diagnose with current methods and involves a combination of pulmonary function tests, CT scans and invasive biopsies. HPX MRI is able to identify a distinctive pattern in IPF patients in which ventilation is normal and gases have difficulty moving through the thickened membrane, causing a low uptake of oxygen to the red blood cells. This distinctive pattern allows for easier diagnosis and the opportunity to treat IPF patients earlier with the first drugs having now emerged for the indication. These treatments (perfenidone and nintedanib) come with significant cost (US$100k per year), significant side effects and unclear efficacy in many patients. Using HPX MRI also allows the monitoring of patient response to these treatments and the early discontinuation in non-responders (see Figure 3).

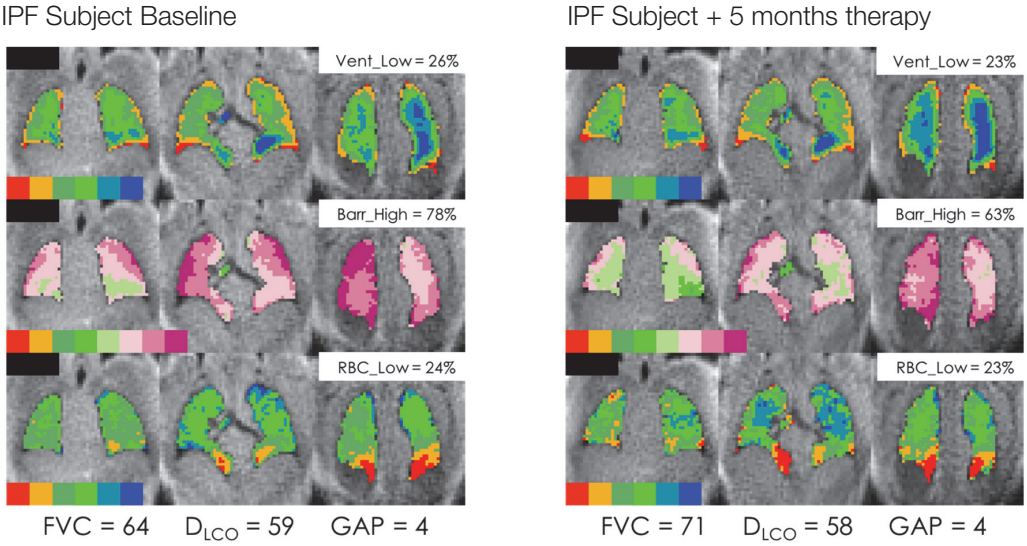


Figure 3. HPX MRI showing the change in gas exchange following therapy in an IPF patient. The amount of lung showing high barrier uptake has reduced from 78 per cent. of the lung to 63 per cent. of the lung. Thus, interstitial thickening appears to have diminished. Importantly, the amount of lung exhibiting low RBC transfer has remained stable 24 per cent. to 23 per cent. suggesting functional impairment has not progressed.

3.6 *Asthma*

According to the 2015 Global Burden of Disease Study, asthma is prevalent in approximately 358 million people worldwide (GBD 2015 Disease and Injury Incidence and Prevalence, Collaborators, 2016). Around 90 per cent. of asthmatics are managed with maintenance medications, however the 10 per cent. with severe asthma account for high healthcare burdens. Asthma is a complex disease with many underlying processes that make it difficult to monitor and measure lung function. In addition to the complexities of asthma itself, many asthmatic patients also exhibit symptoms of COPD, a phenomenon called asthma COPD overlap syndrome.

Monoclonal antibody treatments have emerged as an option for severe asthma patients, although they are effective in only a small percentage of patients. These treatments are expensive (US$25-US$30k per year), difficult to administer and it is unclear which patients will respond. HPX MRI will allow patients to be closely monitored to identify those that respond and assess how well they are responding. Non-responders can then be quickly switched to another therapy, potentially saving thousands in wasted drug costs.

4. Regulations and market access

4.1 *Regulations*

Polarean will initially focus on seeking regulatory approval in the United States where the technology will be subject to regulation by the United States Food and Drug Administration (FDA). The technology will be regulated as a drug-device combination, as the medical gas is considered a drug while the polariser and quality assurance instrument are considered medical devices. Polarean has conducted

a number of face-to-face meetings with the FDA to discuss the clinical trial design, the most recent of which was held in March 2016. From the meetings, the FDA have agreed that Polarean's drug-device combination need only demonstrate non-inferiority to ^{133}Xenon ventilation scintigraphy, a nuclear medicine technology with 40 years of history. This is an advantageous outcome for Polarean as this pathway requires comparatively less clinical evidence compared to other scenarios the FDA could have suggested.

The FDA have inferred that they would be willing to accept a broad claim for use of the technology. Rather than limiting its use to specific diseases, the FDA signalled that approval would be granted for the evaluation of pulmonary function, assuming a successful outcome of the trials. This makes the addressable market for the technology very large, encompassing most pulmonary diseases. For instance, in COPD alone, there are 12.7 million patients in the US.

The potential market for the Company's product is expected to be large in Europe as well as in some other major non-US markets. Polarean will need to undertake separate clinical trials to obtain regulatory approval in Europe or other non-US markets, and the regulations in some of these jurisdictions may be more complex than those in the US.

Data

4.1.1 Research data

Hyperpolarised gas MRI is a well-researched topic with over 400 journal articles having been published on its use to date. Since large academic medical centres have been Polarean's primary customers, a significant body of research has been generated that relates specifically to the use of Polarean's hyperpolarised ^{129}Xe MRI technology in human studies. This body of peer-reviewed scientific literature is leading to greater credibility and awareness of the technology in both academic and clinical settings. In 2016, the number of citations of papers containing the words hyperpolarized MRI exceeded 3,000.

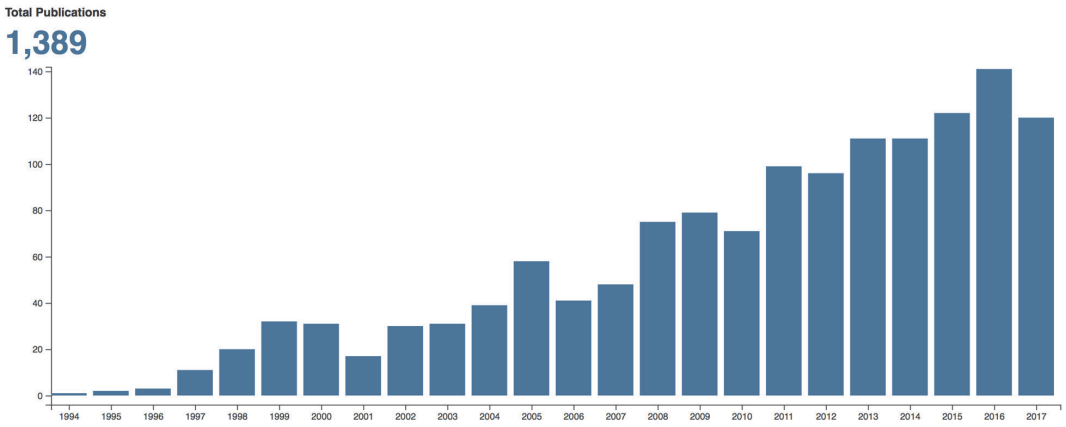


Figure 4. Number of papers containing the words hyperpolarised and MRI as indexed by Web of Science. Since 2013, over 100 papers per year have been published in the field.

4.1.2 Safety

The FDA has confirmed that the existing literature on xenon pharmacokinetics, pharmacodynamics and safety will be accepted to fulfil a good portion of the data requirements for a regulatory submission. Polarean will submit a dossier based on existing xenon studies, which are summarised here.

Patz *et al.* (2012) reintroduced the use of ^{129}Xe MRI into humans in their analysis of its viability as a functional lung imaging modality. This followed an extensive history of safely using xenon as a contrast agent for CT imaging studies of the lung. Driehuys *et al.* (2012), (Bastiaan Driehuys is currently the Chief Technology Officer at Polarean), provided further evidence of this in a safety and tolerability study of 44 subjects of COPD patients and healthy volunteers. Subjects inhaled multiple, undiluted hyperpolarised ^{129}Xe in 1-litre volumes and no major adverse effects were reported. Symptoms included mild dizziness, euphoria and par-/hypoesthesia, which lasted 1-2 minutes, and no changes in laboratory tests or ECG were noted. As polarisation improves with

more efficient technology, image quality is expected to improve with lower volumes of xenon required. This is likely to further diminish any adverse symptoms. A second safety study, conducted by Shukla *et al.* (2012), looked at lower inhaled volumes of 0.5L, and found that participants experienced few or no symptoms.

4.1.3 Clinical Trials

Two proposed phase III clinical trial protocols have been reviewed and agreed with the FDA. These will be conducted at Duke University Medical Center, USA and the University of Virginia, USA. In total, the trials will recruit a combined 80 subjects and compare Polarean's ^{129}Xe MRI contrast agent with an older nuclear medicine agent, ^{133}Xe to characterise lung ventilation. One trial will be conducted in 32 patients being pre-operatively evaluated for lung lobe resection and the other in 48 patients being pre-operatively evaluated for lung transplant. In both trials, each lung will be divided into three regions and the lung volume of each area measured and compared.

The trials are estimated to take 12 months, assuming that patient recruitment progresses as expected, which will be followed by approximately four months of analysis. It is expected that Polarean's technology will meet the statistical requirements for approval, and approval by the FDA is expected within twelve months of submission. It is estimated that the technology will be launched in early 2020. Meeting the agreed endpoints for the trials will allow submission for marketing authorisation with the intended use being for the evaluation of pulmonary function.

4.2 ***Market access***

4.2.1 *Reimbursement*

The reimbursement code for thoracic MRI with contrast, CPT 71551, is expected to form the basis of reimbursement discussions with US payors. It is valid for most lung disease ICD codes and is reimbursed by Medicare at approximately US$475, with small regional variations. This reimbursement is intended to cover the cost of the MRI procedure and the contrast agent.

Although Polarean do not anticipate receiving any portion of the revenue from procedure reimbursement, a higher reimbursement rate driven by the improved diagnostic information is likely to present a more attractive case for procurement by radiology departments. Thus, Polarean intends to discuss with payors whether a higher reimbursement rate may be possible for certain uses of the technology that offer potentially significant savings technology to the health system. This is already the case for current MRI scanning, as each MRI machine has many different uses, each of which is reimbursed at a different rate. Reimbursement consultants are being actively interviewed and will be engaged imminently to formulate a strategy for obtaining higher reimbursement rates.

4.2.2 *Channels to market*

Prior to obtaining FDA approval, Polarean is focusing on large academic medical centres with active clinical practices and patient volumes. In order to service this market, Polarean intends to build a direct sales force that will focus and build awareness with key opinion leaders at these medical institutions. Current customers include Duke University, the University of Virginia, the University of Nottingham and the University of Oxford. An added benefit of this strategy is that studies using the Company's technology may be published in top scientific journals and provide increased awareness and credibility to Polarean's technology. Validation and adoption via Key Opinion Leaders (KOLs) in the academic community is a tried and tested route to market for MRI applications. Polarean have already demonstrated success in this research market place and this should serve to seed the more valuable commercial clinical sectors.

Once the technology has been granted FDA approval, Polarean's main target customers will be radiology departments as procurers of the technology, and pulmonologists as prescribers. The initial sales targets will be the top 100 academic pulmonology and radiology departments in the US, who are opinion leaders in the use of new diagnostic technologies and their application in a clinical setting. Polarean intends to build a direct sales force for the US and European markets so as to retain control of key accounts, Polarean do not carry out any commercial manufacturing onsite and is not reliant on any critical suppliers, the selling process and market pricing. Because

of the specialty nature of Polarean's products in the targeted and moderately sized pulmonary specialist market, which is concentrated in approximately 1,000 academic medical centres, the Company believes that a small specialty sales force can be deployed effectively at reasonable cost. Polarean may also choose to partner with companies that offer complementary products. Although this strategy will incur greater initial cost to the business, it may also produce greater returns in the long run, compared with third party licensing. It is anticipated that Polarean will sell its xenon gas at a price of US$250 per procedure.

Polarean believes that their products will benefit a number of clinical applications. While its MRI technology provides more specific information than currently available lung diagnostics (especially spirometry), Polarean will focus its use on specific clinical conditions where the high accuracy of HPX MRI and greater cost is justified. Polarean does not believe that HPX MRI will replace low-cost spirometry as a general screening tool but believe it should add value in more demanding clinical applications where HPX MRI addresses unmet diagnostic needs. These applications could include, but are not limited to, the following:

- the monitoring of COPD therapy, especially for the most severe cases;
- the management of cystic fibrosis exacerbations;
- a more efficient diagnosis of dyspnoea and the chronic cough;
- providing guidance for radiation therapy planning of lung cancer treatment;
- providing guidance for interventional pulmonology procedures including ablation and the placement of valves and stents;
- surgical procedure planning for lung transplant and volume reduction surgery;
- diagnosis of IPF and monitoring of IPF therapy; and
- diagnosis of PAH and monitoring of therapy.

Polarean will also seek to develop relationships with a range of strategic partners and will evaluate opportunities which will enable the Company to address its target markets globally, either alone or in collaboration with a partner.

4.3 ***Manufacturing***

Polarean is based in North Carolina, at the Meridian Corporate Center in the Research Triangle Park area. The 4,000-square foot facility they occupy was purpose-built by GE Healthcare under FDA-mandated guidelines specifically for the design and manufacture of hyperpolarisation equipment and components. The facility contains a combination of offices, laboratory space, testing areas and an inventory warehouse.

The R&D laboratory is set up with 3-phase power, central compressed air, specialty gas handling and distribution, a separate HVAC, as well as optical cell production equipment capable of simultaneous processing of four optical cells for Xenon applications. It is also designed for the safe operation of class 4 lasers and has laser power and spectral testing apparatus. There is a dedicated polariser test bed on-site for use in product development, and a dedicated NMR system that can deliver available electromagnetic strength for use in calibrating absolute polarization measurements of hyperpolarised gas samples.

Units are built by a GMP-certified medical device manufacturer local to the Polarean offices in Durham, North Carolina. ^{129}Xe, blended with two inert gases, will be produced by GMP gas blenders. This is Polarean's drug product, which, when converted by the hyperpolariser device, manufactures hyperpolarised ^{129}Xe for inhalation. ^{129}Xe is supplied by Nukem.

5. Market opportunity

5.1 ***Overview of the market***

5.1.1 *MRI market*

Polarean's technology will be used in conjunction with MRI machines and the company will be selling the hyperpolarizer device, the drug (proprietary xenon gas blend, which must be sold

together with the hyperpolarizer device), as well as consumables, such as RF Coils. The number of MRI machines in use serves as a proxy for the potential utilisation points for the company's products and services. Polarean's technology is compatible with all of the major MRI products and their unique pulse sequence can be added to customer's MRI scanners as part of a routine process.

The use of MRI is predicted to increase in coming years, driven by aging populations, technical advancements, increasing health awareness and rising incomes in developing countries. The global MRI systems market is projected to be in the region of US$7.2 to US$8.0 billion by 2021, with compounded annual growth rates of 5.1 per cent. to 5.7 per cent. for the period 2015 – 2021 (based on research from Markets & Markets and BCC Research). OECD data shows that there are approximately 12,000 MRI units in the US and 10,000 in Europe. Asia-Pacific is predicted to be the largest growth region, with China and India forecast to present significant opportunity in the future, particularly due to their growing middle classes and increasing expenditures into healthcare.

The leading global MRI companies include Siemens Healthcare, GE Healthcare, Philips Healthcare, Hitachi Medical and Toshiba Medical (acquired by Canon in 2016), with second-tier companies such as Samsung and new Chinese firms, such as NeuSoft, having more specialised products as a point of differentiation. The most significant contrast agent firms include GE Healthcare, Bracco Diagnostics, Bayer, Covidien, Lantheus and Guerbet, with many other smaller players. Both MRI companies as well as contrast agent companies are in constant contact with radiology departments.

5.1.2 *Pulmonary disease market*

Pulmonary diseases are a leading cause of death worldwide and pose a significant burden on global health systems. According to the US National Heart, Lung and Blood Institute, pulmonary diseases cost the US an estimated US$97.7 billion in direct costs in 2009 and, excluding lung cancer, caused approximately 235,000 US deaths in 2010. Although Polarean's technology would better inform decision making for a wide range of these pulmonary diseases, the specific and detailed nature of the information it provides would best be suited to conditions that require a high degree of accuracy and in which greater cost can be justified. Rather than replacing spirometry as a low cost, general screening tool, HPX MRI will be most useful for addressing unmet diagnostic needs in the most serious cases of pulmonary conditions including COPD, asthma, cystic fibrosis, IPF, chronic cough and pulmonary hypertension. The prevalence of these conditions and the way in which Polarean's technology will be used is summarised in Table 1.

Table 1. Epidemiology and use of Polarean's technology in key pulmonary diseases

Pulmonary Disease	*Potential Use of Polarean's Technology*
COPD	● Monitor effectiveness of expensive new therapies ● Switch therapies earlier if necessary
Asthma	● Identify areas where bronchial thermoplasty is most likely to succeed ● Reduce the number and cost/time of surgeries
Cystic fibrosis	● Determine antibiotic response and quickly switch therapies to avoid resistance
IPF	● More definitively diagnose IPF, reducing the need for biopsy ● Monitor effectiveness of therapies
Chronic cough	● Diagnose causes more quickly, allowing more rapid therapy and reducing trial and error diagnoses and treatments
Pulmonary hypertension	● Diagnose without the need for catherization. ● Monitor response to treatment

Another market for Polarean's technology is in interventional pulmonology procedures. Interventional pulmonology is a fast-growing field involving the use of bronchoscopy to place stents to open airways, valves to control airflow or heat ablation to remove constrictive tissue. It has been used in various lung conditions, including COPD, asthma and airway stenosis. Critical to the success of these procedures is the correct placement of the devices. HPX MRI can be

used to guide the selection of the correct location for placement, improving the success rates for these procedures.

In order for lung resections to be performed, physicians must be certain that there will be sufficient lung capacity post-surgery. Patients are selected using spirometry (inaccurate tool) to assess vital capacity and forced expiratory volume in 1 second, with SPECT gaining popularity for predicting post-surgical lung volume. HPX MRI is more accurate than both these techniques and costs less than SPECT. Polarean estimates that 70,000 of the 210,000 new cases of lung cancer are candidates for lung resections in the US each year and 35,000 patients (most severe 1 per cent. of the 3.5 million adults diagnosed with emphysema) will be suitable candidates for pulmonary stent and valve procedures (Centres for Disease Control and Prevention). It should be noted that these valves are not yet approved in the US.

Clinical trials for novel pulmonary drugs also present a significant market opportunity for Polarean. HPX MRI will allow developers to quantitatively measure the effect of their therapy on ventilation and/or gas exchange, thus presenting an attractive value proposition. In 2016, 45 interventional clinical trials were initiated in the respiratory area, with a total of 4,300 patients enrolled. Therefore, this application provides a considerable market for Polarean.

5.2 ***Competitor landscape***

Polarean's competition can be considered to be any method for measuring lung function. As outlined above, this includes imaging technologies such as scintigraphy, CT and x-ray, and non-imaging methods such as spirometry. All the current options have significant disadvantages compared with Polarean's hyperpolarised xenon technology. They are less accurate, require exposure to radiation, determine structure or function (but not both) and do not provide visualisation of the smallest airways.

There are a number of contrast agents used with the various imaging techniques. ^{133}Xenon is currently used as a contrast agent for scintigraphy and MRI, however, it is not considered to be a direct competitor since it is a radioactive isotope.

An improved scintigraphy technology, Technegas, is being developed by Cyclomedica Australia Pty Limited and is currently in phase 3 trials. It will provide improved ventilation imaging for the diagnosis of pulmonary embolism, although it may also be used in other pulmonary conditions, such as COPD. As with all scintigraphy tools, Technegas exposes patients to ionising radiation. In addition, it is limited to the detection of ventilation defects and cannot be used to detect gas exchange impairment. Thus, Technegas is not considered to be a direct competitor to Polarean.

A research group at The University of Nottingham have been working in the area of hyperpolarised krypton MRI (Rogers *et al*., 2016). Although academically this technology is a potential competitor with HPX MRI, it does not appear to be commercially viable. This is due to the low level of polarisation that can be achieved with krypton, as well as the fact that is it a recalcitrant atom and thus has a short duration of polarisation, two orders of magnitude shorter than xenon. This means that the handling times for polarised krypton are too short to facilitate its commercial clinical use.

The only competition in the field of hyperpolarised xenon imaging comes from Xemed. This small US company conducts government-funded research with similar technology. Polarean's legal counsel has advised that up to 14 of Polarean's patents, extending to 2023, are being infringed, and Polarean notified the company of this in October 2013. Xemed have advised that they are aware of Polarean's patent position and will not infringe on any patents. They have agreed that they will only use its technology under the FDA Safe Harbour provision, that is, in the direct pursuit of scientific research required for an FDA submission for a new drug or device registration.

6. Polarean Personnel

Polarean's management team has a mixture of highly experienced professional life science executives and leading researchers in the field of hyperpolarisation technology. The backgrounds of its board and senior management team include individuals with significant medical device start-up experience and others with experience working in senior positions at large device companies. It key executives include:

Directors:

Richard Morgan, *Non-Executive Chairman*

Mr. Morgan is Founder and Executive Director of Amphion Innovations plc. Richard has played an active role in the development of over 35 life science companies, including MediSense and Celgene and, most recently, Kromek and Motif Bio. Prior to founding Amphion, he spent time at Wolfensohn and spent 15 years with Schroders plc, a British Merchant bank, where he was a member of the board of the merchant bank and head of the Schroder Strategy Group, which he founded. Mr. Morgan, a British citizen, was raised in Kenya and educated in England.

Mr. Morgan graduated with a Bachelor of Engineering with First Class Honours from the University of Auckland, New Zealand. In 1982 he completed the Advanced Management Program at the Harvard Business School.

Richard Hullihen, *Chief Executive Officer*

Mr. Hullihen began his career with GEC-Picker International in the start-up and formation of their CT and MRI businesses holding key positions in engineering and programme management before moving into corporate business development and strategic planning. He also set up joint ventures in Japan for production of MRI systems. Mr. Hullihen led the acquisition of Instrumentarium's MRI business. He was then Director of Development for the parent organisation, leading enterprise wide strategic planning and representing the medical business at the corporate level in Marconi. That led to the startup of Marconi's healthcare informatics business where he was Vice President and General Manager. Following that, Mr. Hullihen became the Chief Executive Officer of an Amphion Innovations plc backed venture, m2m Imaging Corp, specialising in the development of high performance cryogenic and superconducting RF coils for MR systems.

Mr. Hullihen holds a Bachelor of Science degree in electrical engineering from Western Michigan University and a Masters from Case Western Reserve University.

Kenneth West, *Chief Operating Officer*

Mr. West began his career with Fortune 200 FMC Corporation in the 1980s and since that time he has been involved at a senior level with five successful new companies in the medical technology field. Mr. West held senior management positions at three venture capital backed start-ups, including Vice President of Sales, Marketing and Business Development at Embrex, Inc., a drug delivery company that went public and was acquired by Pfizer, Chief Operating Officer at VetInsite, a health care information technology company that was acquired by MediMedia; and Biolex, a transgenic protein company where he was a co-founder and the first President/Chief Operating Officer. The company raised more than US$180 million in venture capital and was acquired by Synthon. Mr. West has also led the US subsidiaries of two European medical device companies as they entered the US Market, including Curasan AG and Tem International GmbH. As President of each of these US companies, Mr. West built and managed the US organisations, growing them into multi-million-dollar subsidiaries with direct sales forces to physician offices and hospitals. He became CEO of Polarean, Inc. in 2013.

Mr. West holds a Bachelor of Science degree in chemical engineering from Cornell University and a Masters from the Wharton School of the University of Pennsylvania.

Bastiaan Driehuys, *PhD, Chief Technology Officer*

Dr. Driehuys was a co-inventor of hyperpolarised gas MRI while completing his Doctorate in atomic physics at Princeton University. In 1996, Dr. Driehuys helped to start MITI, a company founded to commercialise hyperpolarised gas technology. In 1999, Dr. Driehuys became Chief Executive Officer of the company, managed its acquisition for US$15 million by Amersham Health and he remained with the company as Director of the Research Triangle Park Facility until 2003. In this senior management position, he oversaw all hyperpolarised gas physics and applications research. He served on the Amersham global imaging

management team, which was broadly responsible for the company's diagnostic imaging research efforts for all modalities and disease areas. In 2004, Dr. Driehuys returned to academia where he is a Professor of Radiology, Medical Physics and Biomedical Engineering at Duke University. His research program has been focused on driving the clinical translation of hyperpolarised ^{129}Xe MRI and exploiting the unique properties of the atom for molecular imaging.

Dr. Driehuys completed his post-doctoral work and PhD in atomic physics at Princeton University after receiving his BA summa cum laude in physics from Franklin & Marshall College in Lancaster, Pennsylvania. He has authored more than 60 publications in the areas of hyperpolarisation physics and biological applications. He holds 32 granted US patents and is a co-recipient of the Thomas Alva Edison Patent Award, as well as the Tibbetts Award for outstanding small business scientific accomplishment.

Jonathan Allis, *Ph.D., Non-Executive Director*

Dr. Allis is the founding CEO of Blue Earth Diagnostics, a molecular imaging diagnostics company focused on the development and commercialization of novel PET imaging agents. Prior to this role, he was the General Manager for PET at GE Healthcare Life Sciences and had global responsibility for GE Healthcare's PET agent and PET synthesis platforms business. Mr. Allis has previously held positions in R&D, Marketing and Product Development at GE Healthcare, Amersham plc., Siemens Medical Solutions and Oxford Magnet Technology, in the UK, USA and Germany. Jonathan has an undergraduate degree in physics from the University of Cape Town and a doctorate in biochemistry from the University of Oxford.

Robert ("Bob") Bertoldi, *Director*

Bob Bertoldi is Chief Financial Officer of Amphion Innovations plc and was a founder President and continues to be the Chief Financial Officer of Amphion Capital Partners LLC (the predecessor of Amphion) and VennWorks LLC. Mr Bertoldi is also a general partner of Amphion Partners LLC (formerly known as Wolfensohn Partners, LP). Prior to that Mr Bertoldi served as Chief Financial Officer for James D. Wolfensohn, Inc. and Hambro America Inc. Mr Bertoldi is currently a director of Motif Bio Plc ('Motif') and was CFO at the time of Motif's admission to AIM in April 2015. In addition, Mr Bertoldi serves as a director of three other Amphion Partner Companies: WellGen, Inc., and Axcess International Inc., and is also a director of DataTern, Inc., and the Subsidiary.

Mr Bertoldi began his career at KPMG and left as a manager in the investment services department. Mr Bertoldi obtained a B.A. in Accounting and Economics from Queens College, New York in 1976 and became a Certified Public Accountant in 1978. He is a member of the AICPA and NYSCPA.

Juergen Laucht, *Non-Executive Director*

Juergen Laucht has over 40 years of business experience in the chemical engineering industry. In 2011 Mr Laucht took on the role of Managing Director of NUKEM Isotopes, prior to which he was the General Manager for Research Reactors & Stable Isotopes for NUKEM. Prior to joining NUKEM in 1995, Mr Laucht held positions at Siemens in their Fuel Fabrication Works team and at Reactor Brennelement Union, both in Germany. Mr Laucht has a degree in Chemical Engineering from the Technical University of Darmstadt, Germany.

Senior Management:

William Patrick, *Chief Financial Officer*

Mr. Patrick has 25 years' experience in corporate finance, in both public global multinationals, including GEC-Picker International, and privately held and venture-backed technology-based businesses, including Penske Corp, Kennedy Group and Noteworthy Medical Systems. Mr. Patrick is skilled in manufacturing businesses, international operations and business finance.

Mr. Patrick has a Bachelor's degree in Business Administration from the University of Toledo and is a Certified Public Accountant in the state of Ohio.

7. Risks

7.1 *Technical risk*

Hyperpolarised xenon imaging has a long history, with the ^{129}Xe isotope first used in *ex-vivo* imaging studies in 1994. Its use in humans is supported by a considerable and growing body of literature, and Polarean's technology specifically is well-characterised by top academic institutions. Therefore, we foresee there to be a low risk of technical failure.

7.2 *Funding risk*

Drug/device development is a high-risk/high-reward endeavour and typically costs millions of dollars before the product may be approved by the regulators. Polarean will be undertaking research and development activities to further exploit its technology platform and also undertake clinical trials to gain regulatory approval. Product development is subject to strict regulatory requirements and these undertakings involve significant costs. Although the clinical development program may be very carefully designed and the scientific rational may be clear, there is the risk that the investments made in research and development may not yield technically feasible or commercially viable products. Any failure or delay in obtaining regulatory approval or translating clinical approvals into commercially viable products will affect Polarean's business. Polarean's clinical trials must demonstrate non-inferiority against a ^{133}Xenon, 40-year-old nuclear medicine technology, and the US FDA has indicated its willingness to accept a very broad indication for use for the company's technology – for the evaluation of pulmonary function. Polarean intends to utilise funds from its initial public offering to meet the product development costs. A measure of assurance can be gained from Polarean's successful capital raise to fund the acquisition of m2m Acquisition Inc.

7.3 *IP risk*

Polarean's success will depend, in part, on being able to protect its intellectual property rights as well as to operate without infringing on other company's property rights. Polarean's technology is protected by 29 issued patents, giving it a strong position in the industry and making freedom to operate difficult for any company that attempts to design around one or more of its intellectual property. The intellectual property covers four broad areas:

- Imaging methods
- Hyperpolarisation equipment
- Hyperpolarisation methods
- Cryogenically cooled RF coils and associated electronics

12 patents will expire in the next five years, posing a risk to Polarean's currently controlling position in the industry. However, Polarean is taking an aggressive approach to protecting its position and will continue to expand its portfolio by patenting and in-licensing hyperpolarised gas technology IP wherever possible. Two patent families have been filed in the US and internationally (combined 11 applications) that will provide IP protection to at least 2034, and 2 of these patents have already been issued in the US. In addition, Polarean expects to be granted a period of exclusivity by the FDA approval process, which should last for three to five years from approval.

7.4 *Manufacturing development risk*

Management has devised a manufacturing process for the company's product. The company has arranged for GMP manufacturing from an outside supplier. The manufactured products from the external supplier will be assembled at Polarean's facility, which was previously ISO 9001/13485 certified when it was run by General Electric. Polarean is currently working on recertifying the facility.

There are no critical parts suppliers as most of the products can be sourced from alternative providers. ^{129}Xenon is a naturally occurring and abundant isotope of xenon, making up 26 per cent. of the naturally occurring gas. Polarean requires 80 per cent. or more isotopic purity for their technology to work. The only way to purify xenon is to carry out gas centrifugation, which is a complex process only performed at a few facilities around the world, most of which are in the former Soviet Union. It is costly (around $150-200/litre) and there are few specialised suppliers who work with the gas centrifuge companies.

Polarean has an agreement with one of these suppliers, Nukem. If Polarean were required to seek an alternative supplier, the Company has identified alternative providers.

There are risks associated with development work, not least how well the final manufacturing process will be scaled up to industrial level cGMP. Polarean have taken appropriate steps to mitigate such risk by appointing a highly experienced drug/device manufacturing specialist to oversee the process.

7.5 ***Competitor risk***

Polarean is developing products in the intensely competitive market of imaging. There is competition from direct competitors developing contrast agents using hyperpolarised gases, and from other imaging modalities such as CT, PET and scintigraphy. Continued development of existing imaging modalities, such as Cyclomedica's improved scintigraphy technology, Technegas, may pose a future risk. However, due to the inherent nature of these technologies they are likely to suffer from similar limitations as their current-day forms. For instance, while Technegas can generate better quality images than incumbent ^{133}Xe scintigraphy technology (but potentially inferior to ^{129}Xe if hotspots of technetium accumulate), it will continue to use ionising radiation and be limited to imaging ventilation.

Xemed is one potential direct competitor that is developing methods for polarizing ^{129}Xenon and ^{3}Helium isotopes and evaluating their clinical efficacy. Xemed has evaluated subjects in three US clinics for a dozen diagnostic protocols, carrying out 300 studies in 30 healthy volunteers during Phase I, and 600 studies in 60 patients and healthy volunteers during Phase II. As discussed earlier, Xemed has indicated that it is using Polarean's technology under Safe Harbour provisions for research purposes, and ^{3}Helium is not commercially attractive. Taken together, all of the above competitor companies and technologies have the potential to compete for market share with Polarean, which may limit commercial value.

7.6 ***Reliance on key personnel***

Polarean's technology and knowhow is specialised and the company may be dependent on certain members of its management and employees. Thus, there could be an adverse impact on the company if one or more of these individuals were to leave the company. Polarean intends to grow using its own internal capabilities and will need to continue to expand its management and employee base as it continues to undertake clinical trials and commercialize its technology. Polarean's ability to successfully navigate the development phase and support commercialisation efforts will depend, in part, on its ability to manage its human resources. To date, Polarean has successfully navigated its growth and expects to be able to do so in the future, and should be able to successfully attract and retain skilled and experienced personnel.

8. Conclusions

Polarean's technology is built on decades of hyperpolarised gas imaging research and offers a much improved, radiation-free option for visualising lung function. It enables the quantitative assessment of ventilation and gas exchange, a unique value proposition that may contribute to considerable advancements in the diagnosis and treatment monitoring for a range of pulmonary diseases. It has been well-characterised by leading academic institutions and its technical development is being led by one of the leading scientists in the field.

The technology is subject to strict regulatory requirements and Polarean must perform a phase III clinical trial (with two protocols) demonstrating non-inferiority to ^{133}Xenon, 40-year-old nuclear medicine technology in order to gain approval. Two clinical trials are planned, and while these are expensive undertakings, success will allow Polarean to tap into the multi-billion-dollar clinical MRI market. The potential for Polarean's HPX MRI technology to generate significant revenues is underscored by the FDA's indication that it will accept a broad claim – for the evaluation of pulmonary function in general. Since this would not limit the technology to use in any specific pulmonary diseases, the potential market is significant.

Despite the imaging market being a highly competitive space, Polarean's technology is set apart from current pulmonary imaging techniques by its ability to visualise ventilation, as well as gas exchange, in a non-invasive manner and without the use of ionising radiation. The only competitor exploiting hyperpolarised xenon gas, Xemed, has acknowledged its infringement of Polarean's patents and restricted its use to research under safe harbour provisions. Therefore, successfully navigating the regulatory requirements to reach the market

is likely to see uptake by radiology departments and pulmonologists and the realisation of good revenues provided Polarean can establish a direct sale model or secure a sufficient proportion of an appropriate reimbursement for each procedure.

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PART IV

FINANCIAL INFORMATION ON THE GROUP

SECTION (A) – ACCOUNTANTS' REPORT ON THE HISTORICAL FINANCIAL INFORMATION OF THE COMPANY

23 March 2018

The Directors
Polarean Imaging plc
27-28 Eastcastle Street
London, W1W 8DH

The Directors
Northland Capital Partners Limited
40 Gracechurch Street
2nd Floor
London
EC3V 0BT

Dear Sirs

Introduction

We report on the audited historical financial information of Polarean Imaging plc (the "Company") set out in Section B) of Part IV (the "Financial Information") of the admission document dated 23 March 2018 (the "Document") of the Company. This Historical Financial Information has been prepared for inclusion in the Document on the basis of preparation and accounting policies set out in note 2 to the Financial Information. This report is required by paragraph 20.1 of Annex 1 of the Prospectus Directive Regulation as applied by part (a) of Schedule Two to the AIM Rules for Companies (the "AIM Rules") and is given for the purposes of complying with the AIM Rules and for no other purpose.

Responsibilities

The directors of the Company (the "Directors") are responsible for preparing the Financial Information in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS").

It is our responsibility to form an opinion on the Financial Information as to whether this gives a true and fair view, for the purposes of the Document and to report our opinion to you.

Save for any responsibility arising under Paragraph (a) of Schedule Two of the AIM Rules for Companies to any person as and to the extent there provided, to the fullest extent permitted by law we do not assume any responsibility and will not accept any liability to any person other than the addressees of this letter for any loss suffered by any such person as a result of, arising out of, or in connection with this report or our statement, required by and given solely for the purposes of complying with Paragraph (a) of Schedule Two of the AIM Rules for Companies, consenting to its inclusion in the Document.

Basis of Opinion

We conducted our work in accordance with Standards of Investment Reporting issued by the Auditing Practices Board in the United Kingdom. Our work included an assessment of evidence relevant to the amounts and disclosures in the Financial Information. It also included an assessment of significant estimates and judgments made by those responsible for the preparation of the financial statements

underlying the financial information and whether the accounting policies are appropriate to the entity's circumstances, consistently applied and adequately disclosed.

We planned and performed our work so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial information is free from material misstatement, whether caused by fraud or other irregularity or error.

Opinion

In our opinion, the Financial Information gives, for the purposes of the Document, a true and fair view of the state of affairs of Polarean Imaging plc as at the date stated and of the results, financial position, cash flows and changes in equity for the period then ended in accordance with the basis of preparation set out in note 2 to the Financial Information and IFRS.

Our work has not been carried out in accordance with auditing or other standards and practices generally accepted in any jurisdictions other than the United Kingdom and accordingly should not be relied upon as if it had been carried out in accordance with those other standards and practices.

Declaration

For the purposes of paragraph (a) of Schedule Two of the AIM Rules for Companies, we are responsible for this report as part of the Document and declare that we have taken all reasonable care to ensure that the information contained in this report is, to the best of our knowledge, in accordance with the facts and contains no omission likely to affect its import. This declaration is included in the Document in compliance with Paragraph (a) of Schedule Two of the AIM Rules.

Yours faithfully

Crowe Clark Whitehill LLP
Chartered Accountants

SECTION (B) – HISTORICAL FINANCIAL INFORMATION OF THE COMPANY

STATEMENT OF FINANCIAL POSITION

The statement of financial position of the Company as at 30 June 2017 is stated below:

	US$
Assets	
Non- current assets	
Investment in subsidiary undertaking	4,342,848
Current assets	
Amounts due from subsidiary undertaking	1,985,064
Total assets	6,327,912
Equity and liabilities	
Capital and reserves	
Share capital	23,291
Share premium account	1,808,587
Merger relief reserve	4,322,527
Share based payment reserve	521,514
Profit and loss account	(348,007)
Total equity attributable to equity holders	6,327,912
Total liabilities	–
Total equity and liabilities	6,327,912

STATEMENT OF COMPREHENSIVE INCOME

The statement of comprehensive income of the Company from the date of incorporation on 24 October 2016 to 30 June 2017 is stated below:

	Note	*US$*
Professional fees settled by issue of warrants		(348,007)
Total comprehensive income attributable to equity owner		(348,007)
Loss per share		
Basic and diluted (US$ per share)	5	(0.19)

STATEMENT OF CHANGES IN EQUITY

The statements of changes in equity of the Company for period from incorporation on 24 October 2016 to 30 June 2017 are set out below:

	Share capital US$	*Share premium US$*	*Merger relief reserve US$*	*Share based payment reserve US$*	*Profit and loss account US$*	*Total equity US$*
On incorporation	1	–	–	–	–	1
Shares issued on acquisition of subsidiary	20,320	–	4,322,527	–	–	4,342,847
Shares issued to investors (net of associated costs)	2,970	1,982,094	–	–	–	1,985,064
Issue of warrants	–	(173,507)	–	521,514	(348,007)	–
Result for the period	–	–	–	–	–	–
As at 30 June 2017	23,291	1,808,587	4,322,527	521,514	(348,007)	6,327,912

The share capital comprises the ordinary shares of £0.00037 each in the capital of the Company.

Share premium represents the excess of subscription amounts for the issue of ordinary shares over nominal value of shares issued, less any attributable share issue costs.

The merger relief reserve arises because, as permitted by IAS 27, the net assets of the Subsidiary at acquisition have been treated as the deemed cost of the Company's investment in its individual financial information. Share premium has not been recognised on the share issue as required by s.612 of the Companies Act 2006.

The share based payments reserves represents the fair value of warrants issued to shareholders in the Company under the arrangements for the acquisition of the Subsidiary by the Company and the pre-Merger Fundraising.

STATEMENT OF CASH FLOWS

The cash flow statement of the Company from the date of incorporation on 24 October 2016 to 30 June 2017 is set out below:

	US$
Operating activities	
Increase in amounts due from subsidiary undertaking	(1,985,064)
Net cash from operating activities	(1,985,064)
Financing activities	
Proceeds from issue of share capital	1,985,064
Net cash from financing activities	1,985,064
Net increase in cash and cash equivalents	–
Cash and cash equivalents at end of period	–

NOTES TO THE HISTORICAL FINANCIAL INFORMATION

1. General Information

The Company is a company incorporated under the laws of England and Wales under the Companies Act 2006. The Company was incorporated as a private company on 24 October 2016. The Company's registered number is 10720490 and its registered office is at 27-28 Eastcastle Street, London, W1W 8DH.

The Company is the parent company of Polarean, Inc (the "Subsidiary", together the "Group"). The principal activity of the Group is developing next generation medical imaging technology. The Subsidiary is incorporated in the United States of America and has a registered office of 2500 Meridian Parkway #175, Durham, NC 27713, USA.

The Company's historical financial information is presented for the period from incorporation on 24 October 2016 to 30 June 2017.

This financial information has been prepared in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS"), and with those parts of the Companies Act 2006 as applicable to companies reporting under IFRS.

This historical financial information is prepared in accordance with IFRS under the historical cost convention, as modified by the use of fair value for financial instruments measured at fair value. The historical financial information is presented in United States Dollars ("US$") except where otherwise indicated.

The principal accounting policies adopted in the preparation of the historical financial information are set out below. The policies have been consistently applied to all the years presented, unless otherwise stated.

2. Accounting Policies

Basis of preparation

The principal accounting policies adopted by the Company in the preparation of the financial information are set out below.

The financial information on the Company has been prepared in accordance with IFRS, including interpretations made by the International Financial Reporting Interpretations Committee (IFRIC) issued by the International Accounting Standards Board (IASB). The standards have been applied consistently.

Comparative figures

No comparative figures have been presented as the financial information covers the period from incorporation to 30 June 2017.

Functional and presentational currency

The functional and presentational currency of the Company is the US Dollar (US$).

Standards and interpretations issued but not yet applied

A number of new standards and amendments to standards and interpretations have been issued but are not yet effective and in some cases have not yet been adopted by the EU.

The directors do not expect that the adoption of these standards will have a material impact on the financial statements of the Company in future periods, except that IFRS 9 will impact both the measurement and disclosures of financial instruments,

Going concern

This historical financial information relating to the Company has been prepared on the going concern basis.

The directors of the Company (the "Directors") have a reasonable expectation that the Company has adequate resources to continue in operational existence for the foreseeable future and for at least one year from the date of this historical financial information. For these reasons, they continue to adopt the going concern basis in preparing the Company's historical financial information.

Share based payments

The cost of equity-settled transactions is recognised, together with a corresponding increase in equity, over the period in which performance and/or service conditions are fulfilled, ending on the date on which the recipients become fully entitled to the award ("vesting point"). The cumulative expense recognised for equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired and the Company's best estimate of the number of equity instruments and value that will ultimately vest. The statement of comprehensive income charge for the year represents the movement in the cumulative expense recognised as at the beginning and end of that period.

The fair value of share-based remuneration is determined at the date of grant and recognised as an expense in the statement of comprehensive income on a straight-line basis over the vesting period, taking account of the estimated number of shares that will vest. The fair value is determined by use of a Black Scholes model.

Financial assets

The Directors determine the classification of the Company's financial assets at initial recognition.

Cash and cash equivalents

The Company considers any cash on short-term deposits and other short term investments to be cash equivalents.

Receivables

The Company has classified the receivables as 'loans and receivables'.

Use of assumptions and estimates

In preparing the financial information, the Directors have to make judgments on how to apply the Company's accounting policies and make estimates about the future.

The following critical judgements have been made by the directors.

Going concern

The Company has to date received funding through periodic capital issues and its subsidiary undertaking is loss making. Management prepares detailed working capital forecasts which are reviewed by the Board on a regular basis. Cash flow forecasts and projections take into account sensitivities on receipts and costs. Having made relevant and appropriate enquiries, including consideration of the Company's current cash resources and the working capital forecasts, the Directors have a reasonable expectation that the Company will have adequate cash resources to continue to meet the requirements of the business for at least the next twelve months. Accordingly, the Board continues to adopt the going concern basis in preparing the financial statements.

Share based payments

The directors have to make judgments when deciding on the variables to apply in arriving at an appropriate valuation of share based compensation and similar awards including appropriate factors for volatility, risk free interest rate and applicable future performance conditions and exercise patterns.

3. Share capital

	Number	*US$*
Ordinary shares of 1p each		
On incorporation	100	1
Shares issued on acquisition of the Subsidiary	1,582,587	20.320
Shares issued to investors	231,316	2,970
As at 30 June 2017	1,814,003	23,291

On 24 October 2016, the Company was incorporated and on incorporation, the issued share capital of the Company was £1.00 comprising one ordinary share of £1.00 each. On 30 May 2017 the share capital of the Company was divided into 100 ordinary shares of 1p each.

On 30 May 2017 the Company issued 1,582,587 new ordinary shares as consideration for the acquisition of 100 per cent. of the issued share capital of the Subsidiary.

On 31 May 2017, the Company raised US$2 million of pre-IPO funding by way of the issue of 231,316 new ordinary shares at a price of £6.68 per share.

4. Share based payments

(a) ***Share options***

On 31 May 2017 the Company acquired the entire issued share capital of the Subsidiary. As part of the arrangements for that transaction 193,000 share options issued by the Subsidiary were assumed and converted by the Company into shares in the Company. Details of share options issued by the Subsidiary are set out in Section (D) of Part IV of this Document.

(b) ***Warrants***

On 31 May 2017 the Company entered into arrangements with the holders of 184,174 warrants previously granted by the Subsidiary to certain of its shareholders. Details of share warrants issued by the Subsidiary are set out in Section (D) of Part IV of this Document.

The Company granted a warrant of 5 per cent. of the issued share capital of the Subsidiary to Amphion Innovations plc, Robert Bertoldi and Richard Morgan on 31 May 2017 (the "Amphion Warrants"). A total of 97,993 warrants have been issued pursuant to that arrangement. These warrants can be exercised once the Company has raised a total of at least US$5 million at a minimum price of £6.68 (*pro rata*) and can be exercised up to four years from that date.

The Company granted 46,264 warrants to subscribers as part of the pre-merger fundraise on 31 May 2017 (Subscriber warrants). These warrants can be exercised at any time from Admission to 25 May 2021.

The fair value of the Amphion Warrants and the Subscriber Warrants was calculated using the Black Scholes option pricing model. The principal inputs were volatility of 52 per cent. and risk free interest rate of 1.44 per cent.

The resultant charge in relation to the Amphion Warrants has been recognised in the statement of comprehensive income and the charge in relation to the Subscriber Warrants has been included in equity and set against the share premium account as being directly attributable to the cost of the related share issue.

5. Loss per share

The calculation for loss per share (basic and diluted) for the relevant period is based on the profit after income tax attributable to equity holder for the period from incorporation on 24 October 2016 to 31 June 2017 is not meaningful. The loss per share in issue at 30 June 2017 is as follows:

Loss attributable to equity holders (US$)	(348,007)
Weighted average number of shares*	1,814,003
Loss per share (US$)	(0.19)

6. Financial Instruments – risk management

The Company is exposed through its operations to credit risk and liquidity risk. In common with all other businesses, the Company is exposed to risks that arise from its use of financial instruments. This note describes the Company's objectives, policies and processes for managing those risks and the methods used to measure them. Further quantitative information in respect of these risks is presented throughout this financial information.

Financial instruments

The carrying value of the financial instruments of the Company at the 30 June 2017 comprised US$1,893,552 of receivables due from the Subsidiary, representing the transfer to that company of the net receipts from the Company's pre-IPO fundraising completed on 31 May 2017.

General objectives, policies and processes

The Directors have overall responsibility for the determination of the Company's risk management objectives and policies. Further details regarding these policies are set out below:

Credit risk

The Company had receivables of US$1,985,064 at 30 June 2017. The maximum exposure to credit risk at the end of each reporting period is the fair value of each class of receivables set out above. The Company held no collateral as security.

Liquidity risk

Liquidity risk arises from the Directors' management of working capital. It is the risk that the Company will encounter difficulty in meeting its financial obligations as they fall due.

The Directors' policy is to ensure that the Company will always have sufficient cash to allow it to meet its liabilities when they become due. To achieve this aim, the Directors seek to maintain a cash balance sufficient to meet expected requirements.

The Directors have prepared cash flow projections on a monthly basis through to 31 December 2019. At the end of the period under review, these projections indicated that the Company expected to have sufficient liquid resources to meet its obligations under all reasonably expected circumstances.

7. Capital risk management

The Directors' objectives when managing capital are to safeguard the Company's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital. At the date of this financial information, the Company had been financed by equity. In the future, the capital structure of the Company is expected to consist of borrowings and equity attributable to equity holders of the Company, comprising issued share capital and reserves.

8. Subsequent events

In December 2017, the Company raised £647,127 via the issue of convertible loan notes which can be converted into 2,432,717 Ordinary Shares in the Company.

9. Nature of financial Information

The financial information presented above does not constitute statutory accounts for the Company for the period under review.

SECTION (C) – ACCOUNTANTS' REPORT ON THE HISTORICAL FINANCIAL INFORMATION OF THE SUBSIDIARY

23 March 2018

The Directors
Polarean Imaging plc
27-28 Eastcastle Street
London, W1W 8DH

The Directors
Northland Capital Partners Limited
40 Gracechurch Street
2nd Floor
London
EC3V 0BT

Dear Sirs

Introduction

We report on the audited historical financial information of Polarean, Inc (the "Subsidiary") set out in Section (D) of Part IV (the "Financial Information") of the admission document dated 23 March 2018 (the "Document") of the Company. This Historical Financial Information has been prepared for inclusion in the Document on the basis of preparation and accounting policies set out in note 2 to the Financial Information. This report is required by paragraph 20.1 of Annex 1 of the Prospectus Directive Regulation as applied by part (a) of Schedule Two to the AIM Rules for Companies (the "AIM Rules") and is given for the purposes of complying with the AIM Rules and for no other purpose.

Responsibilities

The directors of the Company (the "Directors") are responsible for preparing the Financial Information in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS").

It is our responsibility to form an opinion on the Financial Information as to whether the financial information gives a true and fair view, for the purposes of the Document and to report our opinion to you.

Save for any responsibility arising under Paragraph (a) of Schedule Two of the AIM Rules for Companies to any person as and to the extent there provided, to the fullest extent permitted by law we do not assume any responsibility and will not accept any liability to any person other than the addressees of this letter for any loss suffered by any such person as a result of, arising out of, or in connection with this report or our statement, required by and given solely for the purposes of complying with Paragraph (a) of Schedule Two of the AIM Rules for Companies, consenting to its inclusion in the Document.

Basis of Opinion

We conducted our work in accordance with Standards of Investment Reporting issued by the Auditing Practices Board in the United Kingdom. Our work included an assessment of evidence relevant to the amounts and disclosures in the Financial Information. It also included an assessment of significant estimates and judgments made by those responsible for the preparation of the financial statements underlying the financial information and whether the accounting policies are appropriate to the entity's circumstances, consistently applied and adequately disclosed.

We planned and performed our work so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance

that the financial information is free from material misstatement, whether caused by fraud or other irregularity or error.

Opinion

In our opinion, the Financial Information gives, for the purposes of the Document, a true and fair view of the state of affairs of Polarean Imaging plc as at the date stated and of the results, financial position, cash flows and changes in equity for the period then ended in accordance with the basis of preparation set out in note 2 to the Financial Information and International Financial Reporting Standards as adopted by the European Union.

Our work has not been carried out in accordance with auditing or other standards and practices generally accepted in any jurisdictions other than the United Kingdom and accordingly should not be relied upon as if it had been carried out in accordance with those other standards and practices.

Declaration

For the purposes of paragraph (a) of Schedule Two of the AIM Rules for Companies, we are responsible for this report as part of the Document and declare that we have taken all reasonable care to ensure that the information contained in this report is, to the best of our knowledge, in accordance with the facts and contains no omission likely to affect its import. This declaration is included in the Document in compliance with Paragraph (a) of Schedule Two of the AIM Rules.

Yours faithfully

Crowe Clark Whitehill LLP
Chartered Accountants

SECTION (D) – HISTORICAL FINANCIAL INFORMATION OF THE SUBSIDIARY

INCOME STATEMENT
For the years ended 31 December 2014, 31 December 2015 and 31 December 2016

	Note	*2014*	*2015*	*2016*
		US$	*US$*	*US$*
Revenue	(4)	965,428	902,339	880,645
Cost of sales		(168,027)	(308,560)	(488,888)
Gross profit		797,401	593,779	391,757
Administrative expenses		(769,960)	(1,185,780)	(1,397,712)
Depreciation	(11)	(8,141)	(5,392)	(4,747)
Amortisation	(12)	(4,600)	(4,600)	(4,600)
Selling and distribution expenses		(86,409)	(25,394)	(35,238)
Loss on contingent consideration revaluation		–	(284,000)	(5,000)
Operating loss	(6)	(71,709)	(911,387)	(1,055,540)
Finance income	(7)	88	590	147
Finance charges	(7)	(37,777)	(159,902)	(4,320)
Loss before taxation		(109,398)	(1,070,699)	(1,059,713)
Taxation	(10)	–	–	–
Loss the year		(109,398)	(1,070,699)	(1,059,713)
Other comprehensive income		–	–	–
Total comprehensive loss the year		(109,398)	(1,070,699)	(1,059,713)
Loss per share attributable to the ordinary equity holders of the Subsidiary				
Basic and diluted (US Dollars per share)	(9)	(0.17)	(1.49)	(1.19)

STATEMENT OF FINANCIAL POSITION
As at 31 December 2014, 31 December 2015 and 31 December 2016

	Note	*2014*	*2015*	*2016*
		US$	*US$*	*US$*
Assets				
Non-current assets				
Property, plant and equipment	(11)	11,191	5,799	11,985
Intangible assets	(12)	32,200	27,600	23,000
Trade and other receivables	(13)	3,961	3,961	3,961
Total non-current assets		47,352	37,360	38,946
Current assets				
Trade and other receivables	(13)	380,049	135,525	16,034
Inventory	(14)	275,053	402,064	321,661
Cash and cash equivalents	(15)	112,834	912,399	97,847
Total current assets		767,936	1,449,988	435,542
Total assets		815,288	1,487,348	474,488
Equity and liabilities				
Equity				
Called up share capital	(16)	–	–	–
Share premium	(16)	2,442	1,838,703	1,838,703
Other equity	(17)	75,164	137,664	137,664
Share based payment reserve	(18)	41,597	122,773	238,172
Retained losses	(17)	(669,875)	(1,740,574)	(2,800,287)
Total equity		(550,672)	358,566	(585,748)
Non-current liabilities				
Provision for contingent consideration	(19)	27,000	311,000	316,000
Deferred revenue	(20)	78,515	49,199	10,257
Total non-current liabilities		105,515	360,199	326,257
Current liabilities				
Deferred revenue	(20)	87,998	129,100	66,923
Trade and other payables	(21)	778,447	495,483	562,515
Borrowings and loans	(22)	394,000	144,000	104,541
Total current liabilities		1,260,445	768,583	733,979
Total liabilities		1,365,960	1,128,782	1,060,236
Total equity and liabilities		815,288	1,487,348	474,488

STATEMENT OF CHANGES IN EQUITY

	Share Capital US$	*Share premium US$*	*Other equity US$*	*Share based payment reserve US$*	*Retained losses US$*	*Total equity US$*
Balance at 1 January 2014	–	2,442	62,500	30,528	(560,477)	(465,007)
Comprehensive Income						
Loss for the year	–	–	–	–	(109,398)	(109,398)
Transactions with owners						
Value of conversion rights on convertible loans	–	–	12,664	–	–	12,664
Share based payment expense	–	–	–	11,069	–	11,069
Balance at 31 December 2014	–	2,442	75,164	41,597	(669,875)	(550,672)
Balance at 1 January 2015	–	2,442	75,164	41,597	(669,875)	(550,672)
Comprehensive Income						
Loss for the year	–	–	–	–	(1,070,699)	(1,070,699)
Transactions with owners						
Value of conversion rights on convertible loans	–	–	62,500	–	–	62,500
Share based payment expense	–	–	–	81,176	–	81,176
Issue of preference shares	–	1,176,384	–	–	–	1,176,384
Conversion of convertible debt to preference shares	–	659,877	–	–	–	659,877
Balance at 31 December 2015	–	1,838,703	137,664	122,773	(1,740,574)	358,566
Balance at 1 January 2016	–	1,838,703	137,664	122,773	(1,740,574)	358,566
Comprehensive Income						
Loss for the year	–	–	–	–	(1,059,713)	(1,059,713)
Transactions with owners						
Share based payment expense	–	–	–	115,399	–	115,399
Balance at 31 December 2016	–	1,838,703	137,664	238,172	(2,800,287)	(585,748)

STATEMENT OF CASH FLOWS
For the years ended 31 December 2016, 31 December 2015 and 31 December 2014

	Note	*2014*	*2015*	*2016*
		US$	*US$*	*US$*
Cash flows from operating activities				
Loss before taxation		(109,398)	(1,070,699)	(1,059,713)
Adjustments for non-cash/non-operating items:				
Depreciation	(11)	8,141	5,392	4,747
Amortisation	(12)	4,600	4,600	4,600
Interest paid		29,616	121,921	4,320
Interest received		(88)	(590)	(147)
Increase in provision for contingent consideration		7,000	284,000	5,000
Share based compensation		7,783	57,082	50,213
Issue of warrants in lieu of fees		3,285	24,094	65,186
Loss on debt extinguishment		–	37,981	–
Amortisation of debt discount		–	94,874	–
		(49,061)	(441,345)	(925,794)
Changes in working capital:				
(Increase)/decrease in trade and other receivables		(155,458)	244,522	119,492
Decrease/(Increase) in inventory		37,526	(127,011)	80,403
Increase in trade and other payables		64,217	138,614	67,031
Decrease in deferred revenue		(27,397)	(320,268)	(101,119)
Cash inflow from operations		(130,173)	(505,488)	(759,987)
Taxation		–	–	–
Net cash outflow from operating activities		(130,173)	(505,488)	(759,987)
Cash flows from investing activities				
Purchase of property, plant and equipment		(5,980)	–	(10,933)
Net cash outflow from investing activities		(5,980)	–	(10,933)
Cash flows from financing activities				
Issue of convertible loan notes		–	250,000	–
Issue of preference shares		–	1,176,384	–
Repayment of convertible loan notes		–	–	(39,459)
Interest paid		(29,616)	(121,921)	(4,320)
Interest received		88	590	147
Net cash outflow from financing activities		(29,528)	1,305,053	(43,632)
Net increase/(decrease) in cash and cash equivalents		(165,681)	799,565	(814,552)
Cash and cash equivalents beginning of period		278,515	112,834	912,399
Cash and cash equivalents at end of period	(15)	112,834	912,399	97,847

1. GENERAL INFORMATION

Polarean, Inc. (the "Subsidiary") is a company based in Durham, North Carolina developing next generation medical imaging technology. The Subsidiary's proprietary technology produces a contrast agent that vastly improves Magnetic Resonance Imaging ("MRI") pulmonary resolution and diagnostic capability. The Subsidiary was incorporated under the laws of the state of North Carolina on 6 October 2011.

Based on discoveries made by the founders, the Subsidiary's products are currently sold to, and deployed by, an international base of research customers to study lung function, disease progression, and the effectiveness of therapeutics under development. To address the clinical market, the Subsidiary, in coordination with the FDA, is preparing final Phase III trials to secure FDA approval of its combination drug-device product. Once the product is approved by the FDA, the Subsidiary will be able to sell its products for routine clinical use.

The Subsidiary's costs associated with developing and commercialising its polariser technology include costs associated with intellectual property, optimising the technology, obtaining regulatory approval, and contract manufacturing. To complete clinical trials the Subsidiary has required, and will continue to require, additional operating funds. The Subsidiary has raised funds through offerings of debt, common stock, and Series A preferred stock.

There are no restrictions on the Subsidiary's ability to access or use its assets and settle its liabilities.

The Subsidiary's historical financial information is presented for the years ended 31 December 2014, 31 December 2015 and 31 December 2016.

(a) ***Basis of preparation***

The historical financial information presents the financial track record of the Polarean, Inc. for the three years ended 31 December 2014, 2015 and 2016. This financial information has been prepared in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS").

This historical financial information is prepared in accordance with IFRS under the historical cost convention, as modified by the use of fair value for financial instruments measured at fair value. The historical financial information is presented in United States Dollars ("US$") except where otherwise indicated.

The principal accounting policies adopted in the preparation of the historical financial information are set out below. The policies have been consistently applied to all the years presented, unless otherwise stated.

(b) ***Going concern***

This historical financial information relating to the Subsidiary has been prepared on the going concern basis.

The directors of Polarean, Inc. (the "Directors") have a reasonable expectation that the Subsidiary has adequate resources, including the proceeds of the Placing and Subscription, to continue in operational existence for the foreseeable future and for at least one year from the date of this historical financial information. For these reasons, they continue to adopt the going concern basis in preparing the Subsidiary's historical financial information.

(c) ***New standards, amendments and interpretations***

The following new standards have not been early adopted in this historical financial information:

- IFRS 9 "Financial instruments" effective 1 January 2019;
- IFRS 15 "Revenue from contracts with customers", effective 1 January 2019; and
- IFRS 16 "Leases", effective 1 January 2019.

The Subsidiary notes IFRS 15 Revenue from Contracts with Customers which is to be adopted for all accounting periods beginning on or after 1 January 2018. At this time, it is not practical to provide a reasonable estimate in relation to the effect of IFRS 15 until a detailed review has been completed.

In assessing any impact during the detailed review, the Subsidiary will consider the revenue streams and current recognition policies, as disclosed in note 2 (d) below, in relation to the move from the recognition of revenue on the transfer of risks and rewards to the transfer of control.

The Subsidiary also notes IFRS 16 *Leases* which takes effect and will be adopted in 2019. This IFRS will require the Subsidiary to recognise the lease on its premises as both an asset and a rental commitment in its statement of financial position. Details of Polarean, Inc's. future obligations are disclosed in note 23(b). The Directors have yet to assess the impact of IFRS 16 on the Subsidiary's financial information.

IFRS 9 is applicable retrospectively and includes revised requirements for the classification and measurement of financial instruments, as well as recognition and de-recognition requirements for financial instruments. Key changes to accounting requirements under IFRS 9 which may be relevant to the Subsidiary include the requirement to apply a new impairment model based on expected loss in recognising impairment of financial assets including trade and other Receivables. This may result in the recognition of additional impairment losses against the carrying values of these financial assets, at a point in time which is earlier than under the current accounting policies.

(d) ***Revenue recognition***

Sale of goods

Revenue comprises the fair value of the sale of goods to external customers, net of applicable sales tax, rebates, promotions and returns. Revenue is recognised on the sale of goods when the significant risks and rewards of ownership of the goods have passed to the buyer and the amount of revenue can be measured reliably. Revenue on goods delivered is recognised when the customer accepts delivery and on services when those services have been rendered.

Rendering of services

Revenue from a contract to provide parts and services is recognised in the period in which the services are provided in accordance with the stage of completion of the contract when all the following conditions are satisfied:

- the amount of revenue can be measured reliably;
- is it probable that the Subsidiary will receive the consideration due under the contract;
- the stage of completion of the contract at the end of the reporting period can be measured reliably; and
- the costs incurred and the costs to complete the contract can be measured reliably.

Any unexpired portion of service contract or payment received in advance in respect of service contracts either partially completed or not started, are included in the deferred income and released over their remaining term.

Grant revenue

Grants are not recognised until there is a reasonable assurance that the Subsidiary will comply with the conditions attaching to them and that the grants will be received. Grants are treated as deferred income and released to the income statement on the achievement of the relevant performance criteria.

(e) ***Property, plant and equipment***

Owned assets

Items of property, plant and equipment are stated at cost or deemed cost less accumulated depreciation and impairment losses. Cost includes the original purchase price of the asset and the

costs attributable to bringing the asset to its working condition for its intended use. When parts of an item of property, plant and equipment have different useful lives, those components are accounted for as separate items of property, plant and equipment.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Subsidiary and the cost of the item can be measured reliably.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the income statement.

Depreciation

Depreciation is charged to profit or loss on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. The estimated useful lives are as follows:

- computer and IT equipment – 33 per cent. straight line
- leasehold improvements – 3–4 per cent. straight line
- laboratory equipment – 20 per cent. straight line

The residual values, useful lives and depreciation methods are reviewed, and adjusted if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised within" other operating income" in the statement of income.

(f) ***Intangible Assets***

Patents and related rights which are acquired through a business combination, are assessed by reviewing their net present value of future cash flows. Patents are currently amortised over their useful life, not exceeding 10 years.

Internally generated intangible assets – research and development costs are costs incurred in research activities are recognised as an expense in the period in which they are incurred. An internally generated intangible asset arising from the development of commercial technologies is recognised only if all of the following conditions are met:

- it is probable that the asset will create future economic benefits;
- the development costs can be measured reliably;
- technical feasibility of completing the intangible asset can be demonstrated;
- there is the intention to complete the asset and use or sell it;
- there is the ability to use or sell the asset; and
- adequate technical, financial and other resources to complete the development and to use or sell the asset are available.

At this time the Directors consider that the Subsidiary does not meet all of those conditions and development costs are therefore recorded as expense in the period in which the cost is incurred.

(g) ***Inventory***

Inventories are measured at the lower of cost and net realisable value. The cost of inventories is based on the weighted average cost principle and includes expenditure incurred in inventories, adjusted for rebates, and other costs incurred in bringing them to their existing location.

(h) ***Impairment of non-financial assets***

Non-financial assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable

amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are considered at the lowest levels for which there are separately identifiable cash flows (cash-generating units).

Non-financial assets other than goodwill that suffered impairment are reviewed for possible reversal of the impairment at each reporting date.

(i) ***Financial assets***

Classification

The Subsidiary classifies its financial assets as loans and receivables, or as available-for-sale financial assets. The classification depends on the purpose for which the investments were acquired. Management determines the classification of its investments at initial recognition.

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments. They are initially recognised at fair value, and are subsequently stated at amortised cost using the effective interest method.

Impairment of financial assets

Impairment provisions are recognised when there is objective evidence (such as significant financial difficulties on the part of the counterparty or default or significant delay in payment) that the Subsidiary will be unable to collect all of the amounts due under the terms receivable, the amount of such a provision being the difference between the net carrying amount and the present value of the future expected cash flows associated with the impaired asset.

(j) ***Cash and cash equivalents***

Cash and cash equivalents comprise cash balances and call deposits with an original maturity of three months or less.

(k) ***Financial liabilities***

Trade and other payables

Trade and other payables are initially recognised at fair value and subsequently measured at amortised cost. Accounts payable are classified as current liabilities if payment is due within one year or less. If not, they are presented as non-current liabilities.

Convertible debt

The proceeds received on issue of the Subsidiary's convertible debt are allocated into their liability and equity components. The amount initially attributed to the debt component equals the discounted cash flows using a market rate of interest that would be payable on a similar debt instrument that does not include an option to convert. Subsequently, the debt component is accounted for as a financial liability measured at amortised cost until extinguished on conversion or maturity of the bond. The remainder of the proceeds is allocated to the conversion option and is recognised in the "Other equity" within shareholders' equity, net of income tax effects.

(l) ***Borrowings***

Borrowings are recognised initially at fair value, net of transaction costs incurred. Borrowings are subsequently carried at amortised cost; any difference between the proceeds (net of transaction costs) and the redemption value is recognised in the income statement over the period of the borrowings using the effective interest method.

Borrowings are de-recognised from the statement of financial position when the obligation specified in the contract is discharged, is cancelled or expires. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration

paid, including any non-cash assets transferred or liabilities assumed, is recognised in the income statement as other operating income or finance costs.

Borrowings are classified as current liabilities unless the Subsidiary has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period.

(m) ***Employee benefits: pension obligations***

The Subsidiary operates a defined contribution plan. A defined contribution plan is a pension plan under which the Subsidiary pays fixed contributions into a separate entity. The Subsidiary has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods.

The Subsidiary has no further payment obligations once the contributions have been paid. The contributions are recognised as employee benefit expense when they are due. Prepaid contributions are recognised as an asset to the extent that a cash refund or a reduction in the future payments is available.

(n) ***Provisions***

A provision is recognised in the statement of financial position when the Subsidiary has a present legal or constructive obligation as a result of a past event, and it is probable that an outflow of economic benefits will be required to settle the obligation. If the effect is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, when appropriate, the risks specific to the liability. The increase in the provision due to the passage of time is recognised in finance costs.

(o) ***Share capital***

Ordinary shares are classified as equity. There are various classes of ordinary shares in issue, as detailed in note 18. Incremental costs directly attributable to the issue of new shares are shown in share premium as a deduction from the proceeds.

(p) ***Net finance costs***

Finance costs

Finance costs comprise interest payable on borrowings, direct issue costs, dividends on preference shares and foreign exchange losses, and are expensed in the period in which they are incurred.

Finance income

Finance income comprises interest receivable on funds invested, and foreign exchange gains.

Interest income is recognised in the income statement as it accrues using the effective interest method.

(q) ***Leases***

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

Assets held under finance leases are recognised as assets of the Subsidiary at their fair value, or, if lower, at the present value of the minimum, lease payments, each determined at the inception of the lease. The corresponding liability to the lessor is included in the statement of financial position as a finance lease obligation. Lease payments are apportioned between finance expenses and reduction of the lease obligation so as to achieve a constant rate of interest on the remaining balance of the liability. Finance expenses are recognised immediately in the income statement, unless they are directly attributable to qualifying assets, in which case they are capitalised in accordance with the Subsidiary's general policy on borrowing costs (see below). Contingent rentals are recognised as expenses in the periods in which they are incurred.

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. The costs associated with operating leases are taken to the income statement on an accruals basis over the period of the lease.

(r) ***Income tax***

Income tax for the years presented comprises current and deferred tax. Income tax is recognised in the income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity. Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the statement of financial position date, and any adjustment to tax payable in respect of previous years.

Deferred tax is recognised on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts.

The following temporary differences are not recognised if they arise from (a) the initial recognition of goodwill; and (b) for the initial recognition of other assets or liabilities in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the statement of financial position date.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes assets and liabilities relate to income taxes levied by the same taxation authority on either the taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

2. CRITICAL ACCOUNTING JUDGEMENTS AND ESTIMATES

The preparation of the Subsidiary's historical financial information under IFRS as endorsed by the EU requires the directors to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities. Estimates and judgements are continually evaluated and are based on historical experience and other factors including expectations of future events that are believed to be reasonable under the circumstances. Actual results may differ from these estimates.

The directors consider that the following estimates and judgements are likely to have the most significant effect on the amounts recognised in the financial information.

Carrying value of intangible assets, property, plant and equipment

In determining whether there are indicators of impairment of the Subsidiary's intangible assets, the directors take into consideration various factors including the economic viability and expected future financial performance of the asset and when it relates to the intangible assets arising on a business combination, the expected future performance of the business acquired.

3. SEGMENT ANALYSIS

IFRS 8 requires operating segments to be identified on the basis of internal reports about components of the Subsidiary that are regularly reviewed by the chief operating decision maker (which takes the form of the Board of Directors) as defined in IFRS 8, in order to allocate resources to the segment and to assess its performance.

The chief operating decision maker has determined that Polarean has one operating segment, the development and commercialisation of gas polariser devices and ancillary instruments. Revenues are reviewed based on the products and services provided: Polarisers, Parts and Upgrade, Service and Other revenue.

The Company operates in Canada, Germany, the United Kingdom and the United States of America. Revenue by origin of geographical segment for all entities in the Company is as follows:

Revenue

	2014 *US$*	*2015* *US$*	*2016* *US$*
Canada	26,958	29,454	5,269
Germany	41,165	48,435	–
United Kingdom	62,338	60,429	38,433
United States of America	834,967	764,021	836,943
	965,428	902,339	880,645

Non-current assets

	2014 *US$*	*2015* *US$*	*2016* *US$*
United States of America	47,352	37,360	38,946
	47,352	37,360	38,946

Product and services revenue analysis

Revenue

	2014 *US$*	*2015* *US$*	*2016* *US$*
Polarisers	705,845	593,410	600,000
Parts & Upgrade	13,065	85,216	46,022
Service	60,542	191,881	131,866
Other revenue	185,976	31,832	102,757
	965,428	902,339	880,645

Management measures revenues by reference to the Company's core services and products and related services, which underpin such income.

4. EMPLOYEES AND DIRECTORS

(a) ***Staff costs for the Subsidiary during the year:***

	2014 *US$*	*2015* *US$*	*2016* *US$*
Wages and salaries	141,929	308,186	493,821
Social security costs	17,676	–	–
Short term non-monetary benefit	–	6,367	–
	159,605	314,553	493,821

	2014 *No.*	*2015* *No.*	*2016* *No.*
Average monthly number of persons employed (including directors)	4	6	5
	4	6	5

(b) ***Key management compensation***

The following table details the aggregate compensation paid in respect of the members of the board of directors.

	2014 *US$*	*2015* *US$*	*2016* *US$*
Salaries and fees	99,600	94,200	248,438
	99,600	94,200	248,438

Key management personnel include all directors who together have authority and responsibility for planning, directing, and controlling the activities of the Subsidiary. Two directors were in the Subsidiary's defined contribution pension scheme during the periods above.

5. OPERATING PROFIT

Operating profit is stated after charging:

	2014 *US$*	*2015* *US$*	*2016* *US$*
Depreciation			
– Owned plant and equipment	8,141	5,392	4,387
– Leased plant and equipment	–	–	360
Amortisation of other intangible assets	4,600	4,600	4,600
Research expenses	269,828	162,975	145,443
Operating lease costs	44,439	52,838	59,984
Auditor remuneration (note 8)	3,500	4,850	24,838

6. NET FINANCE COSTS

	2014 *US$*	*2015* *US$*	*2016* *US$*
Interest income	88	590	147
Total finance income	88	590	147
Finance costs on loans	37,777	159,902	4,320
Total finance costs	37,777	159,902	4,320

7. AUDITOR REMUNERATION

The Subsidiary (including its subsidiaries) obtained the following services from the Subsidiary's auditors at costs as detailed below:

	2014 *US$*	*2015* *US$*	*2016* *US$*
Fee payable to Subsidiary's auditor and its associates for the audit of its financial statements	3,500	4,850	24,838
Fees payable to Subsidiary's auditor and its associates for other services:	–	–	–
	3,500	4,850	24,838

8. LOSS PER SHARE

The basic earnings per share is based on a loss for the year attributable to equity holders of the Parent Subsidiary of US$1,059,713 (2015: US$1,070,699 2014: US$109,398) and the weighted average number of shares in issue for the year of 890,244 (2015: 717,110, 2014: 627,923).

For diluted loss per share, the weighted average number of ordinary shares in issue is adjusted to assume conversion of all potential dilutive warrants and convertible loans over ordinary shares. Potential ordinary shares resulting from the exercise of warrants and the conversion of convertible loans have an anti-dilutive effect due to the Company being in a loss position. As a result, diluted loss per share is disclosed as the same value as basic loss per share.

9. TAXATION

There were no charges to current corporate taxation due to the losses incurred by the Subsidiary in the period. No deferred tax assets have been recognised due to the uncertainty of reversal being dependant on future taxable profits.

Income taxes computed at the statutory federal income tax of 34 per cent. (2015: 34 per cent., 2014: 35 per cent.) and the state income tax of 3.30 per cent. (2015: 3.30 per cent., 2014: 3.3 per cent.)

	2014 *US$*	*2015* *US$*	*2016* *US$*
Loss on ordinary activities before tax	(109,398)	(1,070,699)	(1,059,713)
Loss on ordinary activities multiplied by the rate of corporation tax in the US as above	(36,189)	(364,038)	(370,900)
Effects of:			
Expenses not deductible			
Unrelieved tax losses carried forward	36,189	364,038	370,900
Total taxation charge/(credit)	–	–	–

Deferred tax assets and liabilities are offset where the Subsidiary has a legally enforceable right to do so.

The Tax Reform Act of 1986 contains provisions which limit the ability to utilise the net operating loss carryforwards in the case of certain events including significant changes in ownership interests. If the Subsidiary's net operating loss carryforwards are limited and the Subsidiary has taxable income which exceeds the permissible yearly net operating loss carryforward, the Subsidiary would incur a federal income tax liability even though net operating loss carryforwards would be available in future years.

10. PROPERTY, PLANT AND EQUIPMENT

	Leasehold improvements US$	*Furniture and equipment US$*	*Computers and IT equipment US$*	*Total US$*
Cost				
At 1 January 2014	–	19,433	2,252	21,685
Additions	–	–	5,980	5,980
At 31 December 2014	–	19,433	8,232	27,665
Depreciation				
At 1 January 2014	–	7,144	1,189	8,333
Charge for the year	–	6,892	1,249	8,141
At 31 December 2014	–	14,036	2,438	16,474
Net book amount				
At 31 December 2014	–	5,397	5,794	11,191
Cost				
At 1 January 2015	–	19,433	8,232	27,665
Additions	–	–	–	–
At 31 December 2015	–	19,433	8,232	27,665
Depreciation				
At 1 January 2015	–	14,036	2,438	16,474
Charge for the period	–	3,086	2,306	5,392
At 31 December 2015	–	17,122	4,744	21,866
Net book amount				
At 31 December 2015	–	2,311	3,488	5,799
Cost				
At 1 January 2016	–	19,433	8,232	27,665
Additions	2,695	8,238	–	10,933
At 31 December 2016	2,695	27,671	8,232	38,598
Depreciation				
At 1 January 2016	–	17,122	4,744	21,866
Charge for the period	360	2,394	1,993	4,747
At 31 December 2016	360	19,516	6,737	26,613
Net book amount				
At 31 December 2016	2,335	8,155	1,495	11,985

11. INTANGIBLE ASSETS

	Patent *US$*	*Total* *US$*
Cost		
At 1 January 2014	46,000	46,000
Additions at cost	–	–
At 31 December 2014	46,000	46,000
Accumulated amortisation		
At 1 January 2014	9,200	9,200
Charge for the year	4,600	4,600
At 31 December 2014	13,800	13,800
Net book amount		
At 31 December 2014	32,200	32,200
Cost		
At 1 January 2015	46,000	46,000
Additions at cost	–	–
At 31 December 2015	46,000	46,000
Accumulated amortisation		
At 1 January 2015	13,800	13,800
Charge for the year	4,600	4,600
At 31 December 2015	18,400	18,400
Net book amount		
At 31 December 2015	27,600	27,600
Cost		
At 1 January 2016	46,000	46,000
Additions at cost	–	–
At 31 December 2016	46,000	46,000
Accumulated amortisation		
At 1 January 2016	18,400	18,400
Charge for the year	4,600	4,600
At 31 December 2016	23,000	23,000
Net book amount		
At 31 December 2016	23,000	23,000

12. TRADE AND OTHER RECEIVABLES

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Amounts falling due within one year:			
Trade receivables	364,835	113,933	11,259
Prepayments and other receivables	14,594	20,972	4,155
Called up share capital not paid	620	620	620
	380,049	135,525	16,034

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Amounts falling due after one year:			
Deposit	3,961	3,961	3,961
	3,961	3,961	3,961

The Subsidiary has no receivables past due or considered to be impaired at the balance sheet date.

All receivables are denominated in US Dollars.

13. INVENTORY

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Component parts	275,053	402,064	321,661
	275,053	402,064	321,661

14. CASH AND CASH EQUIVALENTS

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Cash at bank and in hand	112,834	912,399	97,847
	112,834	912,399	97,847

All bank balances are denominated in US Dollars.

15. CALLED UP SHARE CAPITAL

	2014	*2015*	*2016*
	No.	*No.*	*No.*
Allotted and called up			
Ordinary shares of no par value each	627,923	627,923	627,923
Series A preference shares of no par value each	–	262,321	262,321

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Share premium			
Ordinary shares of no par value each	2,442	2,442	2,442
Series A preference shares of no par value each	–	1,836,261	1,836,261
	2,442	1,838,703	1,838,703

Ordinary Shares

Of the ordinary shares, US$620 of these are unpaid.

In addition to the allotted ordinary share capital the authorised ordinary share capital of the Subsidiary includes 4,372,077 ordinary shares of no par value each that are authorised but not issued.

Preference Shares

The purchase price for the Series A preference shares is US$7.922 and each share is immediately convertible into one ordinary share and mandatorily convertible in a public offering with total proceeds of at the least US$15,000,000. The Series A preference shares contain a "down-round" conversion feature whereby the conversion rate is adjusted downward if additional ordinary shares are issued for a price per share than the Series A preference share price. The "down-round" conversion feature was determined to be clearly and closely related to the host instrument and thus not accounted for as a bifurcated derivative. In addition, each outstanding share of Series A preference shares contains a right of first refusal whereby the Subsidiary grants each holder of Series A preference shares the right to purchase up to their *pro rata* share of any new securities issued by the Subsidiary.

On August 24 2015, 168,308 shares of Series A preference shares were sold for gross proceeds of US$1,333,336. In accordance with a letter agreement with the purchaser of the 168,308 shares, the Subsidiary entered into a purchase commitment with the purchaser to purchase at least 50 per cent. of the Subsidiary's Xenon gas requirements at prices competitive to other suppliers. In conjunction with and as a result of the issuance of the Series A shares, the convertible notes and related accrued interest were mandatorily converted into 94,013 shares of Series A preference shares pursuant to the terms of the convertible notes.

At 31 December 2015 and 2016, 262,321 Series A preference shares were issued and outstanding and were convertible into 262,321 ordinary shares. There were no preference shares at 31 December 2014.

Voting rights

The preference shares generally vote together as a single class with ordinary shares on an as-converted basis.

Dividends

Each outstanding preference share bears cumulative annual cash dividends of US$0.47532 per share payable only if and when declared by the Board. The Subsidiary shall not pay dividends on any other class of shares unless the cumulative dividends on the Series A preference shares have been paid. No dividends have been paid or accrued in 2014, 2015 or 2016. As the preference shares are entitled to dividends which are accrued when insufficient profits are available, they have been classified as equity as opposed to a financial instrument.

Directors' beneficial interests in shares of the Company:

	2014 *Number*	*2015* *Number*	*2016* *Number*
D. Deaton	–	–	–
B. Driehuys	440,000	449, 401	449,401
J. Sudol	180,000	180,000	232,265
	620,000	629,401	681,666

The shareholdings noted above include those shares held by connected persons of the individual director.

Directors' beneficial interests in options to subscribe for additional shares of the Company:

	2014 Number	*2015 Number*	*2016 Number*
D. Deaton	10,000	10,000	10,000
B. Driehuys	–	30,000	30,000
J. Sudol	–	–	–
	10,000	40,000	40,000

The option holdings noted above include those options held by connected persons of the individual director.

Directors' beneficial interests in warrants to subscribe for additional shares of the Company:

	2014 Number	*2015 Number*	*2016 Number*
D. Deaton	–	–	–
B. Driehuys	5,556	5,556	5,556
J. Sudol	50,000	50,000	50,000
	55,556	55,556	55,556

The warrant holdings noted above include those warrants held by connected persons of the individual director.

16. RESERVES

Share premium

Includes all current and prior period premiums on shares allotted, less the associated costs.

Other equity

Includes the value of conversion rights on convertible loans.

Retained losses

Includes all current and prior year retained profits and losses.

17. SHARE BASED PAYMENTS

Share options

On 1 December 2011, the Board of Directors ("Board") approved the 2011 Stock Option Plan (the "Plan"). The Plan is administered by the Board who designates eligible participants, approves the number of options, and terms of options granted from time to time. As of 31 December 2016, the maximum number of option shares issuable under the Plan is 240,000. The exercise price of options issued under the Plan shall not be less than the fair value of the underlying shares on the date of grant as determined by the Board. In 2014, 2015 and 2016 options were issued with an exercise price less than the fair value of the underlying share on the date of grant. Vesting terms vary but options generally vest ratably over four years and are exercisable for a period of ten years from the date of grant.

Management uses the Black Scholes option pricing model to determine the value of options.

Management uses the "simplified method" to estimate the expected term and uses a composite volatility consisting of the Subsidiary's historical volatility and the historical volatility of similar publicly traded companies.

Using the Black Scholes option pricing model, management has determined that the options issued in 2014, 2015 and 2016 have a weighted average value of US$3.27, US$3.45 and US$3.66 per share, respectively. Total share based payment expense for the share options is 7,783 for the 2014 options, US$175,796 for the 2015 options and is US$109,891 for the 2016 options. The share based payment expense will be recognised over the service periods ranging from immediate vesting to four years. For the years ended 31 December 2014, 31 December 2015 and 31 December 2016, the Subsidiary recognised US$11,069, US$50,213 and US$57,082, respectively, as a share based payment expense.

The assumptions used to calculate the fair value of options are as follows:

	2014	*2015*	*2016*
Expected dividend yield	–	–	–
Risk-free interest rate	2.29%	1.67%	2.17%
Expected life in years	10	7	8
Expected volatility	57%	116%	116%

The following is an analysis of options issued and outstanding to purchase shares in the Subsidiary:

	Total Options No.	*Weighted Average Exercise Price US$*
Total options outstanding at 1 January 2014	148,832	0.11
Granted	24,000	0.11
Expired/cancelled	(25,000)	0.11
Total options outstanding at 31 December 2014	149,832	0.11
Granted	51,000	0.89
Expired/cancelled	(18,875)	0.11
Total options outstanding at 31 December 2015	181,957	0.33
Granted	30,000	0.90
Expired/cancelled	5,625	0.11
Total options outstanding at 31 December 2016	217,582	0.40

Share warrants

On 1 December 2011, the Subsidiary issued share warrants for an aggregate of 20,000 ordinary in the Subsidiary ("2011 Warrants") in exchange for legal services. The exercise price of the 2011 Warrants is US$0.001 per share and vested immediately and are exercisable for a period of 10 years after issuance. The 2011 Warrants are exercisable only for cash and subject to customary antidilution provisions.

On 3 June 2013, the Subsidiary issued share warrants for an aggregate of 31,917 shares in the Subsidiary ("2013 Warrants") in exchange for consulting services. The exercise price of the 2013 Warrants is US$0.11 per share and vested ratably over 18 months and are exercisable for a period of 10 years after issuance. The 2013 Warrants are exercisable only for cash and subject to customary antidilution provisions.

On 21 April 2014, the Subsidiary issued shares warrants for an aggregate of 55,556 shares in the Subsidiary ("April 2014 Warrants") in exchange for extending the maturity date of the 2012 convertible notes from 31 December 2013 to 31 December 2015. The strike price of the April 2014 Warrants was US$0.01 per share and vested immediately and were exercisable for a period of 10 years after issuance. The April 2014 Warrants are exercisable only for cash and subject to customary antidilution provisions.

On 3 December 2014, the Subsidiary issued common stock warrants for an aggregate of 72,914 shares of the Subsidiary's common stock ("December 2014 Warrants") in exchange for consulting services. The strike price of the December 2014 Warrants was US$0.20 per share and the December 2014 Warrants

vest ratably over 48 months and are exercisable for a period of 10 years after issuance. The December 2014 Warrants are exercisable only for cash and subject to customary antidilution provisions.

18. PROVISION FOR CONTINGENT CONSIDERATION

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Provision for contingent consideration	27,000	311,000	316,000
	27,000	311,000	316,000

On 19 December 2011, the Subsidiary entered into an agreement with a third party to purchase various assets, including patents, trademarks, a license agreement, and physical inventory. As consideration for this transaction, the Subsidiary agreed to pay 5 per cent. of gross revenue on clinical sales of products that are sold related to the patents purchased, for a period of seven years. As of 31 December 2014, 31 December 2015 and 31 December 2016 the fair value of this contingent consideration was US$27,000, US$87,000 and US$134,000, respectively. This liability is valued based on a probability weighted expected return method using projected future cash flows.

The Subsidiary incurred losses on the revaluation of its contingent consideration of US$284,000 and US$5,000 for the years ended 31 December 2015 and 31 December 2016, respectively. No losses were incurred for the year ended 31 December 2014.

19. DEFERRED REVENUE

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Arising from service contracts	166,573	178,299	77,180
Current	87,998	129,100	66,923
Non- Current	78,575	49,199	10,257
	166,573	178,299	77,180

The Directors consider the carrying value of all financial liabilities to be equivalent to their fair value.

20. TRADE AND OTHER PAYABLES

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Trade payables	59,303	155,983	151,725
Accruals	237,091	89,500	160,790
Royalties	150,000	250,000	250,000
Deposits from customers	332,053	–	–
	778,447	495,483	562,515

Trade and other payables comprise amounts outstanding for trade purchases and on-going costs. All trade and other payables are due in less than a year. All balances are denominated in US Dollars.

21. BORROWINGS AND LOANS

	2014 *US$*	*2015* *US$*	*2016* *US$*
Loans payable	394,000	144,000	104,541
	394,000	144,000	104,541

In January 2012, the Subsidiary issued convertible promissory notes in the aggregate principal amount of US$250,000 to certain related parties. These notes bear interest at 10 per cent. per annum. All principal and interest on the notes were due and payable on the earliest to occur of: (i) the closing of a Qualified Financing; (ii) 31 December 2015; or (iii) the sale of all or substantially all of the stock or assets of the Subsidiary or a consolidation or merger of the Subsidiary with or into any other entity or entities in which the stockholders of the Subsidiary, immediately prior to such transaction, own less than fifty per cent. of the voting power or capital stock of the surviving entity. In the event the Subsidiary consummates an equity financing in which the Subsidiary issues and sells shares of a newly created series of preferred stock prior to the maturity date, the entire unpaid principal and interest outstanding under these notes may be converted into preferred stock at a price per share equal to 80 per cent. of the price per share at which such shares are issued and sold to other investors in such Qualified Financing.

In June 2013, an unsecured subordinated promissory note was issued to a related party for a principal amount of US$8,000 per month for 18 months for a total of US$144,000. The note bears interest at 3 per cent. per annum. All principal and outstanding interest on the note was due 3 June 2016. The balance outstanding is US$104,541 and US$144,000 as of 31 December 2016 and 2015, respectively.

In March 2015, additional convertible promissory notes in the aggregate principal amount of US$250,000 were issued to certain related parties. These notes bear interest at 6 per cent. per annum with a maturity date of 31 March 2017. In the event that the Subsidiary issues and sells shares of its capital stock to investors on or before the date of the repayment in full of these notes, then the outstanding balance of these notes and any unpaid accrued interest shall automatically convert in whole without any further action by the note holders into shares of such capital stock sold in such Qualified Financing at a conversion price equal to 80 per cent. of the per share price paid by the investors and otherwise on the same terms and conditions as given to investors.

In August 2015, the principal on the 2012 and 2015 notes plus accrued interest totalling US$659,877 were repaid with 94,013 shares of the Subsidiary's Series A preferred stock. This August 2015 event, triggered the beneficial conversion feature for a debt discount of US$62,500 and debt extinguishment of US$37,981. Interest expense for the years ended 31 December 2014, 31 December 2015 and 31 December 2016 was US$37,777, US$4,320 and 121,924 respectively.

22. COMMITMENTS AND CONTINGENCIES

Periodically, the Subsidiary may be involved in claims and other legal matters. The Subsidiary records accruals for loss contingencies to the extent that management concludes that it is probable that a liability has occurred and the amount of the related loss can be reasonably estimated. No such accrual was deemed necessary for the years ended 31 December 2014, 31 December 2015 and 31 December 2016. Legal fees and other expenses related to litigation are expensed as incurred and included in general and administrative expenses.

(a) ***Capital commitments***

Royalties – The Subsidiary has entered into three agreements requiring minimum royalty payments. One agreement requires a payment of 5 per cent. of gross revenue on clinical sales during the payment period beginning on the date a product is first commercially sold and ending seven years from that date. A separate agreement requires payments of another 0.25 per cent. of net sales of machines and 20 per cent. of all non-royalty income beginning in 2016. Additionally, beginning five years after the effective date of 1 February 2021, there are minimum yearly royalties of US$5,000. A third agreement requires a payment of US$50,000 each year starting in 2012. A portion of these payments will be made to the founder of Polarean, Inc.

(b) ***Operating lease commitments***

The Subsidiary has leased various properties under non-cancellable operating lease agreements.

Operating Leases – Effective 30 January 2012, the Subsidiary entered into a lease agreement with a 40-month term with payments ranging from US$3,961 to US$5,907 per month. This lease agreement was extended through amendments, with a new effective termination date of 30 September 2021. The Subsidiary incurred rent expense for the years ended 31 December 2016 and 2015 of US$59,984 and US$52,838, respectively.

The future aggregate minimum lease payments under non-cancellable operating leases are as follows:

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Within 1 year	51,923	53,490	63,713
Later than 1 year and less than 5 years	–	–	257,553
After 5 years	–	–	–
	51,923	53,490	321,266

The operating lease commitment for the rental of the property is calculated on a straight-line basis over the length of the lease.

23. FINANCIAL INSTRUMENTS – CLASSIFICATION AND MEASUREMENT

Financial assets

Financial assets measured at amortised cost comprise cash, trade receivables and other receivables, as follows:

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Trade receivables	368,796	117,894	15,220
Other receivables	14,594	20,972	4,155
Cash at bank	112,834	912,399	97,847
	496,224	1,051,265	117,222

Financial liabilities

Financial liabilities measured at amortised cost comprise trade payables, accruals, royalties, borrowings, provision of contingent consideration and deposits from customers, as follows:

	2014	*2015*	*2016*
	US$	*US$*	*US$*
Trade payables	59,303	155,983	151,725
Accruals	159,728	89,500	160,790
Royalties	150,000	250,000	250,000
Borrowing	394,000	144,000	104,541
Provision for contingent consideration	27,000	87,000	134,000
Deposits from customers	332,053	–	–
	1,122,084	726,483	801,056

24. FINANCIAL INSTRUMENTS – RISK MANAGEMENT

Financial risk management

The Subsidiary's activities expose it to a variety of financial risks: market risk (including cash flow interest rate risk), credit risk and liquidity risk.

Risk management is carried out by the board of directors. The Subsidiary uses financial instruments to provide flexibility regarding its working capital requirements and to enable it to manage specific financial risks to which it is exposed.

(a) ***Market risk***

i. *Interest rate risk*

The interest rate profile of the Subsidiary's borrowings is shown below:

Interest rate profile of interest bearing borrowings

	2014		*2015*		*2016*	
	Debt US$	*Interest rate*	*Debt US$*	*Interest rate*	*Debt US$*	*Interest rate*
Fixed rate borrowings						
Related party loans	394,000	3% to 10%	144,000	3%	104,541	3%
Weighted average cost of fixed rate borrowings	394,000	7%	144,000	3%	104,541	3%

Details of the above borrowings can be found in note 22 above.

Interest rate sensitivity analysis

As the interest rates on shareholders loans are fixed, interest rate risk is considered to be very low.

(b) ***Liquidity risk***

A maturity analysis of the Subsidiary's Shareholder borrowings is shown below:

	2014 US$	*2015 US$*	*2016 US$*
Less than one year	169,000	265,291	108,861
One to two years	–	–	–
Two to five years	–	–	–
Total including interest cash flows	169,000	265,921	108,861
Less: interest cash flows	(25,000)	(121,921)	(4,320)
Total principal cash flows	144,000	144,000	104,541

Capital risk management

The Subsidiary is both equity and debt funded and these two elements combine to make up the capital structure of the business. Equity comprises share capital, share premium and retained losses and is equal to the amount shown as 'Equity' in the statement of financial position. Debt comprises various items which are set out in further detail above and in note 17.

The Subsidiary's current objectives when maintaining capital are to:

- safeguard the Subsidiary's ability as a going concern so that it can continue to pursue its growth plans;
- provide a reasonable expectation of future returns to shareholders; and
- maintain adequate financial flexibility to preserve its ability to meet financial obligations, both current and long term.

The Subsidiary sets the amount of capital it requires in proportion to risk. The Subsidiary manages its capital structure and makes adjustments to it in the light of changes in economic conditions and the risk characteristics of underlying assets. In order to maintain or adjust the capital structure, the Subsidiary may issue new shares or sell assets to reduce debt.

During the years ended 31 December 2014, 31 December 2015 and 31 December 2016 the Subsidiary's strategy remained unchanged.

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Subsidiary. In order to minimise the risk, the Subsidiary endeavours only to deal with companies which are demonstrably creditworthy and this, together with the aggregate financial exposure, is continuously monitored. The maximum exposure to credit risk is the value of the outstanding amount.

The Directors do not consider that there is any concentration of risk within either trade or other receivables. There are no impairments to trade or other receivables in each of the years presented.

25. RELATED PARTY TRANSACTIONS

In January 2012, the Subsidiary issued, to Bastiaan Driehuys and John Sudol, the founders of Polarean, Inc, convertible promissory notes in the aggregate principal amount of US$250,000. These notes bear interest at 10 per cent. per annum. All principal and interest on the notes were due and payable on the earliest to occur of: (i) the closing of a Qualified Financing; (ii) 31 December 2015; or (iii) the sale of all or substantially all of the stock or assets of the Subsidiary or a consolidation or merger of the Subsidiary with or into any other entity or entities in which the stockholders of the Subsidiary, immediately prior to such transaction, own less than fifty per cent. of the voting power or capital stock of the surviving entity. In the event the Subsidiary consummates an equity financing in which the Subsidiary issues and sells shares of a newly created series of preferred stock prior to the maturity date, the entire unpaid principal and interest outstanding under these notes may be converted into preferred stock at a price per share equal to 80 per cent. of the price per share at which such shares are issued and sold to other investors in such Qualified Financing.

In June 2013, an unsecured subordinated promissory note was issued to Technology Commercialization Group, for whom Ken West was a retained consultant, for a principal amount of US$8,000 per month for 18 months for a total of US$144,000. The note bears interest at 3 per cent. per annum. All principal and outstanding interest on the note was due 3 June 2016. The balance outstanding is US$104,541 and US$144,000 as of 31 December 2016 and 2015, respectively.

In March 2015, additional convertible promissory notes in the aggregate principal amount of US$250,000 were issued a number of individuals including Bastiaan Driehuys, John Sudol and Ken West. These notes bear interest at 6 per cent. per annum with a maturity date of 31 March 2017. In the event that the Subsidiary issues and sells shares of its capital stock to investors on or before the date of the repayment in full of these notes, then the outstanding balance of these notes and any unpaid accrued interest shall automatically convert in whole without any further action by the note holders into shares of such capital stock sold in such Qualified Financing at a conversion price equal to 80 per cent. of the per share price paid by the investors and otherwise on the same terms and conditions as given to investors.

In August 2015, the principal on the 2012 and 2015 notes plus accrued interest totalling US$659,877 were repaid with 94,013 shares of the Subsidiary's Series A preferred stock. This August 2015 event, triggered the beneficial conversion feature for a debt discount of US$62,500 and debt extinguishment of US$37,981. Interest expense for the years ended 31 December 2014, 31 December 2015 and 31 December 2016 was US$37,777, US$4,320 and US$121,924 respectively.

26. SUBSEQUENT EVENTS

On 30 May 2017, Polarean Merger-Sub Inc., a subsidiary of the Subsidiary, completed a merger process under which it acquired substantially all of the assets of m2m Imaging Corp ("m2m"), a portfolio company of Amphion Innovations plc engaged in the development of high performance MRI RF coils for the global research market, primarily in micro-imaging. By 2016 M2M had been inactive for several years due to an inability to raise funds. At the date of the merger the assets of M2M were its technology and patents. The merger was effected by way of court sanction in the process of which the Subsidiary acquired, through a special purpose entity, Polarean Merger Sub, Inc the assets of another special purpose entity, m2m Merger Sub, Inc, with m2m Merger Sub, Inc being the surviving entity. After the reporting date, on 1 September 2017, m2m Merger Sub, Inc was merged into the Subsidiary with the Subsidiary being the surviving entity, the effect being that m2m Merger Sub, Inc was collapsed and the Subsidiary had acquired the m2m assets.

As part of the arrangements for the merger 576,430 shares in the Subsidiary were issued to the former shareholders in m2m with the intention that all parties would exchange their stock in the Subsidiary for shares in the Company on a *pro rata* basis as soon as practicable.

The Directors consider the merger between the Subsidiary and m2m Acquisition, Inc as a consequence of which the Group acquired the exclusive worldwide rights to m2m's technology and patents is unlikely to meet the definition of an acquisition of a business as set out in IFRS3 and will therefore be accounted for as the acquisition of an asset or a group of assets that does not constitute a business.

IFRS3 requires that in such cases the acquirer shall identify and recognise the individual identifiable assets acquired (including those assets that meet the definition of, and recognition criteria for, intangible assets in IAS 38 Intangible assets) and to allocate the cost of the individual identifiable assets and liabilities on the basis of their relative fair values at the date of purchase. Such a transaction or event does not give rise to goodwill.

The provisional estimate of the fair value of the assets acquired under the merger arrangement of US$4,999,996 represents the aggregate estimated value of the financial obligations of the former m2m shareholders which were converted into equity in m2m prior to the merger agreement.

On 31 May 2017 the Subsidiary became a wholly owned subsidiary of the Company by way of a share for share exchange.

27. ULTIMATE CONTROLLING PARTY

As at 31 December 2016, the Subsidiary did not have any one identifiable controlling party.

28. NATURE OF THE FINANCIAL INFORMATION

The financial information presented above does not constitute statutory financial statements for the period under review.

SECTION (E) – UNAUDITED INTERIM FINANCIAL INFORMATION OF THE SUBSIDIARY

INCOME STATEMENT
For the six months ended 30 June 2017

	Note	*Six months ended 30 June 2017 (Unaudited) US$*	*Six months ended 30 June 2016 (Unaudited) US$*
Revenue	(4)	205,085	465,599
Cost of sales		(33,712)	(223,145)
Gross profit		171,373	242,454
Administrative expenses		(884,696)	(560,257)
Depreciation		(2,885)	(2,069)
Amortisation		(2,300)	(2,300)
Selling and distribution expenses		(15,474)	(15,566)
Other expenses		(671,383)	–
Operating loss		(1,405,365)	(337,738)
Finance charges		(7,160)	(2,132)
Loss before taxation		(1,412,525)	(339,870)
Taxation	(5)	–	–
Loss the year		(1,412,525)	(339,870)
Other comprehensive income		–	–
Total comprehensive loss the year		(1,412,525)	(339,870)
Loss per share attributable to the ordinary equity holders of the Subsidiary			
Basic and diluted (US Dollars per share)	(6)	(1.405)	(0.382)

STATEMENT OF FINANCIAL POSITION
As at 30 June 2017

	Note	*30 June 2017 (Unaudited) US$*	*31 Dec 2016 (Audited) US$*
Assets			
Non-current assets			
Property, plant and equipment		16,398	11,985
Intangible assets	(7)	5,020,696	23,000
Trade and other receivables	(8)	5,539	3,961
Total non-current assets		5,042,633	38,946
Current assets			
Trade and other receivables	(8)	22,209	16,034
Inventory	(9)	392,932	321,661
Cash and cash equivalents	(10)	1,712,073	97,847
Total current assets		2,127,214	435,542
Total assets		7,169,847	474,488
Equity and liabilities			
Equity			
Called up share capital	(11)	–	–
Share premium	(11)	7,695,993	1,838,703
Other equity		137,664	137,664
Share based payment reserve		292,172	238,172
Retained losses		(4,212,812)	(2,800,287)
Total equity		3,913,017	(585,748)
Non-current liabilities			
Provision for contingent consideration		316,000	316,000
Deferred revenue		36,152	10,257
Total non-current liabilities		352,152	326,257
Current liabilities			
Deferred revenue		18,353	66,923
Trade and other payables	(13)	521,720	562,515
Amounts owed to Polarean Imaging Plc		1,985,064	–
Borrowings and loans	(14)	379,541	104,541
Total current liabilities		2,904,678	733,979
Total liabilities		3,256,830	1,060,236
Total equity and liabilities		7,169,847	474,488

STATEMENT OF CHANGES IN EQUITY

	Share Capital US$	*Additional paid in capital US$*	*Other equity US$*	*Share based payment reserve US$*	*Retained losses US$*	*Total equity US$*
Balance at 1 January 2016	–	1,838,703	137,664	122,773	(1,740,574)	358,566
Comprehensive Income						
Loss for the period	–	–	–	–	(393,212)	(393,212)
Transactions with owners						
Share based payment expense	–	–	–	57,600	–	57,600
Balance at 30 June 2016	–	1,838,703	137,664	180,373	(2,133,786)	22,954
Balance at 1 July 2016	–	1,838,703	137,664	180,373	(2,133,786)	22,954
Comprehensive Income						
Loss for the period	–	–	–	–	(666,501)	(666,501)
Transactions with owners						
Share based payment expense	–	–	–	57,799	–	57,799
Balance at 31 December 2016	–	1,838,703	137,664	238 172	(2,800,287)	(585,748)
Balance at 1 January 2016	–	1,838,703	137,664	238,172	(2,800,287)	(585,748)
Comprehensive Income						
Loss for the period	–	–	–	–	(1,412,525)	(1,412,525)
Transactions with owners						
Share based payment expense	–	–	–	54,000	–	54,000
Issue of shares on m2m merger	–	4,999,996	–	–	–	4,999,996
Issue of shares – other	–	700,341	–	–	–	700,341
Write off of share issuance costs	–	156,953	–	–	–	156,953
Balance at 30 June 2017	–	7,695,993	137,664	292,172	(4,212,812)	3,913,017

STATEMENT OF CASH FLOWS
For the six months ended 30 June 2017

	Note	*Six months ended 30 June 2017 (Unaudited) US$*	*Six months ended 30 June 2016 (Unaudited) US$*
Loss before taxation		(1,412,515)	(393,212)
Adjustments for non-cash/non-operating items:			
Depreciation		2,884	2,065
Amortisation		2,300	2,300
Interest paid		2,160	2,160
Share based compensation		54,000	57,600
Write off of share issuance costs		156,953	–
		(1,194,218)	(329,087)
Changes in working capital:			
(Increase)/decrease in trade and other receivables		(7,753)	23,950
(Increase)/decrease/ in inventory		(71,271)	(21,002)
(Decrease)/increase in trade and other payables		(14,291)	193,452
(Decrease)/increase in deferred revenue		(22,675)	(65,035)
Cash inflow from operations		(115,990)	131,365
Taxation		–	–
Net cash outflow from operating activities		(1,310,208)	(197,722)
Cash flows from investing activities			
Purchase of property, plant and equipment		(7,298)	(14,829)
Net cash outflow from investing activities		(7,298)	(14,829)
Cash flows from financing activities			
Issue of notes and loans		275,000	9,286
Issue of shares		671,668	–
Advanced from parent undertaking		1,985,064	–
Interest paid		–	–
Interest received		–	–
Net cash outflow from financing activities		2,931,732	9,286
Net increase/(decrease) in cash and cash equivalents		1,614,226	(203,265)
Cash and cash equivalents beginning of period		97,847	912,399
Cash and cash equivalents at end of period		1,712,073	709,134

1. GENERAL INFORMATION

Polarean, Inc. (the "Subsidiary") is a company based in Durham, North Carolina developing next generation medical imaging technology. The Subsidiary's proprietary technology produces a contrast agent that vastly improves Magnetic Resonance Imaging ("MRI") pulmonary resolution and diagnostic capability. The Subsidiary was incorporated under the laws of the state of North Carolina on 6 October 2011.

2. BASIS OF PREPARATION AND SIGNIFICANT ACCOUNTING POLICIES

(a) ***Basis of preparation***

The unaudited interim financial information has been prepared in accordance with International Financial Reporting Standards as adopted by the European Union ("IFRS"), and with those parts of the Companies Act 2006 as applicable to companies reporting under IFRS.

This unaudited interim financial information is prepared in accordance with IFRS under the historical cost convention, as modified by the use of fair value for financial instruments measured at fair value. The historical financial information is presented in United States Dollars ("US$") except where otherwise indicated.

The principal accounting policies adopted in the preparation of the historical financial information are as set out in Section (D) of Part IV. The policies have been consistently applied to all the years presented, unless otherwise stated.

(b) ***Going concern***

This historical financial information relating to the Subsidiary has been prepared on the going concern basis.

The directors of Polarean, Inc. (the "Directors") have a reasonable expectation that the Subsidiary has adequate resources, including the proceeds of the Placing and Subscription, to continue in operational existence for the foreseeable future and for at least one year from the date of this historical financial information. For these reasons, they continue to adopt the going concern basis in preparing the Subsidiary's historical financial information.

3. CRITICAL ACCOUNTING JUDGEMENTS AND ESTIMATES

The preparation of the Subsidiary's historical financial information under IFRS as endorsed by the EU requires the Directors to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities. Estimates and judgements are continually evaluated and are based on historical experience and other factors including expectations of future events that are believed to be reasonable under the circumstances. Actual results may differ from these estimates.

The Directors consider that the following estimates and judgements are likely to have the most significant effect on the amounts recognised in the financial information.

Carrying value of intangible assets, property, plant and equipment

In determining whether there are indicators of impairment of the Subsidiary's intangible assets, the directors take into consideration various factors including the economic viability and expected future financial performance of the asset and when it relates to the intangible assets arising on a business combination, the expected future performance of the business acquired.

4. SEGMENT ANALYSIS

The chief operating decision maker has determined that Polarean has one operating segment, the development and commercialisation of gas polariser devices and ancillary instruments. Revenues are reviewed based on the products and services provided: Polarisers, Parts and Upgrade, Service Other revenue.

The Company operates in Canada, Germany, the United Kingdom and the United States of America. Revenue by origin of geographical segment for all entities in the Company is as follows:

Revenue

	Six months to 30 June 2017 US$	*Six months to 30 June 2016 US$*
Canada	–	–
Germany	–	–
United Kingdom	27,950	6,256
United States of America	177,135	459,343
	205,085	465,599

Non-current assets

	5,041,055	38,946
United States of America	5,041,055	38,946

Product and services revenue analysis

Revenue

	Six months to 30 June 2017 US$	*Six months to 30 June 2016 US$*
Polarisers	–	300,000
Parts & Upgrade	97,611	63,812
Other revenue	107,474	101,787
	205,085	465,599

Management measures revenues by reference to the Company's core services and products and related services, which underpin such income.

5. TAXATION

There were no charges to current corporate taxation due to the losses incurred by the Subsidiary in the period. No deferred tax assets have been recognised due to the uncertainty of reversal being dependant on future taxable profits.

6. LOSS PER SHARE

The basic loss per share is based on a loss for the year attributable to equity holders of the Subsidiary of US$1,412.525 (2016: US$339,870) and the weighted average number of shares in issue for the period of 1,005,652 (2016: 890,244).

For diluted loss per share, the weighted average number of ordinary shares in issue is adjusted to assume conversion of all potential dilutive warrants and convertible loans over ordinary shares. Potential ordinary shares resulting from the exercise of warrants and the conversion of convertible loans have an anti-dilutive effect due to the company being in a loss position. As a result, diluted loss per share is disclosed as the same value as basic loss per share.

7. INTANGIBLE ASSETS

	m2m technology US$	*Patent US$*	*Total US$*
Cost			
At 1 January 2016	–	46,000	46,000
Additions at cost of fair value	4,999,996	–	4,999,996
At 31 December 2016	4,999,996	46,000	5,045,996
Accumulated amortisation			
At 1 January 2016	–	23,000	23,000
Charge for the period	–	2,300	2,300
At 30 June 2017	–	25,300	25,300
Net book amount			
At 30 June 2017	4,999,996	20,700	5,020,696
At 31 December 2016	–	23,000	23,000

On 30 May 2017 Polarean Merger-Sub, Inc., a subsidiary of the Subsidiary, completed a merger process under which it acquired substantially all of the assets of m2m Imaging Corp ("m2m"), a portfolio company of Amphion Innovations plc engaged in the development of high performance MRI RF coils for the global research market, primarily in micro-imaging. By 2016 M2M had been inactive for several years due to an inability to raise funds. At the date of the merger the assets of M2M were its technology and patents. The merger was effected by way of court sanction in the process of which the Subsidiary acquired, through a special purpose entity, Polarean Merger Sub, Inc the assets of another special purpose entity, m2m Merger Sub, Inc, with m2m Merger Sub, Inc being the surviving entity. After the reporting date, on 1 September 2017, m2m Merger Sub, Inc was merged into the Subsidiary with the Subsidiary being the surviving entity, the effect being that m2m Merger Sub, Inc was collapsed and the Subsidiary had acquired the m2m assets.

As part of the arrangements for the merger 576,430 shares in the Subsidiary were issued to the former shareholders in m2m with the intention that all parties would exchange their stock in PI for shares in the Company on a *pro rata* basis as soon as practicable.

The Directors consider the merger between the Subsidiary and m2m Acquisition, Inc as a consequence of which the group acquired the exclusive worldwide rights to m2m's technology and patents is unlikely to meet the definition of an acquisition of a business as set out in IFRS3 and will therefore be accounted for as the acquisition of an asset or a group of assets that does not constitute a business.

IFRS3 requires that in such cases the acquirer shall identify and recognise the individual identifiable assets acquired (including those assets that meet the definition of, and recognition criteria for, intangible assets in IAS 38 Intangible assets) and to allocate the cost of the individual identifiable assets and liabilities on the basis of their relative fair values at the date of purchase. Such a transaction or event does not give rise to goodwill.

The provisional estimate of the fair value of the assets acquired under the merger arrangement of US$4,999,996 represents the aggregate estimated value of the financial obligations of the former m2m shareholders which were converted into equity in m2m prior to the merger agreement.

8. TRADE AND OTHER RECEIVABLES

	30 June 2017 US$	*31 Dec 2016 US$*
Amounts falling due within one year:		
Trade receivables	–	11,259
Prepayments and other receivables	21,589	4,155
Called up share capital not paid	620	620
	22,209	16,034

	30 June 2017 US$	*31 Dec 2016 US$*
Amounts falling due after one year:		
Deposit	5,539	3,961
	5,539	3,961

9. INVENTORY

	30 June 2017 US$	*31 Dec 2016 US$*
Component parts	392,932	321,661
	392,932	321,661

10. CASH AND CASH EQUIVALENTS

	30 June 2017 US$	*31 Dec 2016 US$*
Cash at bank and in hand	1,712,073	97,847
	1,712,073	97,847

All bank balances are denominated in US Dollars.

11. CALLED UP SHARE CAPITAL

	30 June 2017 No.	*31 Dec 2016 No.*
Allotted and called up		
Ordinary shares of no par value each	627,923	627,923
Series A preference shares of no par value each	954,764	262,321

	30 June 2017 US$	*31 Dec 2016 US$*
Share premium		
Ordinary shares of no par value each	2,442	2,442
Series A preference shares of no par value each	7,693,551	1,836,261
	7,695,993	1,838,703

12. SHARE BASED PAYMENTS

The following is an analysis of options issued and outstanding to purchase shares in the Subsidiary:

	Total Options No.	*Weighted Average Exercise Price US$*
Total options outstanding at 31 December 2016	217,582	0.40
Granted	–	–
Expired/cancelled	(37,195)	0.40
Total options outstanding at 30 June 2017	180,387	0.40

13. TRADE AND OTHER PAYABLES

	30 June 2017 US$	*31 Dec 2016 US$*
Trade payables	119,022	151,725
Accruals	152,698	160,790
Royalties	250,000	250,000
	521,720	562,515

14. BORROWINGS AND LOANS

	30 June 2017 US$	*31 Dec 2016 US$*
Notes payable	254,541	104,541
Other loans	125,000	–
	379,541	104,541

15. NATURE OF THE UNAUDITED FINANCIAL INFORMATION

The unaudited financial information presented above does not constitute statutory financial statements for the period under review.

PART V

UNAUDITED PRO FORMA STATEMENT OF NET ASSETS

SECTION (A) – ACCOUNTANTS' REPORT ON THE UNAUDITED PRO FORMA STATEMENT OF NET ASSETS

The Directors
Polarean Imaging plc
27-28 Eastcastle Street
London, W1W 8DH

The Directors
Northland Capital Partners Limited
40 Gracechurch Street
2nd Floor
London
EC3V 0BT

Dear Sirs

Introduction

We report on the unaudited pro-forma statement of net assets of Polarean Imaging plc (the "Company") and its subsidiary, Polarean, Inc. (the "Subsidiary"), together the "Group" (the "Unaudited Pro Forma Financial Information") set out in Part Section (B) of Part V of the Company's AIM admission document dated 2018 (the "Admission Document"). The Pro Forma Financial Information has been prepared on the basis of the notes thereto, for illustrative purposes only, to provide information about how the placing and admission of the Company and its securities to trading on AIM, might have affected the financial information presented on the basis of the accounting policies adopted by the Company in preparing financial information for the Group for period ended 30 June 2017. This report is required by Schedule Two of the AIM Rules for Companies (the "AIM Rules") and is given for the purpose of complying with that schedule and for no other purpose.

Responsibilities

It is the responsibility of the directors of the Company (the "Directors") to prepare the Pro Forma Financial Information. It is our responsibility to form an opinion on the Pro Forma Financial Information as to the proper compilation of the Pro Forma Financial Information and to report our opinion to you.

In providing this opinion we are not updating or refreshing any reports or opinions previously made by us on any financial information used in the compilation of the Pro Forma Financial Information, nor do we accept responsibility for such reports or opinions beyond that owed to those to whom those reports or opinions were addressed by us at the dates of their issue.

Basis of opinion

We conducted our work in accordance with the Standards for Investment Reporting 4000 as issued by the Auditing Practices Board in the United Kingdom. The work that we performed for the purpose of making this report, which involved no independent examination of any of the underlying financial information, consisted primarily of comparing the unadjusted financial information with the source documents, considering the evidence supporting the adjustments and discussing the Pro Forma Financial information with the Directors.

We planned and performed our work so as to obtain all the information and explanations we considered necessary in order to provide us with reasonable assurance that the Pro Forma Financial Information has

been properly compiled on the basis stated and that such basis is consistent with the accounting policies of the Company.

Opinion

In our opinion:

(a) the Pro Forma Financial Information has been properly compiled on the basis stated; and

(b) such basis is consistent with the accounting policies of the Company.

Declaration

For the purposes of Paragraph (a) of Schedule Two of the AIM Rules, we are responsible for this report as part of the Admission Document and declare that we have taken all reasonable care to ensure that the information contained in this report is, to the best of our knowledge, in accordance with the facts and contains no omission likely to affect its import. This declaration is included in the Admission Document in compliance with Schedule Two of the AIM Rules.

Yours faithfully

Crowe Clark Whitehill LLP
Chartered Accountants

SECTION (B) – UNAUDITED PRO FORMA STATEMENT OF NET ASSETS

Set out below is an unaudited pro-forma statement of net assets of the Company (the "Pro-Forma Financial Information), which has been prepared on the basis of the Company's financial information at 30 June 2017 and the financial information of the Subsidiary at 30 June 2017, as adjusted for the proceeds of the Placing and Subscription, as set out in the notes below. The unaudited pro forma statement has been prepared for illustrative purposes only and because of its nature will not represent the actual consolidated financial position of the Company at the date of Admission.

Unaudited pro-forma statement of net assets

(US$)	*Company (Audited) (Note 1)*	*Subsidiary (Unaudited) (Note 2)*	*Adjustments (Note 3)*	*Issue of convertible loan notes (Note 4)*	*Placing Proceeds and associated costs (Note 5)*	*Consolidated pro forma net assets (Unaudited)*
Non-current assets						
Investment in Subsidiary	4,342,848	–	(4,342,848)	–	–	–
Property, plant & equipment	–	16,398	–	–	–	16,398
Intangible assets	–	5,020,696	–	–	–	5,020,696
Receivables	–	5,539	–	–	–	5,539
Total non-current assets	4,342,848	5,042,633	(4,342,848)	–	–	5,042,633
Current assets						
Amount due from Subsidiary	1,985,064	–	(1,985,064)	–	–	–
Trade and other receivables	–	22,209	–	–	–	22,209
Inventory	–	392,932	–	–	–	392,932
Cash and cash equivalents	–	1,712,073	–	903,000	3,188,602	5,803,675
Total current assets	1,985,064	2,127,214	(1,985,064)	903,000	3,188,602	6,218,618
Total assets	6,327,912	7,169,847	(6,327,912)	903,000	3,188,602	11,261,449
Current liabilities						
Deferred revenue	–	18,353	–	–	–	18,353
Trade and other payables	–	521,720	–	–	–	521,720
Amount due to Company	–	1,985,064	(1,985,064)	–	–	–
Borrowings and loans	–	379,541	–	903,000	–	379,541
Total current liabilities	–	2,904,678	(1,985,064)	903,000	–	919,614
Non-current liabilities						
Contingent consideration	–	316,000	–	–	–	316,000
Deferred revenue	–	36,152	–	–	–	36,152
Total non-current liabilities	–	352,152	–	–	–	352,152
Total liabilities	–	3,256,830	(1,985,064)	–	–	1,271,766
Net assets/(liabilities)	6,327,912	3,913,017	(4,342,848)	903,000	3,188,602	9,989,683

Notes:

1. The financial information relating to the Company has been extracted from the Company's financial information for the period ended 30 June 2017, as set out in Section B) of Part IV of the Document. This financial information has been converted from GBP£ to USD$ using the exchange rate 1:1.28393. No account has been taken of the results of the Company subsequent to 30 June 2017.
2. The financial information relating to the Subsidiary has been extracted from the Subsidiary's financial information for the period ended 30 June 2017, as set out in Section E) of Part IV of the Document. No account has been taken of the results of the Subsidiary subsequent to 30 June 2017.
3. The adjustments comprise the elimination of inter-company balances between the Company and the Subsidiary and of the Company's investment in the Subsidiary on consolidation. The Directors consider the acquisition of the entire issued common stock of the Subsidiary by the Company in exchange for equivalent equity participation in the Company to be a group re-organisation and not a business combination and to fall outside the scope of IFRS3. Having considered the requirements of IAS 8 and the relevant UK and US guidance, the transaction is expected to be accounted for on a merger or pooling of interest basis as if both entities had always been combined, using book values, with no fair value adjustments made nor goodwill recognised.
4. On 21 December 2017, the Company entered into subscription agreements with various investors pursuant to which the investors have agreed to provide the Company with a total of £647,127 ($903,000) in exchange for the issue of convertible loan notes. Conversion of these convertible loans occurs on Admission.
5. The Company raised US$4,200,000 million (gross) from the Placing and Subscription. Associated costs of the Placing and Subscription were approximately US$1,400,000 million (excluding VAT). Of the associated costs, $405,000 have been paid to date. Therefore, the net cash proceeds from the Placing and Subscription received by the Company were approximately US$3,200,000 million.

PART VI

TAXATION

Introduction

The following paragraphs are intended as a general guide only to the United Kingdom tax position of Shareholders who are the beneficial owners of Ordinary Shares in the Company who are individuals that are United Kingdom tax resident and domiciled in the United Kingdom and who hold their shares as investments (otherwise than under an individual savings account (ISA)) only and not as securities to be realised in the course of a trade.

Certain Shareholders, such as dealers in securities, collective investment schemes, insurance companies and persons acquiring their Ordinary Shares in connection with their employment or as an office holder may be taxed differently and are not considered. Furthermore, the following paragraphs do not apply to:

- potential investors who intend to acquire Ordinary Shares as part of a tax avoidance arrangement; or
- persons with special tax treatment such as pension funds or charities.

Any prospective purchaser of Ordinary Shares in the Company who is in any doubt about their tax position or who is subject to taxation or domiciled in a jurisdiction other than the United Kingdom should consult their own professional adviser immediately.

Unless otherwise stated the information in these paragraphs is based on current United Kingdom tax law and published HMRC practice as at the date of this document. Shareholders should note that tax law and interpretation can change (potentially with retrospective effect) and that, in particular, the rates, basis of and reliefs from taxation may change. Such changes may alter the benefits of investment in the Company.

1. Income Tax – taxation of dividends

The taxation of dividends paid by the Company and received by a Shareholder resident for tax purposes in the United Kingdom is summarised below.

1.1 *United Kingdom resident individuals*

Dividend income is subject to income tax as the top slice of the individual's income. Each individual has an annual Dividend Allowance of £5,000 per annum, for dividends received before 5 April 2018 and subject to Royal ascent of the Finance Act 2017, £2,000 for dividends received after 6 April 2018. Therefore individuals do not have to pay tax on the first £5,000 of all dividend income they receive.

Dividends in excess of the Dividend Allowance are taxed at the individual's marginal rate of tax, with dividends falling within the basic rate band taxable at 7.5 per cent (the "dividend basic rate"), those within the higher rate band taxable at 32.5 per cent. (the "dividend higher rate") and those within the additional rate band taxable at 38.1 per cent. (the "dividend additional rate").

1.2 *United Kingdom discretionary trustees*

The annual Dividend Allowance available to individuals is not available to United Kingdom resident trustees of a discretionary trust. Since 6 April 2016, United Kingdom resident trustees of a discretionary trust in receipt of dividends are liable to income tax at a rate of 20 per cent on the trust's share of the standard rate band rising to 38.1 per cent on dividend income in excess of the trust's share of the standard rate band. This mirrors the dividend additional rate.

1.3 *United Kingdom resident companies*

Shareholders that are bodies corporate resident in the United Kingdom for tax purposes, may (subject to anti-avoidance rules) be able to rely on Part 9A of the Corporation Tax Act 2009 to exempt dividends paid by the Company from being chargeable to United Kingdom corporation tax. Such shareholders should seek independent advice with respect to their tax position.

United Kingdom pension funds and charities are generally exempt from tax on dividends that they receive.

1.4 ***Non-United Kingdom tax residents***

Generally, shareholders who are not resident for United Kingdom tax purposes will not be subject to any United Kingdom taxation in respect of United Kingdom dividend income. Those shareholders may be subject to tax on United Kingdom dividend income under any law to which that person is subject to tax outside the United Kingdom. Shareholders who are not tax resident for United Kingdom tax purposes should consult their own tax advisers with regard to their liability to taxation in respect of the dividend income.

1.5 ***Withholding tax***

Under current United Kingdom tax legislation no tax is withheld from dividends or redemption proceeds paid by the Company to Shareholders.

2. United Kingdom taxation of capital gains

The following paragraphs summarise the tax position in respect to a disposal of Ordinary Shares by a Shareholder resident in the United Kingdom. To the extent that a Shareholder acquires Ordinary Shares allotted to him, the amount paid for the Ordinary Shares will generally constitute the base cost of the Shareholder's holding.

A disposal of Ordinary Shares by a Shareholder who is tax resident in the United Kingdom may give rise to a chargeable gain or an allowable loss for the purposes of United Kingdom taxation of chargeable gains, depending on the Shareholder's circumstances and subject to any available exemptions or reliefs.

For individual Shareholders who are United Kingdom tax resident or only temporarily non-United Kingdom tax resident, capital gains tax at the rate of 10 per cent. for basic rate taxpayers or 20 per cent. For higher or additional rate taxpayers may be payable on any gain (after any available exemptions, reliefs or losses). For Shareholders that are bodies corporate any gain may be within the charge to corporation tax. Individuals may benefit from certain reliefs and allowances (including a personal annual exemption allowance) depending on their circumstances. Shareholders that are bodies corporate resident in the United Kingdom for taxation purposes will benefit from indexation allowance which, in general terms, increases the chargeable gains tax base cost of an asset in accordance with the rise in the retail prices index, but will not create or increase an allowable loss.

Individual Shareholders who subscribe for shares and continuously hold their Ordinary Shares for no less than three years may, on a subsequent disposal of those Ordinary Shares, qualify for "Investors' relief".

Investors' Relief provides for a reduced rate of capital gains tax of 10 per cent. on gains realised on the disposal of certain ordinary shares, up to a lifetime limit of £10 million of gains, subject to various conditions being met by both the investor and investee company.

The relevant qualifying conditions of Investors' Relief are considered likely to be met by the Company and/or the Enlarged Group. However neither the Company, its Directors or advisors can guarantee that those conditions will be or will continue to be met throughout the required share-holding period.

For trustee Shareholders of a discretionary trust who are United Kingdom tax resident, capital gains tax at the rate of tax of 20 per cent. may be payable on any gain (after any available exemptions, reliefs or losses).

Non-United Kingdom tax resident Shareholders will not normally be liable to United Kingdom taxation on gains unless the Shareholder is trading in the United Kingdom through a branch, agency or permanent establishment and the Ordinary Shares are used or held for the purposes of the branch, agency or permanent establishment.

3. Stamp duty and stamp duty reserve tax

The statements below are intended as a general guide to the current position. They do not apply to certain intermediaries who are not liable to stamp duty or stamp duty reserve tax (SDRT) or (except where stated otherwise) to persons connected with depositary arrangements or clearance services who may be liable at a higher rate.

No UK stamp duty or SDRT will generally be payable on the issue or allotment of Ordinary Shares.

Neither UK stamp duty nor SDRT should arise on transfers of Ordinary Shares on AIM (including instruments transferring Shares and agreements to transfer Ordinary Shares) based on the following assumptions:

- the Shares are admitted to trading on AIM, but are not listed on any market (with the term "listed" being construed in accordance with section 99A of the Finance Act 1986), and this has been certified to Euroclear; and
- AIM continues to be accepted as a "recognised growth market" as construed in accordance with section 99A of the Finance Act 1986).

In the event that either of the above assumptions does not apply, stamp duty or SDRT may apply to transfers of Ordinary Shares in certain circumstances.

Any prospective purchaser of Ordinary Shares in the Company who is in any doubt about their tax position or who is subject to taxation or domiciled in a jurisdiction other than the United Kingdom should consult their own professional adviser immediately.

4. Enterprise investment scheme

The Company has received provisional clearance from HMRC that the First Tranche Placing Shares will rank as a qualifying investment for the purposes of the Enterprise Investment Scheme and for the purposes of investment by Venture Capital Trusts.

EIS provides the following tax reliefs for individual investors provided investments are held for three years and that the investor qualifies as an individual entitled to relief under the EIS rules:

- Initial income tax relief of up to 30 per cent. of the amount subscribed (subject to a maximum investment of £1,000,000). The income tax relief is withdrawn if the shares are not retained for a minimum of 3 years.

  Exemption from capital gains tax CGT on a disposal of the eligible shares where the disposal takes place more than three years after they are acquired and where EIS income tax relief has been claimed on those shares and not withdrawn.
- Liability of individuals and certain trustees to CGT arising from the disposal of any assets may be deferred by investing the gain (or part of the gain) in the shares of a qualifying company. The investment must be made within a time period beginning one year before and ending three years after the original disposal. The capital gain deferred will crystallise on the disposal of the EIS shares.
- Where a loss is incurred by an investor on the first disposal of his EIS shares, the loss calculated after deducting EIS income tax relief from the cost of the investment may be set against either chargeable gains or taxable income at the election of the investor.

A claim for CGT deferral relief or income tax relief under EIS is made by the individual investors and/or trustees claiming the relief.

Investors considering taking advantage of any of the reliefs under EIS or available to VCTs should seek their own professional advice in order that they may fully understand how the rules apply in their individual circumstances. As the rules governing EIS and VCT reliefs are complex and interrelated with other legislation, if any potential investors are in any doubt as to their tax position, require more detailed information than the general outline above, or are subject to tax in a jurisdiction other than the UK, they should consult their professional adviser.

The continuing availability of EIS relief and the status of the First Tranche Placing Shares as a qualifying holding for VCT purposes will be conditional on the Company and trade continuing to satisfy the requirements of EIS and VCT throughout the relevant period (three years from the date of share issue for EIS).

The Directors intend to manage the Company so as to maintain the status of the Company as a qualifying company for EIS purposes and its shares as a qualifying VCT investment. However, neither the Directors nor the Company give any warranty or undertaking that EIS relief or VCT qualifying status, if granted, will not be withdrawn, nor do they warrant or undertake that the Company will conduct its activities in a way that qualifies for or preserves its status.

PART VII

ADDITIONAL INFORMATION

1. RESPONSIBILITY

The Company (whose registered office address appears on page 7 of this Document) and the Directors, whose names, business address and functions appear on page 7 of this Document, accept responsibility for the information contained in this Document including individual and collective responsibility for compliance with the AIM Rules for Companies. To the best of the knowledge and belief of the Company and the Directors (each of whom has taken all reasonable care to ensure that such is the case), the information contained in this Document is in accordance with the facts and does not omit anything likely to affect the import of such information.

2. INCORPORATION AND STATUS OF THE COMPANY

2.1 The Company was incorporated in England and Wales on 24 October 2016 as a private company limited by shares, with the name Polarean Imaging Limited and registered number 10442853. On 13 March 2018 the Company was re-registered as a public company limited by shares and changed its name to Polarean Imaging plc.

2.2 The Company's principal activity is that of a holding company.

2.3 The principal legislation under which the Company was incorporated and operates is the Act. The liability of the shareholders is limited.

2.4 The Company's legal and commercial name is Polarean Imaging plc.

2.5 The registered office of the company is at 27/28 Eastcastle Street, London, W1W BDH. The registered office of the Subsidiary, Polarean, Inc., (further details of which are provided in paragraph 3 of this Part VII) is Wells Fargo Capitol Center, 150 Fayetteville Street, Suite, 2300, Raleigh, Wake County, North Carolina 27601 and its principal place of business is located at 2500 Meridian Parkway #175, Durham, NC 27713, United States.

2.6 The telephone number of the principal place of business of the Company and the Subsidiary is +1 919 206 7900.

2.7 The address of the Group's website, at which the information required by Rule 26 of the AIM Rules can be found, is www.polarean.com.

3. THE GROUP

3.1 The Company has one wholly-owned subsidiary: Polarean, Inc. Polarean, Inc. was incorporated in North Carolina on 6 October 2011 as a North Carolina Corporation, with the name Polarean, Inc. and SOSID: 1224616. The principal legislation under which the Company was incorporated and operates is the North Carolina Business Corporation Act. The principal activity of the Subsidiary is as a manufacturer and service provider for noble gas polariser devices and ancillary instruments with a special focus on pulmonary imaging.

3.2 The Subsidiary is a result of mergers between: (i) m2m and Polarean Merger-Sub Inc.; and subsequently (ii) m2m and the Subsidiary.

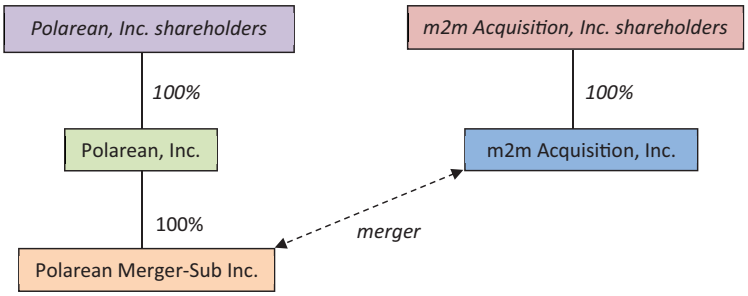
3.2.1 *m2m*

m2m was a company incorporated under the laws of the State of Delaware on 1 November 2016 for the purpose of acquiring substantially all of the assets of m2m Imaging Corp., a Delaware corporation engaged in the medical imaging business similar to the business of the Subsidiary. m2m's acquisition of the assets of m2m Imaging Corp. was completed on 8 February 2017. Further details of the acquisition of the m2m Imaging Corp. assets are set

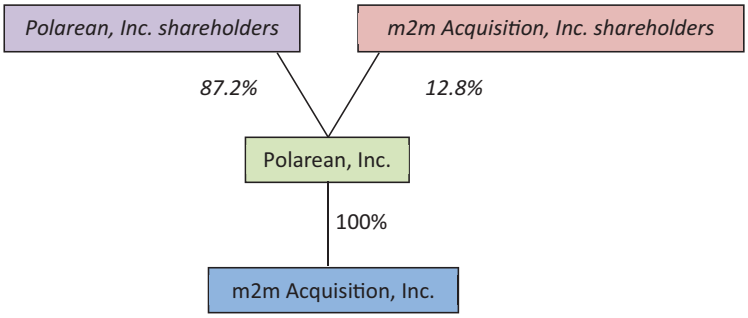
out in paragraph 16.1 of this Part VII. Following the transaction m2m Imaging Corp. was dissolved pursuant to a Certificate of Dissolution in accordance with the laws of the State of Delaware.

3.2.2 *Merger between m2m and Polarean Merger-Sub Inc.*

On 23 November 2016, the Subsidiary incorporated a subsidiary, Polarean Merger-Sub Inc. for the purposes of the m2m Merger. Pursuant to the terms of the Merger Agreement, Polarean Merger-Sub Inc. was merged with and into m2m on 30 May 2017, with m2m being the surviving entity.



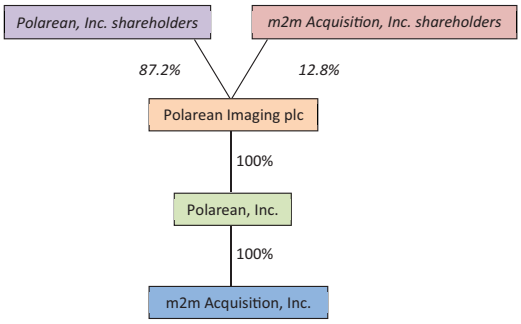
As a result of the m2m Merger, the Subsidiary became the sole shareholder of m2m and the former m2m shareholders obtained common stock in the Subsidiary.



Further details of the m2m Merger are set out in paragraph 16.2.6 of this Part VII.

3.2.3 *Acquisition of the Subsidiary by the Company*

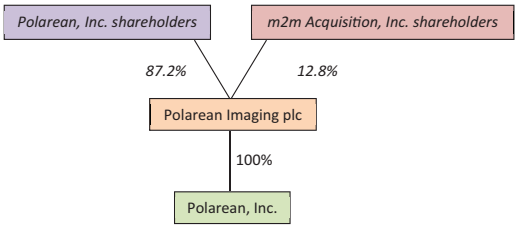
The Company became the sole shareholder of the Subsidiary (with m2m as its subsidiary) on 31 May 2017 by way of the Share Exchange. Under the terms of the Share Exchange Agreement, the Company issued a total of 1,582,587 ordinary shares of £0.01 each in the Company to the former shareholders of the Subsidiary and in exchange acquired the entire issued share capital of the Subsidiary.



Further details of the Share Exchange Agreement entered into are set out in paragraph 14.2 of this Part VII.

3.2.4 *Merger between m2m and the Subsidiary*

Following completion of the Share Exchange, the Subsidiary's board of directors determined that it was in the best interests of the Group to simplify the Group's corporate structure by merging m2m with and into the Subsidiary, with the Subsidiary being the surviving entity. This internal restructuring was completed on 1 September 2017 pursuant to the laws of the State of North Carolina in accordance with an Agreement and Plan of Merger and Articles of Merger, and pursuant to the laws of the State of Delaware in accordance with a Certificate of Ownership and Merger.



4. SHARE CAPITAL OF THE COMPANY

4.1 The issued share capital of the Company as at the date of this Document and as it will be immediately following Admission is as follows:

	Number	£
As the date of this Document:		
Ordinary Shares	48,470,160	18,140.03
As at Admission:		
Ordinary Shares	73,406,692	27,160.48

4.2 The Company was incorporated on 24 October 2016 with one ordinary share of £0.01 that was credited as fully paid and subscribed for by Amphion Innovations plc.

4.3 On 30 May 2017 the ordinary share of £1.00 in the capital of the Company was subdivided into 100 ordinary shares of £0.01 each.

4.4 On 30 May 2017, the Company issued:

4.4.1 1,582,587 ordinary shares of £0.01 each in the share capital of the Company to the former shareholders of the Subsidiary in accordance with the Share Exchange Agreement; and

4.4.2 231,316 ordinary shares of £0.01 each in the share capital of the Company in connection with an investment of £1,545,192 into the Company.

The ordinary shares of £0.01 each were issued fully paid.

4.5 On 16 February 2018, the Company subdivided its share capital of 1,814,003 ordinary shares of £0.01 each into 48,470,160 Ordinary Shares of £0.00037 each,

4.6 As at the date of this Document, the Company has 48,470,160 Ordinary Shares in issue and the balance of the Company's stated capital account in respect of such Ordinary Shares is £18,140.03.

4.7 On 16 February 2018 shareholder resolutions of the Company having the following effect were passed:

4.6.1 the Directors were authorised to re-register the Company as a public company limited by shares and to change the name of the Company to Polarean Imaging plc;

4.6.2 the Company approved the adoption of amended articles of association suitable for a public company limited by shares, with effect from the re-registration of the Company, further details of which are set out at paragraph 7 of this Part VII;

4.7.3 the Directors were authorised to allot:

(a) up to 2,432,717 Ordinary Shares in connection with the issue of Convertible Loan Notes, such authority expiring (unless previously renewed, revoked, varied or extended) on 1 April 2018;

(b) up to 129,425 Ordinary Shares in connection with the issue of warrants over shares in accordance with the terms of the Convertible Loan Notes, such authority expiring (unless previously renewed, revoked, varied or extended) on the first anniversary of Admission;

(c) up to 9,619,200 Ordinary Shares in connection with the issue of share options pursuant to the Company's pre-Admission share option plan (further details of which are at paragraph 5.2 of this Part VII), such authority expiring (unless previously renewed, revoked, varied or extended) on the fourth anniversary of Admission;

(d) Ordinary Shares equal to five per cent. of the nominal value of the issued share capital at Admission in connection with the issue of share options pursuant to the Plan (further details of which are at paragraph 5.3 of this Part VII), such authority expiring (unless previously renewed, revoked, varied or extended) on the tenth anniversary of the date of grant;

(e) Ordinary Shares equal to one per cent. of the nominal value of the issued share capital at Admission in connection with the issue of share options to Northland pursuant to an Option Agreement (further details of which are at paragraph 13.1 of this Part VII), such authority expiring (unless previously renewed, revoked, varied or extended) on the fifth anniversary of Admission;

(f) Ordinary Shares equal to one per cent. of the nominal value of the issued share capital at Admission in connection with the granting of warrants to MC Services in relation to services provided as part of the Placing (further details of which are at paragraph 13.1.14 of this Part VII), such authority expiring (unless previously renewed, revoked, varied or extended) on the fifth anniversary of Admission;

(g) up to 33,333,333 Ordinary Shares in connection with the Placing and Subscription, such authority expiring (unless previously renewed, revoked, varied or extended) on 30 June 2018;

4.7.4 the Directors were generally and unconditionally authorised, until the conclusion of the Company's first annual general meeting or 15 months from Admission whichever is the earlier, to allot Equity Securities (as defined in the Articles) equal to 15 per cent. of the nominal value of the issued share capital at Admission;

4.7.5 the Directors were given the power (pursuant to sections 570 and 573 of the Act) to allot equity securities (as defined in section 560 of the Act) for cash pursuant to the authority conferred by the resolution referred to in paragraph 4.6.3 above as if section 561 of the Act did not apply to any such allotment; and

4.7.6 the Directors were given the power (pursuant to sections 570 and 573 of the Act) to allot equity securities (as defined in section 560 of the Act) for cash pursuant to the authority conferred by the resolution referred to in paragraph 4.6.4 above as if section 561 of the Act did not apply to any such allotment.

4.8 At Admission a total of 20,000,000 Ordinary Shares will be issued by the Company to the Placees and the Subscribers, raising a total of £3,000,000 before Transaction Costs.

4.9 The Company has, and at incorporation had, no authorised share capital.

4.10 The Ordinary Shares have a nominal value of £0.00037. All Ordinary Shares in issue as at the date of this Document are fully paid up.

4.11 The Ordinary Shares have been created under the Act and shall have the rights and be subject to the restrictions referred to in paragraph 7 of this Part VII.

4.12 The Placing Price and Subscription Price of £0.15 per Placing Share and Subscription Share is payable in full on Admission.

4.13 The Placing Shares and the Subscription Shares will on Admission, rank *pari passu* in all respects with the Existing Ordinary Shares including the right to receive all dividends or other distributions hereafter declared, paid or made on the ordinary share capital of the Company.

4.14 The Existing Ordinary Shares are, and the Placing Shares and the Subscription Shares will be, in registered form and may be held in either certificated form or in uncertificated form. CREST is a paperless settlement procedure enabling securities to be evidenced otherwise than by certificates and transferred otherwise than by written instrument. Accordingly, it is intended that following Admission the settlement of transactions in the Placing Shares and the Subscription Shares may take place in CREST if the relevant Shareholders so wish. The records in respect of Ordinary Shares held in uncertificated form will be maintained by the Company's registrars, Share Registrars Limited.

4.15 It is expected that definitive share certificates for the Ordinary Shares not to be held through CREST will be posted to allottees by 5 April 2018.

4.16 Otherwise than pursuant to the Placing and the Subscription none of the Ordinary Shares have been sold, or are available in whole or in part, to the public in conjunction with the application for the entire issued share capital to be admitted to trading on AIM.

4.17 There are no listed or unlisted securities of the Company not representing share capital.

4.18 No Ordinary Shares are held by or on behalf of the Company.

4.19 Otherwise than as referred to in this Document, there are no convertible securities, exchangeable securities or securities with warrants in the Company.

4.20 Other than the current application for Admission, the Ordinary Shares are not being admitted to dealings on any recognised investment exchange, nor has any application for such admission been made, nor are there intended to be any other arrangements in place for there to be such dealings in the Ordinary Shares.

4.21 No Existing Ordinary Shares are currently in issue and no Ordinary Shares will be in issue on Admission with a fixed date on which entitlement to a dividend arises and there are no arrangements in force whereby future dividends are waived or agreed to be waived.

4.22 No person has any acquisition right over, and the Company has incurred no obligation over, the Company's authorised but unissued share capital or given any undertaking to increase the Company's authorised capital.

4.23 Save in connection with the Placing and the Subscription or as otherwise referred to in this Document:

4.23.1 no unissued share or loan capital of the Company is proposed to be issued or is under option or agreed, conditionally or unconditionally, to be put under option;

4.23.2 no loan capital of the Company is in issue and no such issue is proposed;

4.23.3 there are no acquisition rights and or obligations over authorised but unissued capital or an undertaking to increase the authorised capital;

4.23.4 no persons have preferential subscription rights in respect of any share or loan capital of the Company; and

4.23.5 there is no present intention to issue any share capital of the Company nor is there an undertaking to increase the capital of the Company at the date of this Document.

5. SHARE OPTION ARRANGEMENTS

Existing Group Share Option Schemes

5.1 ***2011 Plan***

5.1.1 On 1 December 2011, the Subsidiary adopted the 2011 Plan.

5.1.2 Pursuant to the 2011 Plan, the Board can grant options to purchase shares of the authorised but unissued common stock of the Subsidiary, being either incentive stock options or nonqualified stock options. The board of the Subsidiary has discretion to determine who stock options are granted to, although incentive stock options can only be granted to employees. The maximum number of shares of stock that may be issued under the 2011 Plan is 6,412,800 shares. All options must be granted, if at all, within 10 years of the date of the Plan.

5.1.3 Subject to certain limitations set out in the 2011 Plan, the board of the Subsidiary has the right to determine the terms and conditions of options granted under the 2011 Plan, including the number of shares that an option will be exercised into, the exercise price and the exercise period. The terms and conditions of the share options are set out in the option agreement relating to that share option which is issued by the board of the Subsidiary.

5.1.4 Exercise of the share options can be accelerated in certain circumstances, including upon a change of control of the Subsidiary. In the event of a change of control, the acquiring entity may assume the Subsidiary's rights and obligations in relation to the share options that have been granted under the 2011 Plan or to terminate the 2011 Plan. The Subsidiary has a right of repurchase and a first right of refusal on any shares acquired by way of exercise of an option under the 2011 Plan.

5.1.5 As at the date of this Document, 5,156,960 share options have been granted under the 2011 Plan, each of which was assumed and converted by the Company into options over Ordinary Shares as described in paragraph 14.3 of this Part VII.

5.1.6 The Company does not intend that any further options will be granted under the 2011 Plan.

5.2 ***Pre-Admission Share Option Plan***

5.2.1 Prior to Admission the Company adopted a share option plan pursuant to which the Company granted options over Ordinary Shares to certain members of the senior management team.

5.2.2 The pre-Admission share option plan has the following key terms:

(a) the maximum total number of options that may be issued under the plan is 9,619,200 and such share options shall consist of authorised but unissued or reacquired shares or any combination thereof;

(b) the exercise price for each share option shall be the Placing Price;

(c) the share options may be exercised at any time from Admission, however no share option shall be exercisable after the expiration of 4 years from the date of Admission;

(d) subject to earlier termination of a share option as otherwise provided by the Plan, an option shall terminate upon the option holder's termination of service to the Company, whether as employee, director or consultant. A share option terminated in this way must be exercised within three months after the date on which the share option holder's service to the Company terminated;

(e) upon a change of control of the Company, the board may provide for acceleration of the exercisability and/or vesting in connection with any share options acquired pursuant to the change of control. The board also has the absolute discretion to determine that any share options outstanding immediately prior to a change of control shall be cancelled in return for payment. The entity acquiring the Company may assume or continue the Company's rights and obligations in relation to each share option that has been granted; and

(f) the board may amend, suspend or terminate the Plan at any time.

5.2.3 As at Admission 9,245,120 share options will have been granted under this share option plan.

5.3 ***Company's Share Option Plan***

5.3.1 At Admission the Company is to adopt the Plan which will be administered by the Board of Directors. Participation in the Plan is limited to employees of the Group. Options granted to

non-employees (consultants and directors) will be by way of a sub-plan, governed by the same rules of the Plan unless the context otherwise provides.

5.3.2 The Plan has the following key terms:

(a) the Board may only grant share options: (i) within 42 days of Admission, beginning with the Dealing Day after Admission; (ii) on the Dealing Day after the date on which the Company announces its annual or half-yearly results for any period; or (iii) at any time when the board considers that circumstances are sufficiently exceptional to justify the grant. Where the Company is restricted by statute, order or regulation from granting a share option, the share option may be granted at any time during the period of 42 days after the removal of such restriction;

(b) the number of shares that may be allocated on any day shall not, when added to the aggregate number of shares allocated under the Plan in the previous 10 years and any other employees' share option scheme adopted by the Company, exceed the number of shares that represents 5 per cent. of the fully diluted ordinary share capital of the Company in issue immediately prior to that day;

(c) the maximum total number of shares that may be issued under the Plan is 4,881,288 and such share options shall consist of authorised but unissued or reacquired shares or any combination thereof;

(d) the exercise price for each share option will not be less than the nominal value of the relevant shares if the share options are to be satisfied by a new issue of shares by the Company. The exercise price is to be established by the Board, however, must not be less than the fair market value (by reference to a closing price) at the effective date of grant of the share option;

(e) the share options may be exercised at such time or times, or upon such event or events and subject to such terms, conditions, performance criteria and restrictions as determined by the board and set out in the share option agreements evidencing the share options. However, no share option shall be exercisable after the expiration of 10 years after the effective date of grant;

(f) subject to earlier termination of a share option as otherwise provided by the Plan, an option shall terminate upon the option holder's termination of service to the Company, whether as employee, director or consultant. A share option terminated in this way must be exercised within three months after the date on which the share option holder's service to the Company terminated;

(g) upon a change of control of the Company, the board may provide for acceleration of the exercisability and/or vesting in connection with any share options acquired pursuant to the change of control. The board also has the absolute discretion to determine that any share options outstanding immediately prior to a change of control shall be cancelled in return for payment. The entity acquiring the Company may assume or continue the Company's rights and obligations in relation to each share option that has been granted; and

(h) the board may amend, suspend or terminate the Plan at any time.

5.3.3 As at Admission no share options will have been granted under the Plan.

6. WARRANTS

At the date of this Document, there are 9,068,821 warrants in issue, which have not yet been exercised or lapsed, all of which are to be settled upon exercise by the issue of Ordinary Shares.

6.1 *Polarean Warrants*

6.1.1 Prior to the acquisition of the Subsidiary by the Company, the Subsidiary granted certain warrants over its shares (the "**Polarean Warrants**"). Pursuant to the terms of the Polarean Warrants, upon exercise they would be settled by the issue of shares in the Subsidiary.

6.1.2 The exercise price of the Polarean Warrants varies depending on the particular warrant instrument between US$0.11 and US$0.90 per share but they are all exercisable at any time from the date of issue until the earlier of the tenth anniversary of the date of issue or the sale of all or substantially all of the company's stock or assets. The exercise price and number of shares to be issued on exercise is subject to adjustment in certain circumstances.

6.1.3 On 30 May 2017, the Company entered into agreements with the holders of the Polarean Warrants pursuant to which, upon exercise, the Polarean Warrants will be settled by the issue of Ordinary Shares. Further details of these agreements are set out in paragraph 14.4 of this Part VII. As at the date of this Document 4,921,129 Polarean Warrants remain unexercised.

6.1.4 The expiration date of the last of the Polarean Warrants issued is January 2025.

6.2 ***Amphion Warrants***

6.2.1 The Company granted a warrant of 5 per cent. of the issued share capital of the Subsidiary following the Merger to Amphion Innovations plc, Robert Bertoldi and Richard Morgan. A total of 2,618,373 Amphion Warrants were issued pursuant to the Amphion Warrant Instrument.

6.2.2 The Amphion Warrants can be exercised at any time during the period commencing on the date on which the Company confirms that it has raised a total of at least US$5,000,000 with a minimum price per share of £0.25, calculated from the total of the funds raised on or following the signing of the Merger Agreement (provided that this date is prior to 25 May 2018) and the fourth anniversary of the date on which such confirmation is made. Upon exercise of the Amphion Warrants in accordance with the terms of the Amphion Warrant Instrument, the holders of the Amphion Warrants will become shareholders in the Company.

6.3 ***Subscriber warrants***

6.3.1 The Company granted 1,236,174 Subscriber Warrants on 31 May 2017 as part of a US$2,000,000 fundraising which the Company concluded as a pre-condition to the completion of the Merger. Pursuant to the terms of the subscription agreements that the Company entered into as part of this fundraising, the subscribers received one warrant for every five shares subscribed for as part of the fundraising.

6.3.2 Under the terms of the Subscriber Warrant Instrument, the Subscriber Warrants can be exercised at any time during the period commencing on the date of Admission and expiring on 25 May 2021. Upon exercise of the Subscriber Warrants in accordance with the terms of the Subscriber Warrant Instrument, the holders of the Subscriber Warrants will become shareholders in the Company.

6.4 ***Pre-Admission Warrants***

On 12 December 2017, the Company issued 129,425 Pre-Admission Warrants to various investors who provided a total investment of £647,127 to the Company as part of a pre-Admission fundraising which the Company concluded. Pursuant to the terms of the subscription agreements that the Company entered into as part of this fundraising, the subscribers received one warrant for every five shares subscribed for as part of the fundraising.

The Pre-Admission Warrants can be exercised at any time during the period commencing on Admission and the first anniversary of Admission at the Placing Price. Each Pre-Admission Warrant shall entitle the warrantholder to subscribe for one Ordinary Share (subject to adjustment as referred to in the warrant instrument under which the Pre-Admission Warrants are constituted).

6.5 ***MCS Warrants***

6.5.1 Conditional on Admission, the Company has granted 3,400 MCS Warrants to MC Services AG pursuant to the terms of the MCS Warrant Instrument. The MCS Warrants were granted in consideration for services provided to the Company which resulted in the Company receiving funds from investors as part of the Placing as a result of an introduction by MC Services AG and/or Kontor Stöwer Asset Management GmbH.

6.5.2 Under the terms of the MCS Warrant Instrument, the MCS Warrantholders will have the right to subscribe for one Ordinary Share at the Placing Price for each MCS Warrant that they hold. The MCS Warrants can be exercised at any time from Admission until the fifth anniversary of Admission in consideration for payment of the Placing Price per MCS Warrant being exercised and any MCS Warrants which have not been exercised during this period shall lapse. Upon exercise of the MCS Warrants in accordance with the terms of the MCS Warrant Instrument, the MCS Warrantholders will become shareholders in the Company.

7. ARTICLES OF ASSOCIATION

The Articles, which were adopted by the Company on 16 February 2018, contain provisions to the following effect:

7.1 *Objects of the Company*

The Articles do not provide for any objects of the Company, and accordingly the Company's objects are unrestricted. The Articles also do not state any purposes for which the Company was established and therefore the Company is able to undertake any activities permitted by the laws of England and Wales.

7.2 *Issue of shares and share rights*

Shares may be issued, subject to applicable laws, the Articles and without prejudice to any rights or privileges attached to any existing class of shares, with such rights or restrictions as the Company may from time to time by ordinary resolution determine, or, if the Company has not so determined, as the directors may determine.

Subject to applicable laws, any share may be issued which is to be redeemed, or is to be liable to be redeemed at the option of the holder or the Company, on such terms and in such manner as the Company may by special resolution determine. The Company may also issue any share with such preferred, deferred or other special rights or privileges as the Directors may determine and purchase or enter into a contract to purchase any of the Company's own shares of any class.

7.3 *Alteration of share capital*

The Company is entitled to increase, consolidate and divide its share capital as it may from time to time by ordinary resolution decide. Subject to the provisions of the Act, the Company may by special resolution reduce its share capital, capital redemption reserve, share premium accounts or other undistributable reserves in any manner. In the event that any consolidation or sub-division of shares results in any Shareholder being entitled to fractions of shares, the directors have the right to settle the matter as they see fit.

7.4 *Modifications to share class rights*

If the Company's share capital is divided into shares of different classes, any rights attached to any class of shares may (subject to the rights attached to the shares of the class) be varied or abrogated in any manner, either with the written consent of the holders of not less than three-quarters in nominal value of the shares of that class or with the sanction of a special resolution passed at a separate meeting of the holders of such class of shares.

7.5 *Share transfers*

A Shareholder may transfer their certificated shares to another person by a written instrument of transfer in any usual form (or any other form approved by the directors) executed by or on behalf of the Shareholder and, in the case of a share which is not fully paid, by or on behalf of the transferee. The board may refuse to register the transfer of a certificated share which is in respect of a partly paid share, in respect of more than one class of share, in favour of more than four joint transferees, a minor or to an entity which is not a natural or legal person, or if the transfer document is not duly stamped or not delivered for registration with appropriate evidence of the transferor's title to the Company's registered office or its share registrars.

A Shareholder may transfer uncertificated shares without a written instrument if such shares are a participating security held in uncertified form in accordance with the CREST Regulations. Uncertificated shares must be transferred by means of the relevant system in which the shares are held, subject to the rules of that system and the CREST Regulations. The board is required to register a transfer of any uncertificated share in accordance with those regulations. The board may refuse to register any such transfer which is in favour of more than four persons jointly or in any other circumstance permitted by the CREST Regulations.

7.6 ***Share warrants***

The Company has the right to issue share warrants in accordance with the provisions of the Act with such rights or restrictions as the Directors may prescribe and from time to time vary.

7.7 ***Dividends and other distributions***

Subject to the rights attached to any ordinary share, all dividends and other distributions, including any surplus in the event of a liquidation, are to be apportioned and paid *pro-rata* according to the amounts paid up on the ordinary shares, or otherwise in accordance with the terms concerning entitlement to dividends on which shares were issued. Any dividend unclaimed for 12 years from the date on which it became payable shall revert to the Company.

The board may, where authorised by an ordinary resolution of the Company, offer scrip dividends to Shareholders, whereby Shareholders can opt to receive an allotment of new ordinary shares in lieu of any dividend declared by the board.

7.8 ***Interests in shares not disclosed to the Company***

If a Shareholder or any person appearing to be interested in a share has been duly served with a notice under section 793 of the Act and has failed in relation to any shares to give the Company the information thereby required within the prescribed period from the date of the service of the notice, then, unless the board determines otherwise, the Shareholder shall not be entitled to attend or vote at any general meeting or any separate meeting of the holders of that class of shares or on a poll.

Where the holding represents at least 0.25 per cent. of the issued shares of that class, except in liquidation of the Company, no payment shall be made of any sums due from the Company on the shares including in respect of dividends or other distributions and such member shall not be entitled to transfer such shares unless the Shareholder himself is not in default, the transfer is an approved transfer or the registration of the transfer is required under the CREST Regulations.

7.9 ***Calls on shares and lien and forfeiture of shares***

Subject to the terms on which shares are allotted, the board may make calls on Shareholders in respect of any monies unpaid on their shares. Each Shareholder shall (subject to receiving at least 14 days' notice) pay to the Company the amount called on his shares. If a call or any instalment of a call remains unpaid in whole or in part after it has become due and payable, the board may give the person from whom it is due notice requiring payment of the amount unpaid together with any interest which may have accrued and any costs, charges and expenses incurred by the Company by reason of such non-payment. The notice shall name the place where payment is to be made and shall state that if the notice is not complied with the shares in respect of which the call was made will be liable to be forfeited.

The Company has a first and paramount lien on every share which is not fully paid for all amounts payable to the Company (whether actually or contingently and whether presently or not) in respect of that share. The board may forfeit or sell any share on which the Company has a lien if a sum in respect of which the lien exists is presently payable and is not paid within the period set out in the notice sent to the holder of the share demanding payment and stating that if the notice is not complied with the share may be sold.

7.10 ***Appointment of directors***

Unless otherwise determined by the Company by ordinary resolution, the total number of directors at any time may not be less than two or more than ten. The Company may by ordinary resolution appoint as a director a person who is willing to act as such, either to fill a vacancy or as an addition to the existing directors. The board may appoint as a director any person who is willing to act as such, either to fill a vacancy or as an addition to the existing board. Any director so appointed by the board is required to retire at the next annual general meeting. He will be eligible to stand for election as a director at that meeting and will not be taken into account in determining the number or identity of directors who are to retire by rotation at it.

7.11 ***Retirement by rotation and removal of directors***

At each annual general meeting of the Company one-third of the directors who are subject to retirement by rotation in accordance with the Articles or, if their number is not three or a multiple of three, the number nearest to one-third, are required to retire from office. Directors who have been in office for a continuous period of nine years or more at the date of the meeting shall also retire from office but shall not be taken into account when determining the number of directors required to retire by rotation. A director who retires at an annual general meeting may, if willing to act, be reappointed at it.

The Company may remove any director from office by ordinary resolution or by notice in writing served upon him by all of his co-directors. The Company may appoint as a director another person who is willing to act as such in his place, in each case by ordinary resolution.

7.12 ***Directors' benefits***

Other than for executive directors appointed in accordance with the Articles, the maximum aggregate amount of fees that the Company may pay to directors for their services as such is £500,000 per annum, or such larger amount as the Company may by ordinary resolution decide. These fees are to be divided among the directors as the board decides or, if no decision is made, equally. An executive director may receive from the Company a salary or other remuneration in addition to or instead of such fees.

The directors are entitled to be paid all travelling, hotel and other expenses properly incurred by them in connection with the discharge of their duties as directors.

The board may provide pensions, other retirement or superannuation benefits, death or disability benefits or other allowances or gratuities for persons who are or were directors of the Company and their spouses and dependants.

7.13 ***Powers of the board***

Subject to the provisions of the Act, the Articles and any directions given by the Company acting by special resolution, the Company's business is to be managed by the board. The board may exercise all of the Company's powers and may do on its behalf anything that can be done by the Company or on its behalf which is not required by law or the Articles to be exercised or done by the Company in general meeting.

The board may delegate to any director or any committee consisting of one or more directors any of its powers on such terms as it thinks fit. The board may grant to a director the power to sub-delegate, and may retain or exclude the right of the board to exercise the delegated powers, authorities or discretions collaterally with the director. Any powers delegated may be revoked or altered.

7.14 ***Disclosure of interests in ordinary shares***

7.14.1 Subject to the provisions of the Act, a director is not required (provided he has disclosed his interest in the matter) to account to the Company for any benefit which he derives from or in connection with: (i) any transaction or arrangement with the Company or in which the Company is otherwise interested; (ii) acting by himself or his firm in a professional capacity for the Company, otherwise that as auditor, and being entitled to such remuneration as the board may arrange; or (iii) being a director or other officer of, or employed by, or a party to any

transaction or arrangement with, or otherwise interested in, any body corporate promoted by the Company or in which the Company is otherwise interested.

7.14.2 A director may not vote on, or be counted in the quorum in relation to, any resolution of the board concerning a matter in which he has an interest which is to his knowledge a material interest (otherwise than by virtue of his interests in shares or debentures or other securities of, or otherwise in or through, the Company), unless his interest arises only because the case falls within one or more of the following:

(a) the resolution relates to the giving to him of a guarantee, security or indemnity in respect of money lent or obligations incurred by him at the request of or for the benefit of the Company or any of its subsidiaries;

(b) the resolution relates to the giving to a third party of a guarantee, security or indemnity in respect of an obligation of the Company or any of its subsidiaries for which the director has assumed responsibility in whole or part, alone or jointly with others under a guarantee or indemnity or by the giving of security;

(c) his interest arises in relation to the subscription or purchase by him of shares, debentures or other securities of the Company under an offer or invitation to members or debenture holders of the Company, or any class of them, or to the public or any section of them;

(d) his interest arises by virtue of his being, or intending to become, a participant in the underwriting or sub-underwriting of an offer of any shares, debentures or other securities of or by the Company or any of its subsidiaries for subscription, purchase or exchange;

(e) the resolution relates to a proposal concerning any other body corporate in which he is interested, directly or indirectly, and whether as an officer, shareholder, creditor or otherwise howsoever, provided that he is not the holder of or beneficially interested in one per cent. or more of any class of the equity share capital of such body corporate (or any other body corporate through which his interest is derived) or of the voting rights available to members of the relevant body corporate (any such interest being deemed for the purpose of this article to be a material interest in all circumstances);

(f) the resolution relates in any way to a retirement benefits scheme which has been approved, or is conditional upon approval, by HMRC for taxation purposes;

(g) the resolution relates to any contract or arrangement for the benefit of employees of the Company or of any of its subsidiaries and does not provide in respect of any director as such any privilege or advantage not accorded to the employees to whom the contract or arrangement relates; or

(h) the resolution relates in any way to insurance which the Company proposes to maintain or purchase for the benefit of directors or for the benefit of persons who include the directors.

7.14.3 The board may authorise any matter proposed to it which, if not authorised, would involve a breach by a director of his duty to avoid conflicts of interest under the Act. The board may make such authorisation subject to any limits or conditions it expressly imposes, but the authorisation is otherwise to be given to the fullest extent permitted. The authorisation may be varied or terminated by the board at any time.

7.15 ***Indemnification of Directors***

The directors, the company secretary and other officers of the Company or an associated company (other than auditors), including persons formerly holding such positions, shall, to the fullest extent permitted under the Act, be indemnified by the Company against all costs, charges, expenses or liabilities incurred in the exercise, execution or discharge of his powers or duties for the Company.

7.16 ***Borrowing powers***

The board may exercise all of the Company's powers to borrow money and to mortgage or charge the Company's undertaking, property and uncalled capital of the Company, or any part thereof and (subject to applicable laws) to create and issue debentures and other securities, whether outright or as collateral security for any debt, liability or obligation of the Company or of a third party.

7.17 ***Meetings of Shareholders and Shareholder Voting***

Meetings of the Shareholders can be called by the board whenever they deem fit, including on requisition of the Shareholders, pursuant to the provisions of the Act. In addition, the board is required to convene annual general meetings in accordance with the Act. The Company is required to give notice of a general meeting to each Shareholder (other than a person who, under the Articles or pursuant to any restrictions imposed on any shares, is not entitled to receive such a notice or to whom the Company, in accordance with applicable law, has not sent and is not required to send its latest annual accounts and reports), to the Directors and to the auditors. For these purposes Shareholders are the persons registered in the Company's register of members as being holders of Ordinary Shares at any particular time on any particular record date fixed by the board that (in accordance with the CREST Regulations) is not more than 21 days before the sending out of the notices.

Every Shareholder who is present at a general meeting in person or by proxy is entitled to one vote on a resolution put to the meeting on a show of hands and to one vote for every Ordinary Share of which he is the holder on a resolution put to the meeting on a poll. If two or more joint holders of an Ordinary Share tender a vote in respect of the same Ordinary Share, the vote tendered by the first named of those holders in the register of members will be accepted to the exclusion of the votes of the other joint holders. Shareholders will not be permitted to vote unless all sums payable by him in respect of his Ordinary Share have been paid.

A Shareholder who is entitled to attend and vote at a general meeting is entitled to appoint another person, or two or more persons in respect of different shares held by him, as his proxy to exercise all or any of his rights to attend and to speak and to vote at the meeting.

8. MANDATORY BIDS, SQUEEZE-OUT AND SELL-OUT RULES RELATING TO THE ORDINARY SHARES

8.1 ***Mandatory bid***

The City Code governs, *amongst other things*, transactions which may result in a change of control of a company to which the City Code applies. Under Rule 9 of the City Code, where any person acquires, whether by a series of transactions over a period of time or not, an interest in shares which (taken together with shares in which persons acting in concert with him are interested) carry 30 per cent. or more of the voting rights of a company which is subject to the City Code, that person is normally required by the Panel to make a general offer to all the remaining shareholders of that company to acquire their shares. Similarly, when any person, together with persons acting in concert with him, is interested in shares which in aggregate carry not less than 30 per cent. of the voting rights of a company and not more than 50 per cent. of such voting rights and such person, or any person acting in concert with him, acquires an interest in any other shares which increases the percentage of shares carrying voting rights in which he is interested, a general offer will normally be required in accordance with Rule 9.

Unless the Panel otherwise consents, an offer under Rule 9 must be made in cash (or be accompanied by a cash alternative) and at not less than the highest price paid by the person required to make the offer, or any person acting in concert with him, for any interest in shares of the company during the 12 months prior to the announcement of the offer.

8.2 ***Concert Parties***

Following Admission, the Company will have two distinct concert parties as follows:

8.2.1 *Amphion Concert Party*

Following Admission, Amphion, Robert Bertoldi, Richard Morgan and associated persons and the L. Jean Macaleer Revocable Trust will be deemed to be acting in concert for the purposes of the Takeover Code in relation to their shareholdings in the Company. Between them, on Admission, the Amphion Concert Party will have an interest in 18,115,317 Ordinary Shares, amounting to approximately 24.7 per cent. of the Enlarged Share Capital.

The table below shows the holdings and interests of the members of the Amphion Concert Party:

	No. of Ordinary Shares held on Admission	*Percentage of Enlarged Share Capital*	*Options and Warrants held on Admission*	*Total holding on a fully diluted basis*	*Percentage holding on a fully diluted basis*
Amphion	17,034,853	23.2	1,803,066	18,837,919	19.2
Robert Bertoldi*	93,333	0.1	977,899	1,071,232	1.1
Richard Morgan*†	70,000	0.09	977,899	1,047,899	1.1
Charlotte Morgan	35,000	0.05	0	35,000	0.04
Oliver Morgan	35,000	0.05	0	35,000	0.04
L. Jean Macaleer Revocable Trust	847,131	1.2	0	847,131	0.9
Total	18,115,317	24.7	3,758,864	21,874,181	22.4

* *Directors of Amphion*

† *Includes shares held by Anne Morgan*

(a) Information on members of the Amphion Concert Party

Biographical information on Robert Bertoldi and Richard Morgan is set out in paragraph 8 of Part I of this Document. Richard Morgan's wife Anne Morgan and his two adult children, Charlotte Morgan and Oliver Morgan are also deemed to be acting in concert. The L. Jean Macaleer Revocable Trust is a trust for the benefit of the children of James Macaleer, a former director and significant shareholder in Amphion who passed away in October 2015. The shares formerly held by Mr Macaleer were transferred into the trust in November 2017 as part of the administration of Mr Macaleer's estate.

(b) Restrictions on the members of the Amphion Concert Party

On Admission, the Amphion Concert Party will own less than 30 per cent. of the voting rights in the Company. Members of the concert party will be free to acquire further Ordinary Shares so as to increase the concert party's combined holding in the Company without giving rise to an obligation under Rule 9 of the Takeover Code providing that the total shareholding does not reach 30 per cent. of the Enlarged Share Capital.

As set out above, assuming exercise of all options and warrants held by members of the Amphion Concert Party and assuming no other subscriptions rights are exercised by any other shareholders, the Amphion Concert Party would hold 28.3 per cent. of the Enlarged Share Capital.

8.2.2 *Polarean Concert Party*

Following Admission, the Polarean Concert Party will be deemed to be acting in concert for the purposes of the Takeover Code in relation to their shareholdings in the Company. Between them, on Admission, the Polarean Concert Party will have an interest in 29,788,378 Ordinary Shares, amounting to approximately 40.6 per cent. of the Enlarged Share Capital.

The table below shows the holdings and interests of the members of the Polarean Concert Party:

	No. of Ordinary Shares held on Admission	*Percentage of Enlarged Share Capital*	*Options and Warrants held on Admission*	*Total holding on a fully diluted basis*	*Percentage holding on a fully diluted basis*
Bastiaan Driehuys	12,127,944	16.5	1,404,296	13,532,240	13.8
Kenneth West	0	0	1,883,760	1,883,760	1.9
Kenneth West and Suzanne West	336,085	0.5	0	336,085	0.3
Daybreak Capital Partners LLC	766,143	1.0	0	766,143	0.8
Ajay Khanna	85,130	0.1	0	85,130	0.09
Raghu Ballal	216,085	0.3	0	216,085	0.2
NUKEM Isotopes Imaging GmbH	9,839,118	13.4	0	9,839,118	10.1
Duke University	211,703	0.3	0	211,703	0.2
Juergen Laucht	0	0	454,240	454,240	0.5
John Sudol	6,206,121	8.5	1,336,000	7,542,121	7.7
Technology Commercialization Group, LLC	0	0	2,801,084	2,801,084	2.9
Total	29,788,378	40.6	7,879,380	37,667,758	38.5

(a) Information on members of the Polarean Concert Party

Bastiaan Driehuys and John Sudol are deemed to be acting in concert as they are founding members of the Subsidiary. Kenneth West is the former Chief Executive Officer of the Subsidiary so, along with his wife Suzanne West, he is also deemed to be acting in concert with Bastiaan Driehuys and John Sudol. Raghu Ballal is a member of the Polarean Concert Party as he is Bastiaan Driehuys' father in law.

Biographical information on Bastiaan Driehuys (who is a founding member of the Subsidiary along with John Sudol), Kenneth West and Juergen Laucht is set out in paragraph 8 of Part I of this Document.

Daybreak Capital Partners LLC ("**Daybreak**") is an investment banking firm that has provided services to the Subsidiary, of which Ajay Khanna is a principal. Technology Commercialization Group, LLC, of which Kenneth West is a partner and shareholder, provides consultancy services to Daybreak on an ad hoc basis.

NUKEM Isotopes Imaging GmbH, of which Juergen Laucht is Managing Director, is a key supplier to the Subsidiary and information regarding Nukem's Supply Agreement with the Subsidiary is set out in paragraph 14 of Part VII of this Document.

The Subsidiary has a long standing relationship with Duke University where Bastiaan Driehuys is a Professor of Radiology and entered into a Licence Agreement with Duke University in 2014, details of which are set out in paragraph 13 of Part VII of this Document. In addition, it is intended that one of the phase III clinical trials will take place at Duke University.

(b) Restrictions on the members of the Polarean Concert Party

On Admission, the Polarean Concert Party will own more than 30 per cent. of the voting rights in the Company. Members of the concert party may not acquire further Ordinary Shares so as to increase the concert party's combined holding in the Company without giving rise to an obligation under Rule 9 of the Takeover Code.

As set out above, assuming exercise of all options and warrants held by members of the Polarean Concert Party and assuming no other subscriptions rights are exercised by any

other shareholders, the Polarean Concert Party would hold 46.3 per cent. of the Enlarged Share Capital.

Where a concert party holds over 50 per cent. of the voting rights in a company, no obligation under Rule 9 normally arises from acquisitions by any member of the concert party. However, the acquisition by a single member of the concert party who holds between 30 per cent. and 50 per cent. of the voting rights may be regarded by the Panel as giving rise to an obligation to make an offer for the entire company.

8.3 ***Squeeze-out***

Under the Act, if an offeror were to acquire 90 per cent. of the Ordinary Shares within four months of making its offer, it could then compulsorily acquire the remaining 10 per cent. It would do so by sending a notice to outstanding Shareholders telling them that it will compulsorily acquire their shares and then, six weeks later, it would execute a transfer of the outstanding shares in its favour and pay the consideration to the Company, which would hold the consideration on trust for outstanding Shareholders. The consideration offered to the Shareholders whose shares are compulsorily acquired under the Act must, in general, be the same as the consideration that was available under the takeover offer.

8.4 ***Sell-out***

The Act also gives minority Shareholders in the Company a right to be bought out in certain circumstances by an offeror who had made a takeover offer. If a takeover offer related to all the Ordinary Shares and at any time before the end of the period within which the offer could be accepted the offeror held or had agreed to acquire not less than 90 per cent. of the Ordinary Shares, any holder of shares to which the offer relates who has not accepted the offer can by a written communication to the offeror require it to acquire those shares. The offeror would be required to give any Shareholder notice of his right to be bought out within one month of that right arising. The offeror may impose a time limit on the rights of minority Shareholders to be bought out, but that period cannot end less than three months after the end of the acceptance period. If a Shareholder exercises its rights, the offeror is bound to acquire those shares on the terms of the offer or on such other terms as may be agreed.

9. DIRECTORS' AND OTHER INTERESTS

9.1 The interests of the Directors and their immediate families (all of which are beneficial unless otherwise stated) in the issued share capital of the Company which have been notified to the Company pursuant to section 324 and 328 of the Act (or are required to be disclosed in the register of directors' interests pursuant to Section 325 of the Act) and the interests of connected persons of a Director within the meaning of section 346 of the Act which would, if the connected person were a Director, be required to be disclosed in accordance with the foregoing and the existence of which is known to or could with reasonable diligence be ascertained by that Director, as at the date of this Document and as expected to be immediately following Admission are as follows:

9.1.1 Prior to, and on, Admission, interests in the Ordinary Shares are and will be as follows:

	Prior to Admission		*On Admission*	
Name	*Number of issued Ordinary Shares*	*Percentage of Issued Share capital*	*Number of issued Ordinary Shares*	*Percentage of Issued Share capital*
Richard Morgan	–	–	140,000	0.2
Richard Hullihen	1,540,211	3.2	1,780,211	2.4
Kenneth West	216,085	0.4	336,085	0.5
Bastiaan Driehuys	12,007,994	24.8	12,127,994	16.5
Jonathan Allis	–	–	–	–
Robert Bertoldi	–	–	93,333	0.1
Juergen Laucht	–	–	–	–

9.1.2 Prior to, and on, Admission, the following options over Ordinary Shares will be outstanding:

Name	*Share Option Plan*	*Number of Ordinary Shares under option*	*Exercise price*	*Latest exercise date*
Richard Morgan	–	–	–	–
Richard Hullihen	–	–	–	–
Kenneth West	2011 Plan	267,200	US$0.90	16 Dec 2025
Bastiaan Driehuys	2011 Plan	400,800	US$0.11	15 Dec 2024
		400,800	US$0.90	16 Dec 2025
Jonathan Allis	Pre Admission Share Option Scheme	534,400	£0.15	29 March 2022
Robert Bertoldi	–	–	–	–
Juergen Laucht	–	–	–	–

9.1.3 Prior to, and on, Admission, the following Warrants to subscribe for Ordinary Shares will be outstanding:

Name	*Warrant Instrument*	*Number of Ordinary Shares under warrant*	*Exercise price*	*Latest exercise date*
Richard Morgan	Amphion	523,659	£0.25	31 May 2018
Richard Hullihen	–	–	–	–
Kenneth West	–	–	–	–
Bastiaan Driehuys	Polarean	148,456	US$0.01	21 April 2014
Jonathan Allis	–	–	–	–
Robert Bertoldi	Amphion	523,659	£0.25	31 May 2018
Juergen Laucht	–	–	–	–

 # See para 6.3.2 of this Part VII

9.2 Save as set out in paragraphs 12, 13 and 14 of this Part VII, no Director is or has been interested in any transaction which is or was unusual in its nature or conditions or significant to the business of the Company during the current or immediately preceding financial year and which was affected by the Company and remains in any respect outstanding or unperformed.

9.3 There are no loans made or guarantees granted or provided by the Company or the Subsidiary to or for the benefit of any Director which are outstanding.

9.4 Neither the Directors nor any major Shareholders have different voting rights to the other Shareholders.

9.5 None of the Directors or members of their family has a financial product whose value in whole or in part is determined directly or indirectly by reference to the price of Ordinary Shares.

10. ADDITIONAL INFORMATION ON THE DIRECTORS

10.1 In addition to their directorship with the Company, the Directors hold or have held the following directorships or have been partners in the following partnerships within the five years prior to the date of this Document:

Director	*Current Directorships/Partnerships*	*Past Directorships/Partnerships*
Richard Morgan	Amphion Innovations plc Amphion Innovations US, Inc. DataTern Inc Jacaranda Holdings LLC Motif Bio plc Polarean, Inc. Wellgen Inc	Axcess Inc FireStar Software Inc Kromek Group plc Kromek Limited
Richard Hullihen	Polarean, Inc.	None
Kenneth West	Polarean, Inc. Redbud Labs, Inc Technology Commercialization Group, LLC	None
Bastiaan Driehuys	Polarean, Inc.	None
Jonathan Allis	Polarean, Inc. Blue Earth Diagnostics Ltd.	None
Robert Bertoldi	Amphion Capital Partners LLC Amphion Capital Management LLC Amphion Innovations plc Amphion Innovations US Inc. Amphion Partners LLC Antiope Partners LLC Axcess International, Inc. DataTern Inc. Motif Bio plc Motif Biosciences, Inc. Polarean, Inc. VennWorks LLC WellGen Inc.	m2m Imaging Corp.
Juergen Laucht	Polarean, Inc. Nukem Isotopes GmbH Nukem Isotopes Imaging GmbH	None

10.2 Richard Morgan and Robert Bertoldi are former directors of Vennworks Ltd, which was placed into voluntary liquidation and dissolved in February 2005. It was the wholly-owned UK subsidiary of Vennworks LLC, of which they are currently directors. Vennworks LLC was formed in 1999.

10.3 Ontos Inc. ("**Ontos**") was a portfolio investment of Vennworks LLC and Amphion Ventures LP of which Richard Morgan and Robert Bertoldi were directors. In September 2001, certain assets of Ontos were sold to FireStar Software, Inc. for cash and the assumption of shareholder debt. In June 2002, two former directors commenced proceeding against Ontos, its directors and FireStar alleging a breach of employment contracts and alleging fraud in the sale of assets to FireStar. In January 2004 Ontos filed for Chapter 7 liquidation and in March 2005, the court appointed Trustee in Bankruptcy agreed to settle all claims for US$50,000.

10.4 In 2000 Richard Morgan was a director and investor (with others) in Idaya Limited ("**Idaya**"), a UK software company. He became the sole director in 2002 by which time he was the only remaining active investor. Idaya was placed in a creditors' voluntary liquidation in December 2002 having failed to raise new funds. All creditors have since been paid.

10.5 Robert Bertoldi was a director of Ethentica, Inc. from 2000 to 2001. In 2001 Ethentica, Inc. was placed in voluntary Chapter 11 bankruptcy reorganisation. It was purchased out of Chapter 11 by Security First Corporation and continues to trade as Ethentica, Inc.

10.6 Save as disclosed above none of the Directors has:

10.6.1 any unspent convictions in relation to indictable offences;

10.6.2 had any bankruptcy order made against him or entered into any voluntary arrangements;

10.6.3 been a director of a company which has been placed in receivership, compulsory liquidation, administration, been subject to a voluntary arrangement or any composition or arrangement with its creditors generally or any class of its creditors whilst he was a director of that company or within the 12 months after he ceased to be a director of that company;

10.6.4 been a partner in any partnership which has been placed in compulsory liquidation, administration or been the subject of a partnership voluntary arrangement whilst he was a partner in that partnership or within the 12 months after he ceased to be a partner in that partnership;

10.6.5 been the owner of any assets or a partner in any partnership which has been placed in receivership whilst he was a partner in that partnership or within the 12 months after he ceased to be a partner in that partnership;

10.6.6 been publicly criticised by any statutory or regulatory authority (including recognised professional bodies); or

10.6.7 been disqualified by a court from acting as a director of any company or from acting in the management or conduct of the affairs of a Company.

10.7 Save as disclosed in this Document, no Director is or has been interested in any transaction which is or was unusual in its nature or conditions or significant to the business of the Group and which was effected by the Group and remains in any respect outstanding or unperformed.

10.8 No loans made or guarantees granted or provided by the Group to or for the benefit of any Director are outstanding.

11. SIGNIFICANT SHAREHOLDERS

11.1 Insofar as is known to the Company and the Directors, as at the close of business on 22 March 2018 (being the latest practicable date prior to the publication of this Document), the following persons are, and will following Admission, the Placing and Subscription, be interested directly or indirectly, in 3 per cent. or more of the Ordinary Shares:

	Prior to Admission		*On Admission*	
Name	*No. of issued Ordinary Shares*	*Percentage of Issued Share capital*	*No. of issued Ordinary Shares*	*Percentage of Issued Share Capital*
Amphion Innovations plc	14,174,853	29.2	17,034,853	23.2
Bastiaan Driehuys,	12,007,994	24.8	12,127,994	16.5
NUKEM Isotopes Imaging GmbH	6,745,784	13.9	9,839,118	13.4
John Sudol	6,206,121	12.8	6,206,121	8.5
W.B.Nominees Limited	4,191,914	8.6	5,851,929	8.0
Richard Hullihen	1,540,221	3.2	1,780,221	2.4

11.2 So far as the Directors are aware, save as disclosed in paragraph 11.1 above, there are no persons who, immediately following the Placing and Subscription, will, directly or indirectly, be interested in three per cent. or more of the capital of the Company or who, directly or indirectly, jointly or severally,

exercise or could exercise control over the Company.

11.3 No significant holder of Ordinary Shares, as listed above in paragraph 11.1, has voting rights different to other Shareholders.

11.4 Save as disclosed in paragraph 11.1 of this Part VII, the Directors are not aware of any persons who, directly or indirectly, jointly or severally, exercise or could exercise control over the Company. To the best knowledge of the Company there are no arrangements which may at a date subsequent to Admission result in a change of control of the Company

12. DIRECTORS' AGREEMENTS AND LETTERS OF APPOINTMENT

12.1 ***Executive Director's Service Agreement***

On 23 March 2018 the Company entered into service agreements with each of Richard Hullihen and Kenneth West pursuant to which they will be employed on a full time basis with effect from Admission as the Chief Executive Officer and Chief Operating Officer of the Company, respectively. Under the terms of the agreements, Mr Hullihen will be paid a gross annual salary of US$275,000, with Mr West receiving US$225,000. Messrs Hullihen and West are each eligible to participate in the Company's discretionary annual bonus scheme in an amount to be determined by the Remuneration Committee at its absolute discretion.

The employment of each of Messrs Hullihen and West will continue until terminated by either party giving written notice to the other of six months. In addition, the Company may terminate Mr Hullihen's or Mr West's employment without notice in certain circumstances. The agreements contain garden leave provisions which can be utilised in event that any of the agreements are terminated by the Company.

The agreements contain confidentiality, non-competition and non-solicitation provisions effective for a period of six months following the termination of either Mr Hullihen's or Mr West's employment.

12.2 ***Non-Executive Directors' letters of appointment***

Richard Morgan, Robert Bertoldi, Jonathan Allis, Bastiaan Driehuys and Juergen Laucht have each entered into a letter of appointment with the Company dated 23 March 2018, under the terms of which they each agreed to act as a Non-Executive Director of the Company with effect from Admission. The appointments will (subject to Admission) continue for an initial term of up to three years from Admission (subject to re-election by Shareholders as required by the Articles), and are terminable earlier by the Company in various specified circumstances and in any event by either party on one month's prior written notice.

The Company has agreed that Mr Morgan shall receive a fee of US$100,000 for his services as Chairman of the Board with an addition sum of US$10,000 payable for standing as chairman of the remuneration committee and US$5,000 for serving as a member of the audit committee (a total of US$115,000). Messrs, Bertoldi, Allis, Driehuys and Laucht shall each receive an annual fee of US$45,000 for their services as Non-Executive Directors. Mr Bertoldi shall receive an additional US$10,000 for acting as the chairman of the audit committee. Messrs Driehuys and Laucht shall receive US$5,000 for each committee appointment (Mr Driehuys receiving an additional US$5,000 and Mr Laucht US$10,000).

12.3 ***Consultancy Agreement with Bastiaan Driehuys***

The Company entered into a consultancy agreement with Bastiaan Driehuys on 23 March 2018, pursuant to which the Company has hired Mr Driehuys as an independent contractor to provide general consultancy services relating to the Company's technology. The particular requirements of each project that Mr Driehuys is engaged on will be set out in a separate statement of work, which will also set out any fees and any time restrictions related to that project. The Company has acknowledged in the agreement that any services provided to the Company by Mr Driehuys under this agreement shall not affect the obligations Mr Driehuys owes to Duke University under his engagement as a Professor at the institution.

The agreement can be terminated upon 30 days' written notice by either the Company or Mr Driehuys and in certain circumstances the Company also has the right to terminate the agreement with immediate effect. The agreement contains customary warranties and representations which have been given by Mr Driehuys, including in relation to confidentiality and intellectual property. The agreement is governed by the laws of North Carolina.

12.4 ***General***

12.4.1 Save as disclosed in this paragraph 12, the Company has not amended or entered into any service agreements with any Director within the last 6 months and no Director has a service agreement that has more than 12 months to run.

12.4.2 Save as disclosed in paragraphs 12.1-12.3 above, there are no service contracts or agreements existing or proposed between any Director, or parties in which they are interested, and the Company.

12.4.3 There are no proposals existing in connection with the Admission whereby any member of the administrative or management bodies of the Company or any other person and the Company which provide for benefits upon termination of employment or in connection with retirement from office.

12.4.4 From the date of the Company's incorporation, being 24 October 2016, to the date of this Document, no remuneration has been paid, including pension contributions and benefits in kind, to any of the Directors.

12.4.5 It is estimated that under the arrangements in force at the date of this Document, the maximum aggregate remuneration and benefits in kind which will be paid for the services of the Directors for the financial period ending 30 June 2018 will be approximately £107,000.

13. MATERIAL CONTRACTS

The following contracts, not being contracts entered into in the ordinary course of business, have been entered into by the Company or the Subsidiary during the two years immediately preceding the date of this Document and contain provisions under which a member of the Group has an obligation or entitlement which is material at the date of this Document:

13.1 *Agreements entered into by the Company*

13.1.1 ***Pre-Admission Fundraise Subscription Agreements***

On 21 December 2017, the Company entered into subscription agreements with various investors pursuant to which the investors have agreed to provide the Company with a total of £647,127 in exchange for the issue of convertible loan notes (the "**Notes**"). The terms of the Notes are governed by an instrument constituting convertible promissory notes, dated 12 December 2017.

The Notes will accrue interest at 10 per cent. per annum and the amount outstanding under the Notes, together with accrued interest, shall be automatically converted upon Admission into fully paid Ordinary Shares at a conversion price equal to 90 per cent. of the issue price of the Notes. In the event that Admission (and this automatic conversion) has not occurred by 31 March 2018, the Notes will be repaid in cash commencing on 1 April 2018. The Notes are transferable and are governed by English law.

13.1.2 ***Placing Agreement between the Company, the Directors and Northland***

The Company, the Directors and Northland have entered into a placing agreement pursuant to which, conditional, among other things, on Admission taking place on or before 29 March 2018 (or such later date as the Company and Northland may agree, being not later than 6 April 2018), Northland has agreed to use its reasonable endeavours to procure placees for the Placing Shares at the Placing Price. The Placing Agreement contains indemnities and warranties from the Company and the Directors in favour of Northland together with

provisions which enable Northland to terminate the Placing Agreement in certain circumstances prior to Admission, including circumstances where any of the warranties are in the reasonable opinion of Northland untrue or inaccurate which Northland considers is material in the context of the Placing and/or Admission. The Company has agreed to pay to Northland a commission related to the aggregate value, at the Placing Price, of the Placing Shares. The agreement is governed by English law.

13.1.3 ***Option Agreement***

The Company has granted Northland a right to subscribe for 250,000 Ordinary Shares at an exercise price of £0.15 per share, pursuant to the terms of an agreement dated 23 March 2018 (the "**Option**"). Under the terms of the agreement, the Option shall lapse on the third anniversary of Admission.

Northland must give 14 days' written notice of its decision to exercise the Option and the Company must satisfy the exercise notice within 3 days of the end of the notice period. The number of Ordinary Shares which would be granted upon exercise of the Option may be adjusted in the event that changes are made to the Ordinary Shares (including sub-division and consolidation).

The Company has given certain customary warranties to Northland in relation to the granting of the Option. The agreement is governed by English law.

13.1.4 ***Subscription Agreements***

The Subscribers have entered into Subscription Agreements, dated 22 March 2018, with the Company pursuant to which they have conditionally agreed to subscribe for a total of 6,666,667 Subscription Shares at the Subscription Price. The Subscription Agreements are conditional on: (i) the Company entering into the Placing Agreement and that agreement becoming unconditional save as to Admission; and (ii) Admission occurring on or before 8.00 a.m. London time on 29 March 2018 (or such later date as the Company and Northland shall agree, not to be later than 6 April 2018). In accordance with the requirements of the Subscription Agreements the Subscribers are required to give certain customary confirmations. The Subscription Agreements are governed by English law.

13.1.5 ***Lock-in and Orderly Market Agreements between each of the Locked-In Persons, the Company and Northland***

Lock-in and Orderly Market Agreements were entered into between each of the Locked-in Persons, the Company and Northland, on 23 March 2018. Pursuant to the terms of the agreements, the Locked-in Persons have agreed not to dispose of any interest in Ordinary Shares for the period of 12 months following Admission, except in certain very limited circumstances and for a further period of 12 months following the expiry of the initial 12 month period, only to dispose of an interest in Ordinary Shares following consultation with Northland and provided such disposal is effected through Northland and in such manner as they may reasonably require with a view to maintenance of an orderly market in the Ordinary Shares.

The Directors, Amphion, Kiarash Emami, Neil Wadehra and William Patrick are locked in pursuant to Rule 7 of the AIM Rules and the agreements between these people, the Company and Northland relate to, in aggregate, 31,272,486 Ordinary Shares.

NUKEM, John Sudol and TCG are not subject to a Rule 7 lock-in, but have agreed to the terms of the lock-in and orderly market agreements in relation to their, in aggregate, 16,045,239 Ordinary Shares.

The Lock-in and Orderly Market Agreements are each governed by English law.

13.1.6 ***Nominated Adviser and Broker Agreement between the Company and Northland***

A nominated adviser and broker agreement to be dated 29 March 2018 between the Company and Northland, pursuant to which the Company will appoint Northland to act as nominated adviser and broker to the Company for the purposes of the AIM Rules.

The agreement has a minimum term of 12 months and thereafter is subject to termination on the giving of 3 months' notice such notice not to be given prior to the expiry of the initial term. Either party may nevertheless terminate the agreement with immediate effect if the other party is in material breach of its obligations under the agreement.

The agreement contains certain undertakings and indemnities given by the Company in respect of, among other things, compliance with all applicable laws and regulations. The agreement is governed by English law.

13.1.7 ***Relationship Agreement between the Company, Northland, Bastiaan Driehuys and Amphion***

On 29 March 2018 the Company will enter into a relationship agreement with Northland, Bastiaan Driehuys and Amphion to regulate the relationship between the parties, as Mr Driehuys and Amphion are substantial shareholders in the Company and will continue to be so after Admission. The agreement will ensure that all transactions and activities between the parties are conducted on an arm's length and normal commercial basis.

Under the terms of the agreement, Mr Driehuys and Amphion will undertake amongst other things, that for so long as they, or any of their associates have an aggregate interest in 25 per cent. or more of the voting rights attached to the Ordinary Shares they will do all such things as are reasonable to ensure that the Company, and any Group Company, is able to conduct its business independently of them and their associates and will not take any action which would prejudice the Company's ability to do this. Mr Driehuys and Amphion will agree that in taking decisions relating to the Company they will act in the best interests of the shareholders as a whole independently of what may be in the best interests of them or any of their associates.

The agreement will terminate in the event that the Ordinary Shares cease to be admitted to trading on AIM or if Mr Driehuys and Amphion or any of their associates cease to have an aggregate interest in 25 per cent. or more of the voting rights attaching to the Ordinary Shares, however, if Mr Driehuys and/or Amphion or any of their associates later obtain an aggregate interest in 25 per cent. or more of the voting rights attaching to the Ordinary Shares they have agreed that they shall enter into a new agreement with the Company in substantially the same terms as this agreement, to the extent applicable. The agreement is governed by English law.

13.1.8 ***Registrar Agreement between the Company and Share Registrars***

On 29 January 2018, the Company entered into an agreement with the Registrars pursuant to which the Company appointed Share Registrars as its share registrar to provide, or procure the provision of, share registration services and certain online services with effect from Admission (the "**Registrar Agreement**").

Pursuant to the terms of the Registrar Agreement, the Company is to pay certain fees and charges to the Registrar including annual fees, set-up fees and in certain circumstances fees for transfers and insurance.

The Registrar Agreement is for an initial period of 12 months and thereafter will be renewed on an annual basis but will be terminable by either party giving 6 months' written notice to the other. In certain circumstances the parties will be entitled to terminate the Registrar Agreement without notice. The Registrar Agreement is governed by English law.

13.1.9 ***Agreement with Pharma Ventures Limited***

An agreement dated 27 July 2017 has been entered into between the Company and PharmaVentures Limited, pursuant to which the Company has appointed PharmaVentures Limited to provide the Company with an independent expert report on the technical and commercial feasibility of the Company's technology and products pursuant to the AIM Rules. The Company has agreed to pay PharmaVentures Limited a fee upon completion of the expert report, together with all reasonable expenses and VAT. The agreement contains certain undertakings and indemnities given by the Company in respect of, among other things, compliance with all applicable laws and regulations. The agreement is governed by English law.

13.1.10 ***Employment agreement with Stephen Austin***

The Company will engage Stephen Austin to provide his services as the company secretary for the Company by way of an employment agreement to be dated 23 March 2018. Mr Austin will be engaged as required from time to time to provide company secretarial services including: (i) maintaining the statutory books and registers of the Company and making the books and registers available for statutory inspection; (ii) preparing minutes of board and shareholder meetings and preparing the resolutions; (iii) providing reminders of filing deadlines for annual returns and accounts; (iv) providing a registered office facility and inspection address for the company registers; and (v) forwarding official notices served at the registered office to a nominated contact.

Mr Austin's appointment commenced on 23 March 2018. Initially Mr Austin will be paid £800 per month to provide his services. This is to be reviewed periodically by the Company and may be increased up to a rate of £2,500 per month.

The agreement can be terminated by three months' written notice given by either party. The Company has the ability to terminate the agreement without notice in certain circumstances. The agreement contains customary confidentiality obligations and is governed by English law.

13.1.11 ***Services Agreement between the Company and The Life Sciences Division Ltd ("TLSD")***

The Company entered into an agreement dated 4 December 2017 with TLSD pursuant to which TLSD has agreed to act as financial adviser and introducer to the Company and provide ancillary corporate advice as requested by the Company. Where any potential investor is identified by TLSD, the parties have acknowledged that the terms of any proposed investment must be acceptable to the Company (at its absolute discretion) before it will qualify for compensation under the agreement.

The Company has agreed to pay TLSD £2,000 per month with effect from Admission, provided that TLSD introduces parties who invest a minimum of £2,000,000 in the Company. The Company has also agreed to pay a success fee to TLSD of 5 per cent. of the gross proceeds raised from parties introduced to the Company by TLSD as part of an equity fundraising undertaken by the Company and 3 per cent. of the total principal amount of any debt received from a party introduced by TLSD in a debt financing undertaken by the Company. Success fees have also been agreed for mergers and acquisitions, strategic investments, non-dilutive financing and other transactions.

The agreement will continue for a fixed period of 12 months from the date of the agreement unless terminated by either party giving the other 30 days' written notice. The agreement can also be terminated with immediate effect in certain circumstances, including for a material breach of its terms. The term of the agreement can be extended by mutual agreement.

The agreement is governed by English law.

13.1.12 ***Agreement between the Company and Plumtree Capital Limited ("PCL")***

The Company entered into an agreement dated 20 November 2017 with PCL pursuant to which PCL has agreed to act as introducer to the Company and provide ancillary corporate advice as requested by the Company. Where any potential investor is identified by PCL, the parties have acknowledged that the terms of any proposed investment must be acceptable to the Company (at its absolute discretion) before it will qualify for compensation under the agreement.

The Company has agreed to pay PCL commission of 5 per cent. on the value of each investment by investors from time to time introduced to the Company by PCL. The Company has also agreed to pay all expenses properly incurred by PCL in connection with the agreement, provided that PCL shall not incur any expenses exceeding £100 without the prior consent of the Company.

The agreement is not exclusive and can be terminated by either party giving the other 30 days' written notice. The agreement can also be terminated with immediate effect in certain circumstances, including for a material breach of its terms.

The agreement is governed by English law.

13.1.13 ***Placement Agreement between the Company, MC Services AG ("MCS") and Kontor Stöwer Asset Management GmbH ("KSAM")***

On 17 January 2018, the Company entered into a placement agreement pursuant to which MCS and KSAM have agreed to act as agents for the Company, introducing possible investors, with the intention that they will participate in the Placing. It has been agreed that MCS and KSAM shall receive a commission of 5 per cent. in relation to any funds that are received by the Company as a result of an introduction by MCS and KSAM. Warrants will also be granted to MCS and KSAM on any capital contributed to the Company by the investors introduced. A total of 3,400 MCS Warrants are to be granted at Admission pursuant to this agreement (being one per cent. of the transaction volume at the Placing Price). The agreement will terminate automatically on 30 April 2018 except in the event of a material breach of the terms of the agreement which may result in an earlier termination. The agreement is subject to German law.

13.1.14 ***Master Agreement for the Provision of Investor Relations and Public Relations Services with MC Services AG ("MCS")***

An agreement for the provision of investor relations services by MCS was entered into by the Company on 17 January 2018. Under the terms of the Agreement, MCS will assist with raising the profile of the Company with potential investors in continental Europe, including developing investor relations strategies, and further build the community supporting investors who participate in the Placing. This will include maintaining contact with investors and providing updates on the Company's progress. The Company has agreed that MCS will be the exclusive provider of these services in Europe (not including France). The Company has agreed to pay fees for the services.

The agreement contains an obligation on the Company to provide MCS with the information required to carry out these activities and there is an indemnity in place which will cover MCS in the event that any claim is made against them by an investor as a result of using this information as set out in the agreement. There are also standard confidentiality obligations on each party. The agreement will remain in place unless terminated by either party on 6 months' written notice and is subject to German law in the event of any dispute.

13.2 ***Agreements entered into by the Subsidiary***

13.2.1 ***Duke License Agreement***

The Subsidiary entered into an agreement on 1 February 2014 with Duke University, a non-profit educational and research institution organised under the laws of North Carolina ("**Duke**"), which was subsequently amended on 16 August 2016 (the "**Duke License Agreement**").

Pursuant to the terms of the agreement, Duke has granted the Subsidiary an exclusive, sub-licenseable license to Patent Application US 11/866,552. An amendment modified the patent rights transferred to include Patent Application No. PCT/US2015/016827 on hyperpolarised noble gas production systems with non-cluster suppression, detection and/or filtering and related methods and devices. Duke has also granted the Subsidiary a non-exclusive license to use know-how.

The rights granted under the Duke License Agreement will continue for the term of the Duke License Agreement (i.e. until the last of the patents subject to the agreement expires) unless the Duke License Agreement is terminated sooner according to its terms. The mutual obligations of non-disclosure and restricted use in regards to confidential information remain in effect for 5 years from the date of disclosure.

In consideration for the granting of the patent rights, the Subsidiary was required to:

a. grant Duke an amount of stock equal to 1 per cent. of outstanding Polarean common stock within 30 days of 1 February 2016. This was calculated as 7,923 shares of common stock;

b. pay to Duke a non-refundable, non-creditable running royalty on net sales of polarisers, being the greater of: (i) 0.1 per cent. of the net sales of polarisers; (ii) 20 per cent. of sub-licence fees; and (iii) the Minimum Royalty Amount of US$5,000 per year. The running royalty was calculated on 1 February 2016 at US$600 (which is the only amount that has been paid to Duke under this term of the agreement);

c. pay to Duke 20 per cent. of all non-royalty income received by the Subsidiary as a result of its license to the Patent Rights; and

d. reimburse Duke for patent prosecution costs and maintenance fees.

The Agreement may not be assigned without prior written consent of Duke, such consent not to be unreasonably withheld.

13.2.2 ***Master Service Agreement with Pharma Start LLC doing business as Firma Clinical Research (the "Pharma Start Agreement")***

The Subsidiary entered into a Master Service Agreement on 15 May 2017 with Pharma Start LLC, doing business as Firma Clinical Research ("**Pharma Start**"). Pursuant to the terms of the agreement, Pharma Start will act as an independent contractor and provide specific services for a clinical study sponsored by the Subsidiary during the proposed Phase III clinical trial. The Subsidiary shall pay fees to Pharma Start for the services provided pursuant to each Statement of Work that is agreed between the parties prior to the provision of any services.

Pursuant to the terms of the agreement, the Subsidiary will be required to interface and communicate with the regulatory authorities regarding the clinical studies.

The agreement contains customary indemnities and warranties from the Subsidiary to Pharma Start, and provides for strict confidentiality and non-disclosure requirements in relation to the information shared pursuant to the agreement. There are also provisions dealing with privacy and confidentiality of health information of study subjects, including a covenant that Pharma Start will comply "with all applicable laws governing privacy and confidentiality of health information of Study subjects, including without limitation [HIPAA and HITECH]". The parties have also agreed non-solicitation provisions. Both parties are required

to obtain and maintain general liability insurance and professional/errors and omissions liability insurance that meet certain mutually agreed minimums.

The agreement is valid for a period of three years from the date of execution, unless terminated by either party in accordance with the terms of the agreement. The agreement can be terminated by either party on 30 days' prior written notice for either party or in the event of a material breach of contract.

The agreement is governed by the laws of the state of Delaware.

13.2.3 ***Master Service Agreement with Icon Clinical Research Limited ("Icon") (the "Icon Agreement")***

On 5 May 2017 the Subsidiary entered into a Master Service Agreement with Icon, a clinical research organisation that will provide certain medical imaging services to the Subsidiary as an independent contractor during the proposed Phase III clinical trial. The Subsidiary shall pay fees to Icon for the services provided pursuant to each Statement of Work that is agreed between the parties prior to the provision of any services.

The agreement contains customary indemnities and warranties from the Subsidiary to Icon. There is a cap on liabilities set at the greater of US$50,000 or twice the amount of fees paid under the statement of work giving rise to the liability.

The parties will be subject to strict confidentiality and non-disclosure requirements in relation to the information shared pursuant to the agreement as well as for privacy and confidentiality of health information of study subjects.

Both parties are required to obtain and maintain general liability insurance and professional/errors and omissions liability insurance that meet certain mutually agreed minimums.

The Icon Agreement is valid for a period of five years, unless terminated by either party by giving 90 days' written notice to the other of the intention to terminate. The agreement can also be terminated in other circumstances, including where there is a material breach of the agreement.

In the event of a dispute, the agreement will be subject to arbitration in New York in accordance with the laws of the state of Delaware and any ruling of the arbitrators shall be binding on both parties.

13.2.4 ***Manufacturing Contract between the Subsidiary and Anuva Innovations, Inc.***

The Subsidiary has entered into a manufacturing contract with Anuva Innovations, Inc. ("**Anuva**") for the manufacture of three Xenon Hyperpolariser units (Model No. 9820) and three Measuring Stations (Model No. 2881), dated 29 September 2017 (Phase III). The Subsidiary initially entered into an agreement with Anuva for a documentation gap analysis (Phase I), dated 30 November 2015, and has subsequently entered into an agreement in relation to the generation of the manufacturing plan for the project (Phase II), dated 13 April 2016. On 1 June 2016 Anuva was acquired by Technosoft Engineering Innovations, Inc. ("**Technosoft**").

Phase I of the project has been completed and the Subsidiary is working with Technosoft on Phases II and III, which includes the procurement of materials, building a research unit finishing manufacturing documentation and building three clinical units. Once this has been completed, the Subsidiary will work with Technosoft on the manufacture of the polarisers. The Subsidiary has not yet placed an order for the polarisers, with partial payment, as required by the Phase III contract. The purchase has been delayed until after Admission. The total consideration under the agreements is estimated to be around US$190,000.

The contract may be cancelled upon thirty days' notice, however the Subsidiary must pay for all work performed to date.

13.2.5 ***Agreement with Facet Life Sciences, Inc.***

On 5 July 2017, the Subsidiary signed a statement of work with Facet Life Sciences, Inc. ("**Facet**") pursuant to which Facet agreed to provide flexible support to the Subsidiary through its Phase 3 clinical development program and submission of an NDA to the FDA. Facet has agreed to provide all necessary services to ensure the successful completion of the project. The parties will mutually agree deliverables and timelines as the project progresses.

Facet's assistance is to be provided on a time and materials basis with time to be billed in 15 minute intervals at agreed rates depending on the seniority and experience of the individuals involved.

13.2.6 ***Engagement Letter with Cherry Bekaert***

The Subsidiary has entered into an engagement letter with Cherry Bekaert, dated 12 December 2015, pursuant to which Cherry Bekaert was to provide certain audit services, including an 'audit of the balance sheet and review of the income statement', in connection with the Subsidiary's financials for the year ended 31 December 2015. The estimated fees for the services for the 2015 audit were set at US$30,000 - US$32,750, provided that any additional services requested by the Subsidiary would result in additional fees and require a separate written arrangement.

13.2.7 ***North Carolina Biotechnology Center ("NCBC") Loan Agreement***

By way of an agreement dated 10 March 2017 with the North Carolina Biotechnology Center ("**NCBC**"), the Subsidiary agreed that: (i) NCBC would lend to the Subsidiary a principal amount of US$250,000, such money to be provided to the Subsidiary in the form of advances (contingent upon progress of the project described therein, which includes the preparation by the Subsidiary of a prototype automated version of its hyperpolariser (the "**Project**")) and in accordance with the budget as attached thereto, for use exclusively for the Project; and (ii) the Subsidiary would repay the loan with interest pursuant to the terms, and on or before the maturity date.

The Loan Agreement provides that in the event that the Subsidiary "*[(i)]makes a Public Offering of the [Subsidiary's] Equity interests, … [(ii)]merges with or into, consolidates or reorganizes with, or converts into, any other corporation, limited liability company or other entity, other than a transaction in which the existing shareholders (or members) of the [Subsidiary] immediately prior to the transaction own fifty percent (50 per cent.) or more of the voting power of the surviving entity following the transaction, or [(iii)] in excess of fifty percent (50 per cent.) of the [Subsidiary's] voting power is sold and/or transferred to persons or entities that were not shareholders (or members) of the Company immediately prior to the transaction", the outstanding principal and accrued interest that has not been "converted pursuant to Paragraph 6*" (i.e. converted upon a qualified or non-qualified financing), shall be immediately due and payable to NCBC, and NCBC may terminate the Loan Agreement.

Other than as discussed above, the Loan Agreement may be terminated by mutual consent with sixty days' written notice, and NCBC may terminate: (i) upon written notice to the Subsidiary in the event that its agreement with the North Carolina Department of Commerce is terminated; or (ii) upon thirty days' written notice to the Subsidiary upon an event of default (which includes failure of the Subsidiary to make a payment, material breaches of the Loan Agreement, breach of representations and warranties of the Subsidiary, material defaults with a financial institution, bankruptcy/insolvency, etc).

13.2.8 ***Lease agreement between the Subsidiary and AREP Median LLC ("AREP")***

The Subsidiary entered into an agreement with AREP on 30 January 2012 (the "**Original Lease**") pursuant to which the Subsidiary was granted a lease over premises on the first floor of the building located at 2500 Meridian Parkway, Durham, North Carolina for normal and customary office purposes and normal and customary laboratory, manufacturing and product testing purposes which relate to the business of the Subsidiary. The Subsidiary also

has the right to use 10 parking spaces on the property. The Original Lease was grated for a term of 40 calendar months from 1 January 2012 to 30 April 2015 and was subsequently extended for one year on 1 December 2014. By way of a second amendment to the Original Lease, the Subsidiary agreed on 21 January 2016 to extend the lease until 30 September 2021. The Subsidiary has an option to extend the term for a period of 5 years commencing on 1 October 2021. The lease agreement contains a break clause which can be invoked at the option of the Subsidiary. This would take effect around January 2019 provided that the Subsidiary has given notice to the landlord as set out in the extension agreement. The Subsidiary also has a right of first refusal to lease additional space at the premises should this become available.

The rent for the premises is set on an increasing annual rent. The rent for the current period is approximately US$63,000 and will increase annually to approximately US$70,000 in 2021. This includes costs for space which has subsequently been leased in addition to that set out in the Original Lease. A security deposit of US$3,960.64 has also been paid for the premises.

The landlord has the right to terminate the agreement in certain circumstances, including where rent is not paid, insurance for the property is not maintained or the Subsidiary attempts to mortgage the property without the consent of the landlord. The Subsidiary has a right to terminate the lease in the event of default of the landlord of its obligations under the agreement, however the Subsidiary is required to give 30 days' notice to allow the landlord to remedy the default.

The agreement is governed by the laws of the state of North Carolina.

13.2.9 ***Letter of Intent between the Subsidiary and Linde Electronics and Speciality Gases***

On 15 December 2017 the Subsidiary signed a letter of intent ("**LoI**") with Linde Electronics and Speciality Gases, a division of Linde Gas North America LLC ("**Linde**"), in relation to a potential product supply agreement. Under the terms of the LoI, the Subsidiary and Linde have agreed to negotiate, prepare and sign a product supply agreement for the supply of industrial gas to the Subsidiary, subject to all required licences and approvals being obtained by the parties.

The supply agreement is expected to incorporate exclusivity provisions in relation to Linde's supply of gas for clinical uses that require approval by the FDA, although there will be no restriction on Linde supplying clinical uses which do not require FDA approval.

The LoI is legally binding and will terminate in the event that a product supply agreement is signed, or otherwise if mutually agreed between the parties. The LoI is governed by the laws of New Jersey and US Federal Law.

14. RELATED PARTY TRANSACTIONS

Save as set out in this paragraph 14, there are no related party transactions that the Group has entered into during the period covered by the historic financial information set out in Part IV up to the date of this Document:

14.1 ***Subscription agreements for Pre-Merger Fundraising***

The Company entered into subscription agreements with the Subscribers on 30 May 2017 pursuant to which the Subscribers agreed, conditional on completion of the Merger, to subscribe for Ordinary Shares in the Company. The agreements were conditional upon the Company procuring a sufficient number of subscribers to apply for the issue of shares such that the Company raised a total of at least US$2,000,000. The subscription was completed on 31 May 2017.

14.2 ***Share Exchange Agreement between the Company and the former shareholders of the Subsidiary***

On 31 May 2017, the Company entered into an agreement with the former shareholders of the Subsidiary (the "**Sellers**") to exchange the shares held by the Sellers for shares in the Company.

Pursuant to the agreement, the Company acquired the entire issued share capital of the Subsidiary in exchange for issuing 1,582,587 ordinary shares of £0.01 each in the Company to the Sellers. The Sellers have given limited title and capacity warranties to the Company in the agreement and they are subject to restrictive covenants for a period of 2 years from the date of the agreement. The agreement is governed by English law.

14.3 ***Stock Option Substitution Agreements between the Company and the holders of options of shares in the Subsidiary***

The Company entered into agreements with each of the holders of options over shares in the Subsidiary (the "**Option holders**") on 30 May 2017 to amend the 2011 Plan to replace the Option holders' rights to purchase shares in the Subsidiary with a right to purchase Ordinary Shares.

Under the terms of each of the agreements, upon exercise of any unexercised stock options over shares in the Subsidiary held by the Option holders on 30 May 2017 (the "**Options**") the Option holders will acquire Ordinary Shares and thus become Shareholders in the Company. The Option holders do not have any right to purchase shares in the Subsidiary.

The agreements did not amend, modify or terminate any terms or conditions applicable to the Options, including in relation to vesting and exercise periods, other than as set out above. The Stock Option Substitution Agreements are governed by English law.

14.4 ***Warrant Substitution Agreements between the Company and the former shareholders of the Subsidiary***

On 30 May 2017, the Company entered into agreements with each of the holders of warrants over shares in the Subsidiary (the "**Warrantholders**") to amend the terms of the warrants replacing the Warrantholders' rights to purchase shares in the Subsidiary with a right to purchase Ordinary Shares.

Under the terms of each of the agreements, upon exercise of any unexercised warrants options over shares in the Subsidiary held by the Warrantholders on 30 May 2017 (the "**Warrants**") the Warrantholders will acquire Ordinary Shares and thus become Shareholders in the Company. The Warrantholders do not have any right to purchase shares in the Subsidiary.

The agreements did not amend, modify or terminate any terms or conditions applicable to the Warrants, including in relation to exercise periods, other than as set out above. The Warrant Substitution Agreements are governed by English law.

14.5 ***Supply Agreement between the Subsidiary and Nukem Isotopes GmbH ("NUKEM")***

The Subsidiary has entered into a Letter Agreement, dated 24 August 2015, with NUKEM whereby the parties agree that upon an equity investment by NUKEM in the Subsidiary of a minimum of US$1,300,000, NUKEM and the Subsidiary will conclude a long-term supply agreement. At the date of this Document, the supply agreement has not yet been entered into between the parties, because NUKEM is not yet selling xenon on the commercial market.

When it is entered into, the supply agreement will require the Subsidiary to purchase at least 75 per cent. of its xenon gas from NUKEM for a minimum period of ten years from 24 August 2015. The Subsidiary has agreed to buy the xenon gas at a price meeting that of competitive materials of the same quality under similar conditions (with certain nuanced cap provisions).

This Letter Agreement is governed by English law, with any disputes being resolved by arbitration in London.

15. RESEARCH GRANTS RECEIVED BY THE GROUP

On or about 14 April 2017, the US National Institutes of Health National Heart, Lung and Blood Institute awarded the Subsidiary a Phase II Small Business Innovation Research Program grant of US$999,713 for a project entitled '*A Phase III Trial to Validate HP ^{129}Xe MRI as a Functional Pulmonary Biomarker in Pediatric Lung Disease'* (Grant No. 2R44HL123299-02A1). The budget period for the award was 15 April 2017 – 31 March 2018. The full project period was 15 July 2014 – 31 March 2020. All publications of research performed under the grant must acknowledge that such research was supported by the NHLBI.

The grant award was issued pursuant to the authority of 42 USC 241, 15 USC 638, and 42 CFR 52. The grant is subject to certain terms and conditions set out in the Notice of Award and also is subject to the uniform administrative requirements, cost principles and audit requirements for HHS awards set out in 45 CFR Part 75. The Subsidiary must also comply with the requirements set forth in the NIH Grants Policy Statement.

This Phase II SBIR award followed the Subsidiary's receipt and completion of a Phase I SBIR award of US$148,476 under Grant Number 1R43HL123299-01A1 for '*Enhanced Optical Module to Enable Polarized ^{129}Xe MRI Use in Clinical Trials'*. The performance period for that award was 15 July 2014 – 31 December 2014.

This Phase II SBIR grant has a value of US$1 million for the first year and two options valued at US$1 million each so long as Polarean continues to meet the grants terms and applicable US law and regulation. This Phase II SBIR award contemplates future years of funding, including potential funding of US$999,402 in Year 3 and US$979,115 in Year 4. Future funding depends, amongst other things, on the availability of NIH funds and satisfactory progress of the project. In addition, an NIH SBIR grant recipient generally forfeits future funding eligibility under the project once it is no longer a small business. Should the Subsidiary grow in size and become other than small, it will be permitted to continue its performance of work under an existing SBIR award, but it will be ineligible for future funding options or continuations under the SBIR program.

SBIR grant recipients, like most recipients of federal awards, are subject to specific reporting requirements related to intellectual property rights. To the extent the Subsidiary develops or creates any patents, subject inventions, or data in connection with the award and use of the NIH grant funds, the Subsidiary must comply with detailed reporting requirements to the agency in order to retain title and rights in the intellectual property.

As a SBIR grant recipient, the Subsidiary must satisfy numerous reporting requirements with regard to its performance and progress and as identified under the terms and conditions of the award and under the NIHGPS. For example, the Subsidiary must complete and maintain internally a lifecycle certification form, which the agency may request at any time.

16. ACQUISITION OF THE GROUP'S ASSETS

16.1 ***Acquisition of m2m Imaging Corp assets***

On 8 February 2017, m2m entered into an agreement with m2m Imaging Corp., pursuant to which m2m acquired certain assets owned by m2m Imaging Corp., including intellectual property and intellectual property rights which expire between 2024 and 2027 (relating to MR coils and bandwidth expansions in MR), domain names, accounts receivable, customer lists and goodwill. m2m did not acquire any liabilities of m2m Imaging Corp. as part of the transaction. In consideration for the acquisition of the assets, m2m agreed to write off amounts owed pursuant to certain promissory notes amounting to a total of US$1,895,000 and a loan of US$250,000 with US$110,000 of interest accrued. Additional information on these promissory notes is summarised in the Accountant's Report on the Historical Financial Information of the Subsidiary in section (B) of Part IV of this Document. m2m also gave certain customary warranties relating to title and capacity to enter into the agreement to m2m Imaging Corp. The agreement is governed by the laws of the State of New York.

Following the transaction m2m Imaging Corp. was dissolved pursuant to a Certificate of Dissolution in accordance with the laws of the State of Delaware.

16.2 ***Agreements entered into by the Subsidiary***

The Subsidiary entered into an agreement with GE on 19 December 2011 to acquire all of GE's assets related to the hyperpolarised MRI project, including an inventory of polarisers and parts and the licenses (or outright ownership) of the related patent families. GE had acquired the assets from Amersham in 2004. A summary of the agreements which were entered into between the various parties and explain the transfer of the assets from Amersham to the Group are set out below:

16.2.1 *Princeton Licence Agreement between Princeton University, the Research Foundation of State University of New York, MITI and NAI*

On 30 July 1999, the Trustees of Princeton University ("**Princeton**"), the Research Foundation of State University of New York (the "**Foundation**"), Magnetic Imaging Technologies Incorporated ("**MITI**"), and Medi-Physics Inc., doing business as Nycomed Amersham Imaging ("**NAI**") entered into a licence agreement (the "**Original License Agreement**"), pursuant to which MITI was granted: (i) an exclusive and worldwide right and license to make, have made, use, lease and sell the certain patented and/or licensed products relating to the hyperpolarisation of noble gases and MRI using hyperpolarised noble gases. The rights were granted for the full end of the term for which the patent rights are granted unless terminated sooner.

16.2.2 *Amendment to the Original License Agreement entered into between Princeton University, the Research Foundation of State University of New York and GE Healthcare*

On 23 November 2004 Princeton, the Foundation and GE Healthcare entered into an amendment to the Original License Agreement pursuant to which slight amendments were made to the termination provisions of the agreement, a formal toxicology programme using the licensed technology was required to be commenced within 3 years of the date of the amendment, a clinical development programme using the licensed technology to be commenced within 5 years of the date of the amendment and royalties were to be paid to Princeton and the Foundation on the licensed technology.

16.2.3 *Asset Transfer Agreement between GE and the Subsidiary*

On 19 December 2011, the Subsidiary entered into an agreement with Medi-Physics Inc. d/b/a GE Healthcare and GE Healthcare Ltd to acquire the right, title and interest in and to certain assets, including equipment, know how, patents and trademarks, relating to GE Healthcare's hyperpolarised gases business. The transferred assets included: (a) all rights, title and interest in and to the Asset Purchase Agreement between Amersham and GE (details of which are at paragraph 16.2.1); (b) all rights, title and interest in and to certain patents; and (iii) the assignment of two trademarks: XENOSPIN® and HELISPIN®.

Pursuant to the terms of the agreement, GE Healthcare is entitled to receive 5 per cent. of the gross sales of products sold within the period from: (a) the commencement of the date on which a hyperpolarised gas product (including polarisers, calibration stations and other equipment as well as software, repair and servicing products, amongst other items) is first commercially sold in any country or region pursuant to a registration; to (b) the later of: (i) 19 August 2022; or (ii) seven years from the date of the first commercial sale of a product after registration for such product. Payments are to be made on a quarterly basis in US Dollars. The consideration is to be determined on a product-by-product and country-by-country basis. Reductions may be made to this commission where the Subsidiary determines that a licence is required to avoid infringing third party patents.

The parties have each provided customary warranties and indemnities in the agreement. The agreement is governed by the laws of the State of New York.

16.2.4 *Second Amendment to the Original License Agreement entered into between Princeton University, the Research Foundation of State University of New York and the Subsidiary*

On 30 July 2015, the Subsidiary entered into a second amendment to the Original Licence Agreement pursuant to which it was agreed that the Subsidiary's obligation to make minimum

annual royalty payments to Princeton and the Foundation should be delayed until 27 March 2017 when the last of the patent rights was due to expire.

The agreement to delay the payment followed the failure by the Subsidiary to make the required royalty payments, totalling US$150,000. The amendment was governed by the laws of the state of New Jersey.

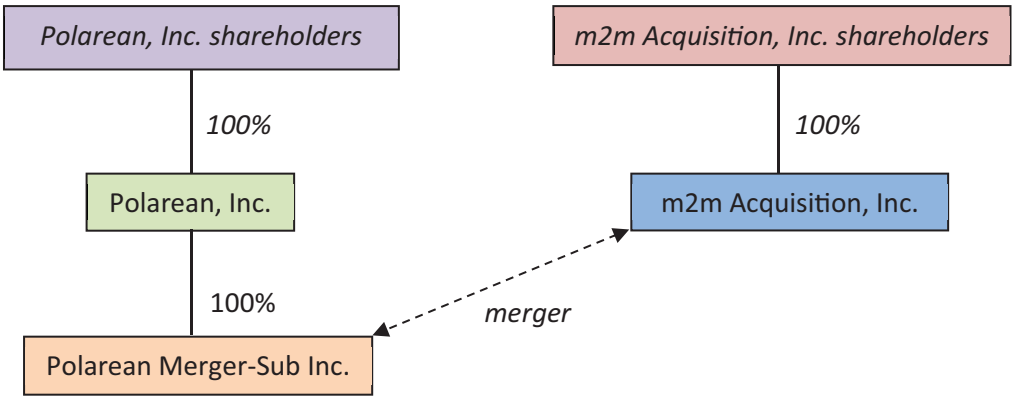
16.2.5 *Third Amendment to the Original License Agreement entered into between Princeton University, the Research Foundation of State University of New York and the Subsidiary*

Princeton, the Foundation and the Subsidiary entered into a third amendment of the Original Licence Agreement on 27 March 2017. Pursuant to the terms of the amendment, in consideration for the delay in demanding payment of amounts due and owing on the date of the agreement, the Subsidiary was required to make a payment to Princeton, on 27 May 2017 of US$25,000 with a subsequent payment of US$250,000 due no later than 27 May 2018. Such amounts represent obligations of the Subsidiary due and owing to Princeton.

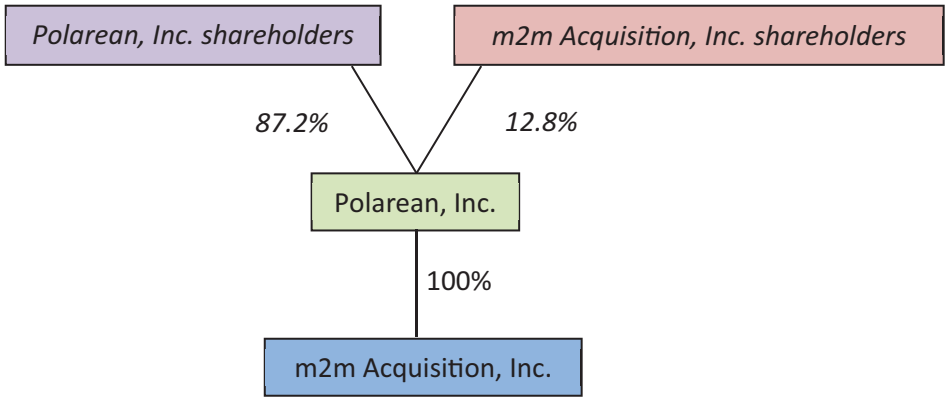
The amendment was governed by the laws of the state of New Jersey.

16.2.6 *Agreement and Plan of Merger between Polarean Merger-Sub Inc. and m2m*

The Subsidiary entered into an Agreement and Plan of Merger with m2m, Polarean Merger-Sub Inc., Robert Bertoldi (as the m2m stockholder representative) and Kenneth West (as the Subsidiary's stockholder representative) on 17 May 2017. Pursuant to the terms of the agreement, Polarean Merger-Sub Inc. was merged with and into m2m.



The consideration for the merger was the issue of stock in the Subsidiary to the shareholders of m2m, who were not shareholders in the Subsidiary prior to the merger. A total of 576,429 shares in the Subsidiary were issued to m2m shareholders.



The merger was conditional on the Company having entered into binding subscription agreements to raise a minimum of the sterling equivalent of US$2 million of newly invested capital, with the terms of such subscription agreements being satisfied, and subscription

monies received, immediately following closing of the merger. In addition, within 12 months of completion of the merger, it is intended that the Company will have raised a minimum of US$3 million of additional invested capital. The conditions to the merger were satisfied and the merger closed on 30 May 2017.

The parties (other than the stockholder representatives) have each provided customary warranties and indemnities in the agreement. The agreement is governed by the laws of the State of Delaware.

16.2.7 *Share Exchange Agreement between the Company and the Subsidiary*

On 31 May 2017, the Company entered into an agreement with the former shareholders of the Subsidiary (the "**Sellers**") to exchange the shares held by the Sellers for shares in the Company. Further details of the terms of the agreement are set out in paragraph 14.2 of this Part VII.

17. NO GOVERNMENTAL, LEGAL OR ARBITRATION PROCEEDINGS

There are no governmental, legal or arbitration proceedings active, pending or threatened against, or being brought by, any member of the Group which are having, or may have or have had during the 12 months preceding the date of this Document a significant effect on the Group's financial position or profitability.

18. WORKING CAPITAL

The Directors are of the opinion, having made due and careful enquiry, that following Admission the Group will have sufficient working capital for its present requirements, that is for at least the 12 month period following Admission.

19. INTELLECTUAL PROPERTY

Save as disclosed in Part I and this Part VII of this Document, there are no patents or other intellectual property rights, licences or particular contracts which are or may be of fundamental importance to the Group's business.

20. ACCOUNTING MATTERS

20.1 Save for the Placing and Subscription and as disclosed in this Document, there has been no significant change in the financial or trading position of the Group since 30 June 2017, the date to which the financial information in Part IV of this Document has been prepared.

20.2 The financial information set out in this Document relating to the Group does not constitute statutory accounts. Crowe Clark Whitehill LLP have been the auditors of the Subsidiary since 14 June 2017. Crowe Clark Whitehill LLP have also been the auditors of the Company since incorporation on 24 October 2016.

20.3 The total costs and expenses relating to the Placing, Subscription and Admission payable by the Company are estimated to be £1,011,800 (excluding VAT).

20.4 The accounting reference date of the Company is 31 December.

21. CONSENTS

21.1 Northland has given and has not withdrawn its written consent to the issue of this Document with the inclusion of its name and references to it in the form and context in which they appear.

21.2 Pharma Ventures has given and has not withdrawn its written consent to the issue of this Document with the inclusion of its report in Part III of the form and context in which it appears.

21.3 CCW has given and not withdrawn its written consent to the inclusion of its report dated 23 March 2018 in Part IV of this Document and the references to its report in the form and context in which they

appear and has authorised the contents of that report for the purposes of Schedule Two of the AIM Rules for Companies.

22. GENERAL

22.1 Northland Capital Partners Limited is registered in England and Wales under number 02617599 and its registered office is at 40 Gracechurch Street, 2nd Floor, London, EC3V 0BT. Northland is regulated by the FCA and is acting in the capacity of nominated adviser and broker to the Company.

22.2 Save as disclosed in this Part VII of this Document, no person (excluding professional advisers otherwise disclosed in this Document and trade suppliers) has:

22.2.1 received, directly or indirectly, from the Company within the 12 months preceding the date of application for Admission; or

22.2.2 entered into contractual arrangements (not otherwise disclosed in this Document) to receive, directly or indirectly, from the Company on or after Admission any of the following:

22.2.3 fees totalling £10,000 or more;

22.2.4 securities in the Company with a value of £10,000 or more calculated by reference to the expected price of an Ordinary Share at Admission; or

22.2.5 any other benefit with a value of £10,000 or more at the date of Admission.

22.3 Save as set out in this Document, there are no principal investments in progress or principal future investments on which the Board has made a firm commitment. There are no mandatory takeover bids outstanding in respect of the Company and none has been made either in the last financial year or the current financial year of the Company.

22.4 No public takeover bids have been made by third parties in respect of the Company's issued share capital in the current financial year or in the last financial year.

23. AVAILABILITY OF DOCUMENT

Copies of this Document will be available for inspection normal business hours on any day (except Saturdays, Sundays and UK public holidays) at the registered office of the Company and on the Company's web-site at www.polarean.com from the date of this Document until the date which is one month after Admission.

PART VIII

DEFINITIONS

The following words and expressions shall have the following meanings in this Document, unless the context otherwise requires:

"Act"	the Companies Act 2006 (as amended);
"Admission"	the admission of the Enlarged Issued Share Capital to trading on AIM becoming effective in accordance with Rule 6 of the AIM Rules;
"AIM"	AIM, a market operated by the London Stock Exchange;
"AIM Rules"	the rules published by the London Stock Exchange from time to time governing the admission to and the operation of AIM;
"Amersham"	Amersham Biosciences UK Limited, a company incorporated in the UK with company number 03337033 and having its registered office at Amersham Place, Little Chalfont, Buckinghamshire, HP7 9NA;
"Amphion Concert Party"	(1) Amphion Innovations plc; (2) Robert Bertoldi; (3) Richard CE Morgan; and (4) The James Macaleer Estate, as further described in paragraph 8.2.1 of Part VII of this Document;
"Amphion"	Amphion Innovations plc, a public limited company incorporated and registered in the Isle of Man with registered number 113646C, whose registered office is at Fort Anne, Douglas, Isle of Man, IM1 5PD;
"Amphion Warrants"	the 97,993 warrants over Ordinary Shares granted to Amphion Innovations plc, Robert Bertoldi and Richard Morgan pursuant to the Amphion Warrant Instrument;
"Amphion Warrant Instrument"	the warrant instrument dated 25 May 2017 executed by the Company which sets out the terms and conditions of the Amphion Warrants;
"Articles"	the articles of association of the Company, as amended from time to time;
"Board" or "Directors"	the directors of the Company as at the date of this Document, whose names are set out on page 78;
"City Code"	the City Code on Takeovers and Mergers;
"certificated" or "in certificated form"	a share or other security which is not in uncertificated form (i.e. not in CREST);
"Company" or "Polarean"	Polarean Imaging plc, a company incorporated in England and Wales with company number 10442853 and having its registered office at 27-28 Eastcastle Street, London, W1W 8DH;
"Convertible Loan Notes"	convertible, unsecured loan notes issued to new and existing Shareholders in December 2017 pursuant to subscription agreements, further details of which are set out in paragraph 13.1.1 of Part VII of this Document;
"CREST"	the computerised settlement system to facilitate the transfer of title of shares in uncertificated form operated by CRESTCo Limited;

"CREST Regulations"	the Uncertificated Securities Regulations 2001 (SI 2001 no. 3755), as amended;
"Cyclomedica"	Cyclomedica Australia Pty Ltd, a subsidiary of Cyclopharm Ltd, a company that is listed on the Australian Stock Exchange and has company number ABN 74 116 931 250 and has its registered office at Unit 4 / 1 The Crescent, Kingsgrove NSW 2208;
"Document"	this AIM admission document;
"EIS"	Enterprise Investment Scheme;
"Enlarged Issued Share Capital"	the Existing Ordinary Shares and the new Ordinary Shares issued pursuant to the Placing and Subscription;
"EU"	the European Union;
"Existing Ordinary Shares"	the 48,470,160 Ordinary Shares in issue as at the date of this Document;
"FCA"	the Financial Conduct Authority or any successor thereof, the single statutory regulator under FSMA;
"FSMA"	the Financial Services and Markets Act 2000, as amended;
"GE"	GE Healthcare Limited, a company incorporated in the UK;
"Group"	the Company and its subsidiaries;
"Locked-in Persons"	means Amphion, Bastiaan Driehuys, Ken West and his associates, Richard Morgan, Robert Bertoldi, Juergen Laucht, Jonathan Allis, Kiarash Emami, Neil Wadehra, William Patrick, NUKEM, John Sudol and Technology Commercialization Group, who are restricted from selling their Ordinary Shares for a predetermined amount of time following Admission;
"London Stock Exchange"	London Stock Exchange plc;
"m2m"	m2m Acquisition, Inc., a company incorporated in Delaware with company number 6199873 and having its registered office at Corporation Service Company, 251 Little Falls Drive, Wilmington, New Castle, DE 19808;
"m2m Merger"	the merger between Polarean Merger-Sub Inc. and m2m which was executed pursuant to the Merger Agreement;
"MCS Warrant(s)"	the warrant(s) granted to MC Services AG to subscribe for 3,400 Ordinary Shares at the Placing Price per Ordinary Share pursuant to the MCS Warrant Instrument;
"MCS Warrantholders"	in relation to the MCS Warrants, the person or persons who is or are for the time being the registered holder or joint holders of such MCS Warrant;
"MCS Warrant Instrument"	the warrant instrument adopted by the Company on 23 March 2018 constituting the MCS Warrants which sets out the terms and conditions of the MCS Warrants;
"Merger Agreement"	an agreement and plan of merger dated 17 May 2017 pursuant to which Polarean Merger-Sub Inc. and m2m were merged with m2m being the surviving entity;

"Northland" or "Nomad" or "Broker"	Northland Capital Partners Limited, a company incorporated in England and Wales with company number 02617599 and having its registered office at 40 Gracechurch Street, 2nd Floor, London, EC3V 0BT, who at the date of this Document is the Nominated Adviser and Broker to the Company;
"Nukem"	NUKEM Isotopes GmbH, a privately owned company registered in Germany with company number HRB11813 and having its registered office at Industriestrasse 13, 63755 Alzenau, Germany;
"Ordinary Shares"	ordinary shares of £0.00037 each in the capital of Company;
"Panel"	the Panel on Takeovers and Mergers;
"Pharma Ventures"	Pharma Ventures Limited, a company incorporated in England and Wales with company number 03419584 and having its registered office at 1300 Parkway Court John Smith Drive, Oxford Business Park South, Oxford, OX4 2JY;
"Placees"	the subscribers for Placing Shares at the Placing Price pursuant to the Placing;
"Placing"	the conditional placing of the Placing Shares pursuant to the Placing Agreement;
"Placing Agreement"	the conditional agreement dated 23 March 2018 between Northland, the Company and the Directors relating to the Placing, further details of which are set out in paragraph 13.1.2 of Part VII of this Document;
"Placing Price"	15p per Placing Share;
"Placing Shares"	the 13,333,333 new Ordinary Shares to be issued conditional on Admission by the Company pursuant to the Placing;
"Plan"	the Company's share option plan that will be entered into upon Admission;
"Polarean Concert Party"	(1) Bastiaan Driehuys; (2) Kenneth West; (3) Kenneth West and Suzanne West; (4) Daybreak Capital Partners LLC; (5) Ajay Khanna; (6) Raghu Ballal; (7) NUKEM Isotopes Imaging GmbH; (8) Duke University; (9) Juergen Laught; (10) John Sudol; and (11) Technology Commercialization Group, LLC, as further described in paragraph 8.2.2 of Part VII of this Document;
"Polarean Warrants"	warrants granted by the Subsidiary over its shares prior to completion of the m2m Merger;
'Pre-Admission Fundraise	the fundraising of £647,127 which was completed by the Company in December 2017;
"Pre-Admission Share Option Scheme"	the Company's pre Admission share option plan;
"Pre-Admission Warrants"	the warrants over 129,425 Ordinary Shares granted in relation to the Pre-Admission Fundraise;
"Pre-Merger Fundraise"	a fundraising of US$2 million which was a condition for completion of the m2m Merger;

"Prospectus Rules"	rules published by the FCA under section 73A FSMA;
"Share Dealing Code"	the code to be adopted by the Company from Admission which governs the restrictions imposed on persons discharging managerial responsibility and persons connected with them in relation to dealings in the Company's securities;
"Share Exchange"	the share-for-share-exchange in which the Company issued one share in the Company to the former shareholders of the Subsidiary for each share of common stock the shareholder sold to the Company by, pursuant to the Share Exchange Agreement;
"Share Exchange Agreement"	an agreement dated 31 May 2017 pursuant to which the Company issued one share in the Company to the former shareholders of the Subsidiary for each share of common stock the shareholder sold to the Company;
"Shareholders" or "Members"	holders of Ordinary Shares;
"Subscriber Warrant Instrument"	the warrant instrument dated 25 May 2017 executed by the Company which sets out the terms and conditions of the Subscriber Warrants;
"Subscriber Warrants"	the warrants over 46,264 Ordinary Shares granted to certain subscribers in the Company on 31 May 2017 pursuant to the Subscriber Warrant Instrument;
"Subscribers"	a subscriber for Subscription Shares pursuant to the Subscription;
"Subscription"	the conditional subscription of Subscription Shares by the Subscribers at the Subscription Price;
"Subscription Agreements"	the conditional agreements dated 22 March 2018 and made between: (1) the Company; and (2) the Subscribers, further details of which are set out in paragraph 13.1.4 of Part VII of this Document;
"Subscription Price"	15p per Subscription Share;
"Subscription Shares"	the 6,666,667 Ordinary Shares to be issued at the Subscription Price by the Company pursuant to the Subscription;
"Subsidiary"	Polarean, Inc., a company incorporated in North Carolina with SOSID: 1224616 and having its registered office at Wells Fargo Capitol Center, 150 Fayetteville Street, Suite, 2300, Raleigh, Wake County, North Carolina 27601;
"Xemed"	Xemed, LLC, a company incorporated in New Hampshire and having its registered office at 16 Strafford Avenue, Durham NH 03824;
"UK"	United Kingdom of Great Britain and Northern Ireland;
"US"	United States of America;
"VCT"	Venture Capital Trust;
"$"	the currency used in the US; and
"£"	the currency used in the UK.

PART IX

GLOSSARY OF TECHNICAL TERMS

"alveolar spaces"	the primary site of gas exchange between the lungs and the circulatory system;
"alveoli"	any of the many tiny air sacs of the lungs which allow for rapid gaseous exchange;
"bronchioles"	the passageways by which air passes through from the respiratory tract to the alveoli (air sacs) of the lungs;
"CE mark"	a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area;
"COPD"	chronic obstructive pulmonary disease;
"CRO"	contract research organisation, an organisation that provides support to the pharmaceutical, biotechnology, and medical device industries in the form of research services outsourced on a contract basis;
"cryogenics"	the branches of physics and engineering that involve the study of very low temperatures, how to produce them, and how materials behave at those temperatures;
"CT"	computed tomography;
"FDA"	the US Food and Drug Administration;
"GMP"	good manufacturing practices;
"HPX"	Hyperpolarised ^{129}Xe;
"hyperpolarisation"	aligning the nuclear magnetic moments of atoms in order to greatly enhance their MRI signal;
"IND"	investigational new drug application;
"IPF"	Idiopathic Pulmonary Fibrosis;
"IRB"	Institutional Review Board;
"MR"	magnetic resonance;
"MRI" or "MRI scan"	magnetic resonance imaging is a type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body;
"MRI signal"	generally the signal created by protons (hydrogen atoms) in tissues containing water molecules that is processed to form an image of the body resulting from an MRI scan. When The Group conducts MRI scans with hyperpolarised ^{129}Xe, it is the ^{129}Xe that produces the MRI signal;
NHLBI	the US National Heart, Lung, and Blood Institute;
"NIH"	the US National Institutes of Health;

"NMR"	nuclear magnetic resonance;
"PAH"	Pulmonary Arterial Hypertension;
"PFT"	Pulmonary Function Test;
"Polarimetry"	generally a sensitive, non-destructive technique for measuring the optical activity exhibited by inorganic and organic compounds and specifically, in relation to the Group, the techniques employed to measure the hyperpolarised Xenon prior to the inhalation by a patient;
"polariser" or "hyperpolariser"	generally an optical filter that lets light waves of a specific polarisation pass and blocks light waves of other polarisations and specifically, in relation to the Group, a polariser is the device that produces hyperpolarised Xenon, i.e. a hyperpolariser;
"pulmonary vasculature"	the blood vessels which run between the lung and heart;
"RF" or "Radio Frequency"	a frequency within the range at which radio waves are transmitted, conventionally from 3 kilohertz to 300 megahertz, immediately below the range of microwave frequencies in the electromagnetic spectrum;
"SBIR"	the Small Business Innovation Research Program;
"scintigraphy"	a technique in which a scintillation counter or similar detector is used with a radioactive tracer to obtain an image of a bodily organ or a record of its functioning;
"SNR"	signal to noise ratio;
"spirometry"	a pulmonary function tests which measures lung function and specifically the amount (volume) and/or speed (flow) of air that can be inhaled and exhaled;
"Xe" or "Xenon"	Xenon, a chemical element with symbol Xe and atomic number 54. It is a colourless, dense, odourless noble gas found in the Earth's atmosphere in trace amounts;
"129Xe"	a stable isotope of Xenon detectable by MRI, produced by beta decay of 129I, which has a half-life of 16 million year; and
"3He"	a stable isotope of Helium detectable by MRI, produced by decay of tritium (hydrogen-3), which has a half-life of 12.3 years.

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