tekA Orthopaedics

DEVICE TECHNOLOGY

information memorandum

Presentation Content
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Executive Summary概要

Under this Offer, TekA Orthopaedics Pty Ltd (TekA) seeks to raise AUD 3million for 20% of the fully paid ordinary shares to support the final stage of development of its technology.

TekA's existing shareholders have funded the Company's development to date. TekA is seeking funds from strategic investors positioned to take TekA's technology to commercialisation. TekA will refine the technology, complete the next surgical audit, issue a surgeon ready medical device & system and commercialise the business.

Investors

Investors are invited to partake in a medical device product that will have strong appeal in the global orthopaedic market. Significant growth in demand for total hip replacement surgery and accuracy in the procedure underwrites the need for TekA's technology in this expanding market.

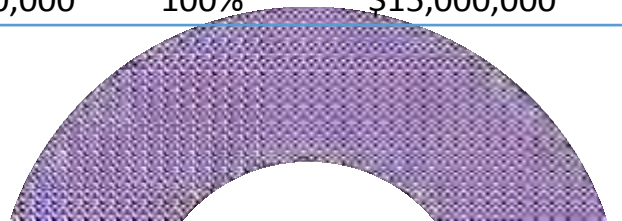
The directors encourage potential qualified investors to join us to take advantage of this development to participate in a strong capital gain upon merger with or sale to an international prosthesis manufacturer who sees the advantage of combining accuracy technology with high quality prosthesis in the THR global market.

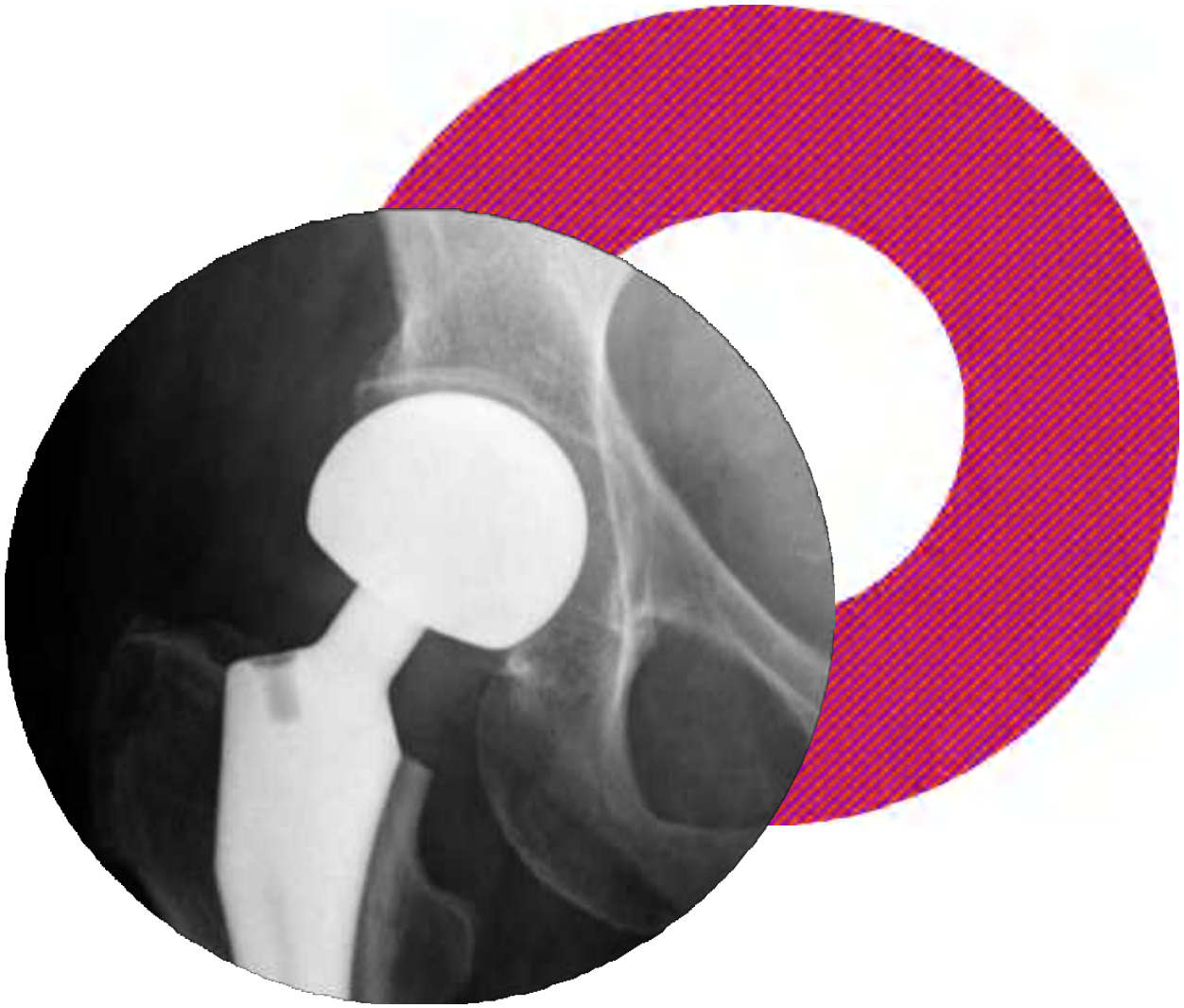
TekA拟出让20%股权，融资300万澳元，主要用于完善技术，完成下一次外科手术审核，为外科医生准备可使用的医疗设备和系统，并将业务商业化。后续公司可以依托在髋关节置换领域的优质假体，被兼并或者出售给国际假体制造商。

Key Terms of Offer

The Company will raise AUD 3million for 750,000 ordinary shares (20% of total issued shares).公司将为750,000股普通股筹集300万澳元股（占已发行股份总数的20%）。
The below table sets out the impact of issued securities.
下表是发行后的影响。

Point in Time	Shareholder	No. Shares Issued 发行数	Proportion比例	Investment & Value 投资&价值
As at date of Offer现在	Existing Shareholders 现有投资人	3,000,000	100%	
	Total	**3,000,000**	**100%**	
Completion 发行后	Existing Shareholders现有股东	3,000,000	80%	
	New Investor 新投资人	750,000	20%	$3,000,000
	Total	3,750,000	100%	$15,000,000





Company Profile
公司简介

TekA Orthopaedics Pty Ltd A.C.N. 624 514 156 is an Australian based company formed in 2018. TekA has invented a Total Hip Replacement/Total Hip Arthroplasty cup alignment system that is low cost, accurate and easy to use.

The Company has recently acquired technology from ILO to enhance and complement TekA's own technology and devices. The acquisition enables TekA to leverage from systems developed by ILO which had the benefit of independent input, review and assessment from Kings College Teaching Hospital in the United Kingdom.
The engineering and development of the ILO system was completed in conjunction with design engineering firm AIMTEK under the supervision of Adj Professor Don Fry AO, who is now a director of TekA.

TekA 是一家成立于2018年的澳大利亚公司。TekA发明了一种低成本，准确且易于使用的全髋关节置换/全髋关节置换杯对准系统。公司最近从ILO获得了用于增强和补充TekA自身的技术和设备的技术。 此次收购使TekA可以利用ILO开发的系统，该系统得益于英国伦敦国王学院医院的独立输入，审查和评估。

The Team 团队

Adj Professor Don Fry,
AO, FTSE, FIE Aust, CP Eng, FI Mar EST, RINA, RPEQ
Chairman & Research, Design and Technology Engineer
Named among the top 100 of Australia's most influential engineers and awarded Officer of the Order of Australia for Services to Engineering (AO).
董事长兼科研，设计和技术工程师。被提名为澳大利亚最具影响力的工程师100强之一，并被授予澳大利亚工程服务勋章（AO）。

David Wadley
Director & Company Secretary, Marketing 董事&董秘、市场
Mr Wadley has 30 years corporate experience as a Director of companies engaged in agribusiness, asset syndication, project management, development and marketing. Mr Wadley has been retained as an advisor to several international companies with significant investment holdings in Asia and Australia农业综合企业，资产联合组织，项目管理，开发和营销领域担任公司董事已有30年的公司经验。 已被聘为多家国际公司的顾问

James Grant
Director 董事
James is a proven Executive with broad experience across the Financial Services industry and a people leader with the ability to develop innovative strategic initiatives and lead the execution of those strategies in a practical, inclusive and ultimately effective manner.
金融服务业拥有丰富经验、行之有效的执行官，一位人力资源领导者，具有开发创新战略计划并以实用，包容和最终有效的方式领导这些战略执行的能力。

Ian Swinkels
Director, Technical Development 董事，技术开发
Mr Swinkels' background is in Computing Science and Electronics Engineering. In addition to this he has acquired many additional Information Technology industry certifications (Microsoft, Cisco and others) relating to various technologies over 25 years experience working in the Information Technology industry.
计算机科学与电子工程。 拥有25年以上在信息技术行业工作的丰富经验，获得与各种技术相关的其他信息技术行业认证（Microsoft，Cisco等）。

Company Highlights 公司亮点

1. **TekA** has invented an alignment device and system for Total Hip Replacement (**THR**) surgery that delivers significant patient benefits. 发明THR，效益巨大
2. **TekA**'s acquired InLine Orthopaedics Pty Ltd (**ILO**) technology which was previously audited by the Australian Federal Government and awarded a Commercialization Australia Grant. 收购ILO技术
3. The **TekA** THR alignment device provides surgeons with an easy to use device that delivers accurate cup placement and alignment through a live visual display. 易于使用，准确定位校准
4. **TekA**'s device is low cost to produce成本低
5. The technology provides data feedback for use by surgeons, hospitals, insurers and prosthesis manufacturers. 数据反馈给外科医生、医院、生产商等
6. TekA will have R&D status with the Federal Government and with the Australian Tax Office. 政府科研合作
7. The THR market is estimated to reach a value of USD 7.1 billion in the new future.710亿市场
8. **TekA**'s acquired ILO technology was surgically audited in over 30 operations under the direction of **King's College Hospital** (**KCH**), London, England.收购技术已有30例临床审核
9. Recent cadaveric audit operations have been held at the **John Burn Medical Centre Honolulu** and the **Prince Charles Hospital (MERF)** in Brisbane, Australia - providing participating surgeons' feedback for further refinement of the system. 最近尸体审核手术在MERF
10. The lead **KCH** surgeon has provided a letter of support for the earlier stage concept.英国伦敦国王学院医院专家背书
11. **TekA** now seeks funding to advance to commercialisation – finalise surgical audit, finalise surgeon user manual and a surgeon ready product for immediate use in surgery. 寻求融资

The Surgical Problem
外科手术问题

"There is overwhelming evidence to show that surgeons cannot consistently position the acetabular components precisely. Without exception, studies show wide variations in the angle of inclination of the acetabular component and to an even greater extent its ante version." "有大量证据表明，外科医生不能始终如一地精确定位髋臼组件。无一例外，研究表明髋臼组件的倾斜角度变化很大，甚至更大程度地改变了髋臼组件的倾斜角度。"
(Langton et al., 2011)

A study into hip replacements analysed results from >4200 operations and showed that >70% of operations were aligned outside the safe zone (believed to be ±5° for inclination and ante version). Outside this safe zone, prostheses wear prematurely, breaking down components that are designed to function within certain parameters leading to destruction of surrounding tissue.

The majority of THR operations are still performed using eye-ball judgement. In the US, nearly 40% of operations are carried out by 'low volume surgeons' performing 10 to 15 operations a year – these surgeon's surgical results would be significantly improved utilising an easy to use alignment guiding device.

An important feature in THR surgery is the accuracy of the placement of the acetabular cup. Accurate alignment of the prosthetic cup determines the range of movement of the replacement joint. Improperly aligned prostheses are implicated as being responsible for a number of serious complications, including dislocation, impingement, metallises and increased rates of wear and tear.

THR的大多数操作仍然使用眼球判断来执行。THR手术的一个重要特征是髋臼杯放置的准确性。假体杯的精确对准确定了替换关节的运动范围。定位不当会导致许多严重的并发症，包括脱位，撞击，金属化和磨损率增加。

Revision costs in the United States alone in [THR] are USD1billion p.a. Health insurers and hospital managements would see significant financial savings provided by reduced surgical complications and revision operations. 翻修成本

There has been widespread litigation against THR prosthesis manufacturers for inconsistency in cup alignment - a major challenge facing the prosthesis industry. 制造商产品对准挑战

The most widely performed THR operation is the lateral approach through a **20 to 25cm** incision. Use of the TekA technology could result in more minimally invasive surgeries (MIS) through a **5 to 10cm** incision. The technology can be adapted for use in the anterior approach, a more recent innovation. Increased rates of MIS and anterior approach operations will lead to reduced hospital stays with associated cost savings. 微创和前路手术

In the cases of misalignment there is a high probability of the patient requiring revision of the THR. Revision surgery has a less favourable outcome than primary THR surgery. Rates of adverse events occurring within 90 days of revision THR (including mortality (2.5%), dislocation (8.3%) and deep infection (1%) are two to five times higher than following primary THR. Furthermore, revision surgery is less successful than primary THR in relieving pain and improving functional status. The risk of re-revision following revision THR exceeds that of revision following primary THR. Thus, failure of THR and subsequent revision threatens patients with significant morbidity, mortality, and reduced quality of life.

翻修手术伴随的并发症（包括死亡率（2.5%），脱位（8.3%）和深部感染（1%））

Problem Solved

问题解决

The TekA system analyses the data from a number of sensors using an advanced algorithm to identify pitch and roll in real time. The sensors are attached to the surgical tools, the patient and the system (i.e. patient sensor, tool sensor and gauge sensor). The surgeon configures the system prior to surgery, by inputting the desired alignment parameters. The “actual” position of the tool is referenced in relationship to the desired/pre-configured optimal alignment. The surgeon can see immediately if he/she is within the alignment zone or not and correct accordingly. The graphics are displayed on screens closely accessible for the surgeon.

TekA系统使用高级算法分析来自多个传感器的数据，以实时识别。 传感器连接到手术工具，患者和系统（即患者传感器，工具传感器和量规传感器）。外科医生在手术前通过输入所需的对准参数来配置系统。外科医生可以立即看到他/她是否在对准区域内，并进行相应的纠正。 图形显示在外科医生可以轻松访问的屏幕上。

The TekA system creates significantly improved patient outcomes. The central system module is re-useable and the sensors and battery packs are disposable but can be used over several procedures.

TekA系统可显着改善患者的预后。 中央系统模块是可重复使用的，传感器和电池组是一次性的，但可以在多个过程中使用。

The tekA Medical Technology 技术

Accuracy in Hip Replacement Surgery 置换准确度

TekA has recently purchased the patents and assets of ILO. Lead research & design engineer, Don Fry AO, and founding ILO director David Wadley are now directors of TekA Orthopaedics Pty Ltd. The ILO patents have been superseded through advanced improvements in design and application and hence have now been cancelled.

The ILO alignment technology for THR surgery was developed in response to the universally accepted statement that current alignment of the acetabular cup in THR surgical procedures was unreliable and delivered inconsistent results.

The ILO system was reviewed in a surgical audit and evaluation process at King College Hospital **[KCH]** Trust Group, London, a world leading teaching hospital.

The TekA system that exists today incorporates technology initially developed by ILO with input from the results of the KCH audit. More advanced research subsequently undertaken by TekA has created a medical device and systems that will resolve surgical inconsistences and provide accurate alignment in THR surgical operations that surgeons can rely on to create better patient outcomes.

现有TekA系统采用了ILO最初开发的技术，并结合了KCH临床审核结果。TekA随后进行的更高级的研究创建了一种医疗设备和系统，该设备和系统将解决外科手术中的不一致之处，并在THR外科手术中提供准确的对齐方式，外科医生可以依靠它来创造更好的患者结果。

The TekA system enables surgeons to “pre-configure” / “pre- robotic” individual patient safe zones into the THR system. The TekA system compares “actual” placement during surgery to “desired” placement and gives the surgeon a real time reference point ensuring accuracy of placement. Accurate placement enables reduction in much more expensive, potentially harmful revision surgery. It also reduces the potential for litigation, reduces healing time and pain.

TekA will use investor funds to complete design refinement and product development to provide a surgeon ready “off the shelf” medical device for immediate use in surgery.

TekA系统使外科医生可以将各个患者的安全区域“预先配置” /“自动机器人化”到THR系统中。 TekA系统将手术期间的“实际”放置与“所需”放置进行比较，并为外科医生提供实时的参考点，以确保放置的准确性。 准确的放置可以减少昂贵得多的，可能有害的翻修手术。 它还减少了诉讼的可能性，减少了愈合时间和痛苦。

Image 1: Acetabular Cup Placement
图1： 髋臼杯放置

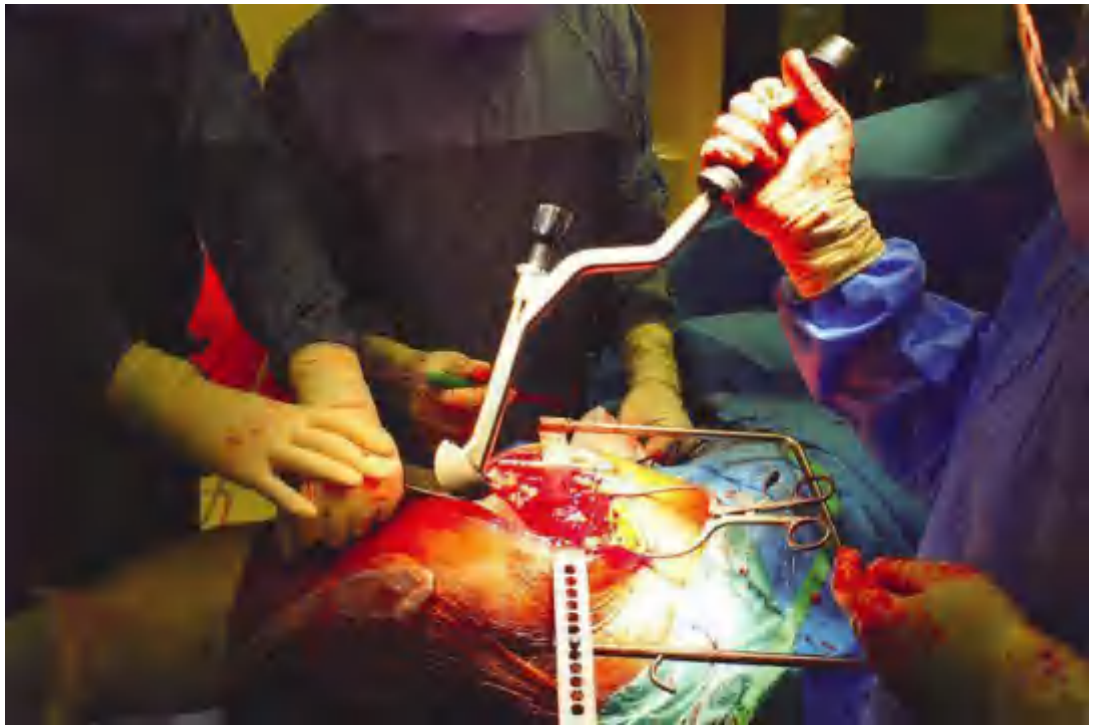


Image 2 Acetabular Cup Placement
图2：髋臼杯放置

Acetabular Cup placement using tekA device & technology

使用tekA设备和技术放置髋臼杯

Image 1: Screen Capture 截屏

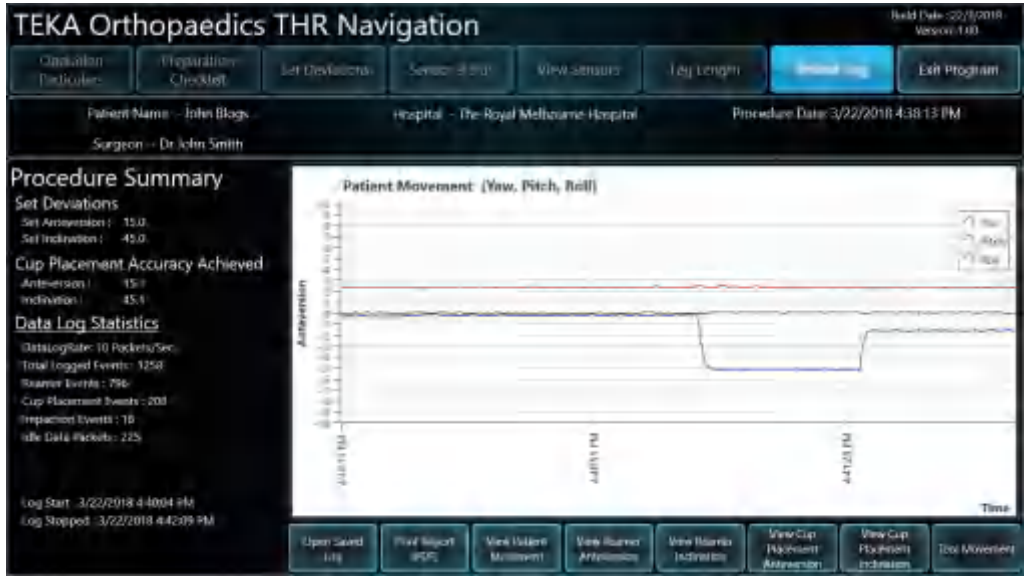


Image 2 Screen Capture of Patient Movement
患者移动截图

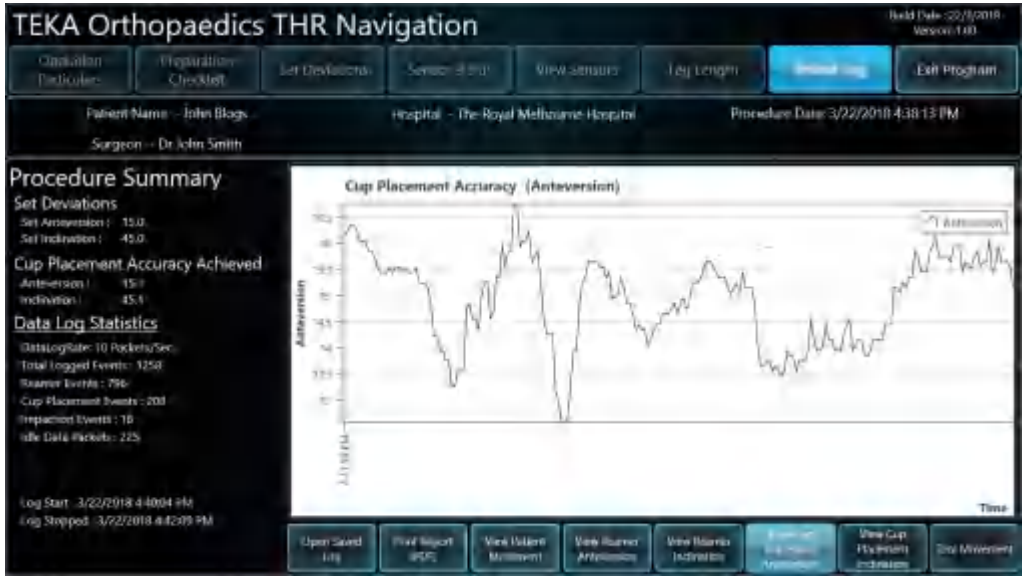


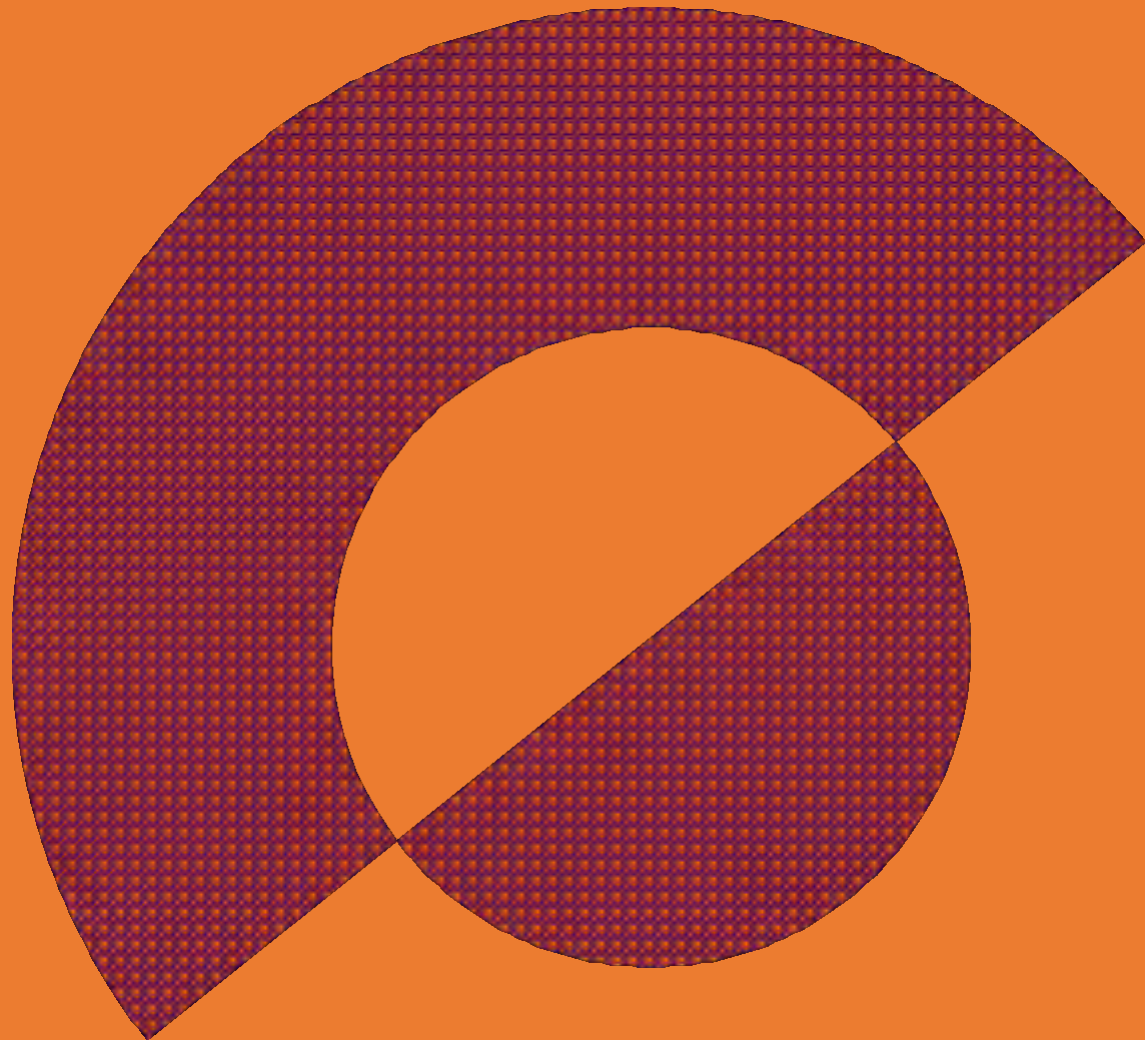
Image 3: Screen Capture of Anteversion
前倾截图

tekA Software 软件

Anterior Approach and Offset

前路方法和偏移

Anterior approach offset accuracy is an inherent benefit provided by the ability to dynamically monitor reaming in real time.
前入路偏移精确度是实时动态监控扩孔能力的固有优势。
Anterior approach is preferred by some surgeons. The TekA system is capable of providing data for anterior approach procedures. An upgrade to the patient sensor pack will be completed to enable this to occur.
一些外科医生更倾向于采用前路入路。 TekA系统能够为前入路手术程序提供数据，为了实现这一目的， 将完成对患者传感器包的升级。
Minimally Invasive Posterior approach can be effectively undertaken using the TekA device and system.
微创后路入路可以有效使用TekA设备和系统进行的操作。



Development Status 研发进展

A. **“Proof of Concept”** attained through the audit conducted at Kings College Hospital. Further device and system upgrades are required to now provide ‘user friendly’ design improvements to improve surgeon’s contact, more robust sensor fixing, secure safe zones and mitigate the interactive impact of conflicting wifi systems in the operating theatre.概念验证完成，需改进接触、传感器固定、确定安全区，系统互动等

B. Advanced magnetometer capability is being investigated to enable the potential inclusion of dynamic “yaw” measurement (currently yaw is estimated as a mathematical derivative of pitch and roll). Recent technology advancements being investigated is expected to allow direct measurement of “yaw”. 正在研究磁力计功能，直接测量“偏航”。

C. Advanced technology adopted in the battery pack provides consistent energy quality. Energy status can be viewed via the management software. 电池组提供持续能源

D. Once TekA’s next audit is completed, integration of feedback from the **User Acceptance Testing (UAT)** programs will be assessed and integrated (where appropriate) for final manufacturing design to be completed.下一次审核完成后，将对用户接受度测试计划的反馈信息进行评估和整合，以完成最终的制造设计。

E. Advanced updated software is now underway to create the final version for general market which will be finalised post UAT. 软件正在UAT结束后定最终版本

F. Electrical/electronic components have provisional **CE Mark status**. 电子器件有临时CE认证。

Patents 专利

A. The TekA device technology included international registration of ILO’s patents pending which had entered the national phase.

包括ILO正在申请的国际专利，已进入国家阶段

B. Recent significant changes to TekA’s design and technology have led to allowing patents pending to lapse on hold until it is determined if new patents need to be lodged to define new inventive design.

其他新专利正在评估是否申请。

Technology Benefits
技术效益

Patients患者

- ▲ Enables increased MIS (minimally invasive surgery) operations, (the system will enable minimally invasive operations through a 5 to 10cm incision (usually 20 to 25cm) and is readily adaptable to most existing reamers and impactors.) 可微创
- ▲ Enhanced surgical outcomes including less bone loss due to more accurate reaming 改善手术效果，降低骨损失
- ▲ Reduced probability of revision surgery 降低翻修率
- ▲ Increased durability of prostheses due to reduced wear from "misalignment" 校准准确，提高假体的耐用性

Surgeon外科医生

- ▲ Real-time monitoring实时
- ▲ Enables achievement of individual pre-set alignment prior to robotic surgery 术前定制化对准
- ▲ Data capture during reaming and impaction数据捕获
- ▲ Standardization of procedure and the TekA system allows for more MIS operations 手术标准化，更多MIS手术成为可能
- ▲ Improved surgical outcomes 手术效果改善
- ▲ Increased accuracy and less stress for 'low volume surgeons' 提升准确度，降低外科医生压力

healthcare funds资金

- ▲ Reduced costs 降低成本
- ▲ Reduction of revision surgeries 翻修率下降
- ▲ Increased operating life of prosthesis (now 12 to 15 years-should last up to 30) 使用寿命增加
- ▲ Optimised and useful alignment data from operations/procedures

优化后的有效数据

Prosthesis manufactures 假体生产

- ▲ Reduces the potential of litigation 降低诉讼
- ▲ Increase market penetration of THR 增加市场占有率
- ▲ Common platform can be used with most prostheses 适用于大多假体
- ▲ Consistent real time data suitable for enhanced data analytics 实时连续数据做分析
- ▲ Enables considerable market differentiation where the manufacturer can provide a prosthesis in conjunction with an alignment device to guarantee accuracy.

形成差异化市场，假体制造商可以与对准设备一起提供以保证准确性。

Feature 特点	TekA
Does not impede surgeon line of sight 不妨碍实现	✓
Supports MIS 支持微创	✓
Real Time Guidance through visual display 实时指导	✓
System component external to patient 系统部件在患者外部	✓
Can be used for training and simulation 可用于培训和模拟	✓
Compensates for patient pelvic moves during surgery 患者可移动	✓
Continuously shows patient position relative to reamer and cup impactor during surgery 持续显示患者体位与假体的相对位置	✓
Supports minimum and accurate reaming 支持最小和准确扩孔	✓
Provides accurate reaming and impaction 精准扩孔和打压	✓
Compatible with most existing theatre tools 与现有工具兼容	✓
Centralised management system 中央管理系统	✓
All target angles adjustable for patient 所有角度可调	✓
Low cost production and hospital time 生产成本低，住院时间短	✓
Real Time Data capture during reaming and impaction 实时数据捕获	✓
Custom datasets for surgeons, theatres, hospitals etc. 定制化数据库	✓
Expandable functions to include other parameters and techniques 可扩展应用	✓
Teaching aid for junior surgeons 对初级外科医生有教学指导	✓
Low setup time 设置时间短	✓

Competitive Landscape 竞争优势

TekA technology is significantly advanced compared to the existing competitors in the medical device market in terms of product features. The TekA system allows surgeons to establish accurate alignment prior to robotic surgery.在产品功能方面，与医疗设备市场中的现有竞争对手相比，TekA技术具有明显的先进性。 TekA系统允许外科医生在进行机器人手术之前建立准确的对准。

The Market Opportunity
市场机会

The “hip replacement market” is large and rapidly expanding. The market for the device is extensive and global. Global THR market is estimated at USD 7billion currently, growing at 5.9% per year. In China and India it is growing at 14% and 17%year respectively. Key market drivers include:-

“髋关节置换市场”很大并且正在迅速扩展。 该设备的市场是广泛的，并且是全球性的。 目前，全球THR市场估计为70亿美元，每年增长5.9％。 在中国和印度，它分别以每年14％和17％的速度增长。 主要的市场驱动因素包括：-

- ▲ Higher costs of THR litigation potential in developed countries like NorthAmerica and Europe due to failed operations; and

由于操作失败，在北美和欧洲等发达国家，诉讼的潜在成本较高；

- ▲ Emerging markets looking to gain a foothold in the closely held THR bio medical device market and provide a solution for the rapidly growing numbers of THR patients.

新兴市场希望在THR生物医疗设备市场中立足，并为快速增长的THR患者提供解决方案。

- ▲ The universal need for Government Health Departments to find low cost solutions to reduce rapidly growing health costs.政府卫生部门普遍需要找到低成本的解决方案，以减少快速增长的卫生费用。

The Market 市场

In the United States, ‘low volume surgeons’ perform up to 40% of all THR operations. The market for THR operations is expanding worldwide. The Worldwide market is currently growing at 5.9% pa. In China it is growing at 14% and India by 17%. There are double digit growth rates in the BRICS economies. According to the International Osteoporosis Foundation, there are rapidly increasing rates of osteoporosis particularly in the Asia / Pacific region where up to 90% of the ‘over 50 population’ lack sufficient levels of vitamin D.
全球THR市场每年以5.9％的速度增长。在中国，增长率为14％，在印度，增长率为17％。金砖国家的经济增长率为两位数。骨质疏松症的发病率正在迅速上升，尤其是在亚太地区50岁以上人口。

This is an indicator for an increase in potential fracture rates. They estimate that half the world’s fractures will occur in China by 2050 where over 600 million people will be over 50 years old and 200 million over the age of 70. They also estimate there will be similar statistics in India.
这是潜在断裂率增加的指标。预计到2050年，全球一半的骨折将发生在中国，届时50岁以上的人口将超过6亿，而70岁以上的人口将达到2亿。

With the ageing generation in the Western World, together with growing rates of obesity and THR operations being performed on a younger cohort than in previous generations, the THR market will continue to quickly trend upwards. The average direct cost of a hip fracture in 2007 was USD3,603 and statistics from different cities indicate that the cost of hip fracture has been increasing at a rate of 6% per year. In 2006 China spent around USD1.5billion treating hip fracture. It is estimated that this will rise to USD12.5billion in 2020 and by 2050 to more than USD264.7billion.
随着西方世界人口的老龄化，以及肥胖的发生率和与前几代人相比，更年轻的队列中进行的THR手术的增加，THR市场将继续迅速上升。 2007年，髋部骨折的平均直接成本为3,603美元，数据表明，髋部骨折的成本每年以6％的速度增长。 2006年，中国花费约15亿美元治疗髋部骨折。预计到2020年，这一数字将增至125亿美元，到2050年将增至2647亿美元以上。

$3,000,000

Funding Requirement
融资300万

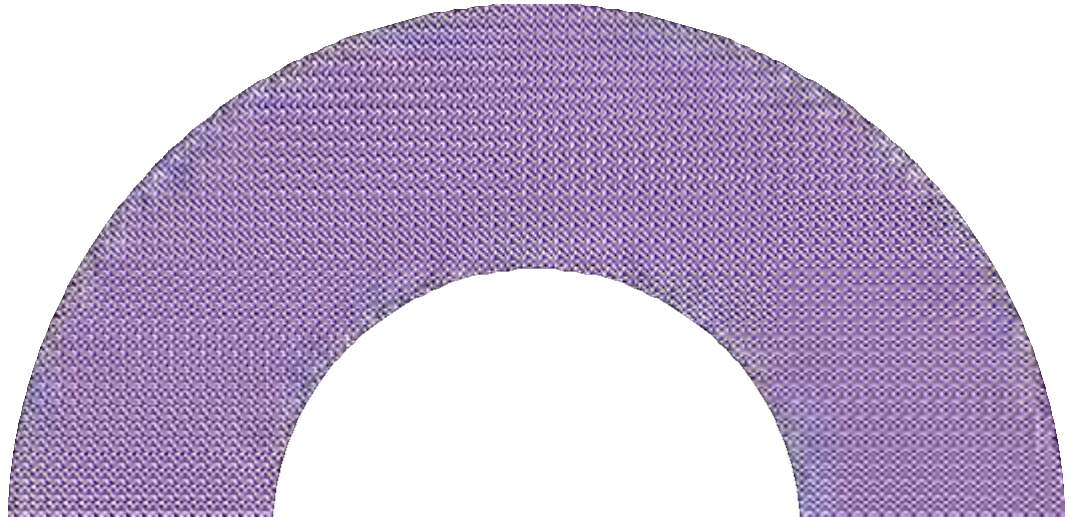
Towards further medical audits, design refinements to deliver an "off the shelf" finished device for surgeons use, registrations and product development to achieve commercialisation.

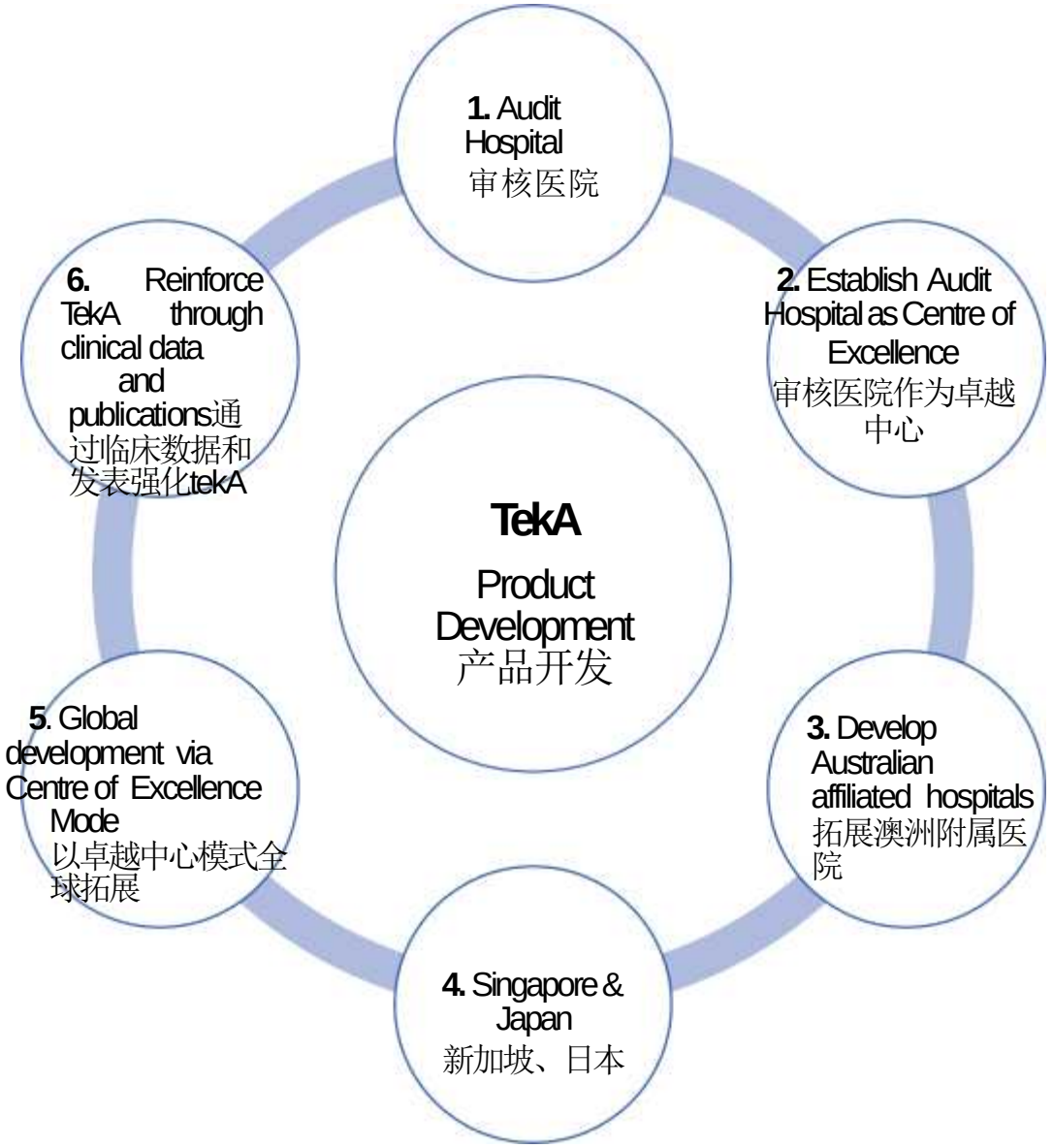
用于进行进一步的医学审核，对设计进行改进以提供“现成的”成品设备，供外科医生使用，注册和产品开发以实现商业化。

Immediate Company Goals

公司近期目标

- ▲ Complete final operations to collect data for surgical and reporting results.
  完成最终手术，收集数据，分析结果
- ▲ Finalise the Australian based medical audit process to reinforce KCH ‘proof of concept’ and verify new processes.
  完成医学审核，强化已有概念验证，验证新工艺。
- ▲ Complete toolset refinements to provide a high level ‘user friendly’ medical device for THR surgeons.
  完成工具优化，提供用户友好的器械
- ▲ Commence registrations and regulatory compliance of the TekA Device in target countries for sales approvals.
  在目标国家开始审批注册
- ▲ Complete brief for manufacturing of training devices for distribution to affiliate hospitals.
  培训设备制造的完整摘要，以分发给附属医院。
- ▲ Commence comprehensive training program documentation.
  开始综合培训项目文件
- ▲ Develop ‘surgical adoption’ strategy for trial deployment of TekA system as the alignment tool of choice.
  “手术采用”策略，以尝试将TekA系统部署为首选的对准工具。
- ▲ Introduce product development strategy to overcome ‘traditional resistance’.
  引入产品开发战略，战胜传统阻碍
- ▲ Sell to or joint venture with a prosthesis manufacturer seeking a point of differentiation to increase their prosthesis sales in the global market.
  出售给或者与假体生产商合资





Product Development Strategy 产品开发战略

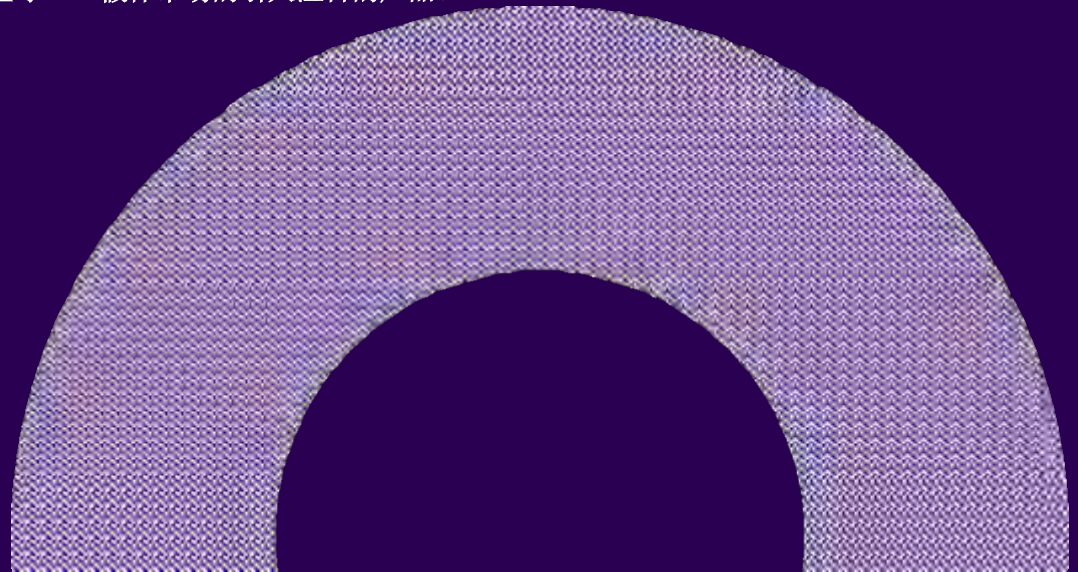
TekA seeks to partner with or sell to a hip prosthesis manufacturer to develop a point of difference for the manufacturer in the global medical device market. A successful alliance between an established prosthesis manufacturer and TekA's accuracy alignment system is seen as an effective development strategy to advance the commercial success path of both company products in the global market.

TekA寻求与髋关节假体制造商合作或出售给假体制造商，进而为制造商在全球医疗器械市场上找到差异化的地方。 一家成熟的假体制造商与TekA的精确对准系统之间的成功联盟被视为一种有效的发展战略，可以促进这两种公司产品在全球市场上的商业成功之路。

Financial Model 财务模型

TekA is building a revenue model for the sale of the TekA device and system that would be implemented in conjunction with an existing prosthesis manufacturer who would do well to include the TekA technology to enhance their existing sales of prostheses. This model would highlight the commercial benefit for a manufacturer taking over the TekA device and system to increase the manufacturer's existing sales. The offer of a high quality prosthesis that included alignment accuracy would be a compelling product in the global THR prosthesis market.

销售TekA设备和系统的收入模型，与现有的假体制造商一起实施，该假体制造商利用TekA设备和系统以增加制造商现有销售额的商业利益。 包括对准精度在内的高质量假体产品将成为全球THR假体市场的引人注目的产品。



Growth Potential 发展潜力

The business currently has considerable growth potential. A strong lift in Enterprise Valuation will come as a result of the following:-

该业务目前具有可观的增长潜力，原因如下：

1. Completion of the Australian medical audit process (near term). 近期完成澳洲医学审核过程
2. Gaining provider status for hospitals both in Australia and overseas. 在澳大利亚及海外医院获得供应商身份
3. Identification of a prosthesis manufacturer to acquire the TekA device and system to enhance the manufacturer's global sales. 寻求假体生产商开展生产，并全球化销售

Valuation估值

Upon final stage development to an 'off the shelf' product for surgeon use in immediate surgery the Company intends to engage a third party financial advisor to draft a comprehensive market appraisal of the Company's current value and the value of the Company's assets upon completion of the TekA medical device development.现成产品的最后阶段请第三方财务机构对公司开展评估。

Exit Strategy 退出机制

Exit for shareholders will be via a trade sale to a larger bio medical device company able to bring access to global markets. The conjunction of TekA's device with a prothesis manufacturer will create a unique opportunity for an existing global prosthesis manufacturer incorporating accuracy with existing prosthesis sales.通过与大型生物医疗设备公司的贸易交易退出

Risk风险

There are a number of risk factors, both specific to TekA and of a general nature, which may affect the future operating and financial performance of TekA, the industry, and global markets in which it operates and the outcome of an investment in TekA. There can be no guarantee that TekA will achieve its stated objectives.
既有公司特有风险，也有一般性风险，它们可能会影响TekA的未来运营和财务绩效，其运营所在的行业和全球市场以及对TekA进行投资的结果。 不能保证TekA将实现其既定目标。

Before deciding to invest in TekA, potential investors should read this Information Memorandum in its entirety, and then make an assessment of the risk factors that could affect the operating and financial performance of TekA.
投资前应评估风险因素

RISK 风险	MITIGATION 降低风险	PROBABILITY 可能性
Failure to successfully complete audits for point-of-care 无法成功完成即时审核	To date TekA has taken a cautious and iterative approach to the acquisition of ILO. There is a strong sense of involvement from the team to ensure that ILO's technology patents are concurrent and have merit in consideration of the latest developments. In the unlikely event that the technology does not pass the current audit round, system upgrades will be undertaken and further audit rounds will be done.以确保ILO的技术专利是并发的，将进行系统升级，进一步的审核。	LOW 低
Competitive product that does more for less 竞品	Many competitive products are invasive and more complex. Logically there may be an unknown entity developing competitive technology. 许多竞品是无创，更复杂	MODERATE 中
Speed to market too slow to "win" market share 进入市场太慢	Speed to market is a function of available capital to execute the strategy. The TekA team sees the conjunction of ILO technology with the more advanced TekA technology to be at the forefront of known competitive technology. This is a fast growth area in health services and attracts high investment capital in a competitive market.依赖于可支配的资本，技术是竞品里领先的	HIGH 高
Locked out by Tier 1 providers 被第一梯队供应商锁定	Work closely with Tier 2 providers seeking a point of difference to beat Tier 1s who are highly established industry leaders. 与第二梯队供应商紧密合作联合对抗第一梯队	MODERATE 中
Development of new generation sensors新一代传感器研发	The current sensors are "state of the art" however the system architecture and software do allow for a change in sensor format. 目前传感器是领先的，但系统架构和软件需要按照传感器变化	LOW – longer term 低——长期
Failure to gain surgical acceptance 无法获得外科认可	This is a function of marketing and PR as much as technical and utility acceptance. It is imperative that TekA forms strong relationships with audit surgeons and hosting audit hospital. Furthermore, adoption by affiliate hospitals (both locally and globally) will be essential to success. 与审核的外科医生和开展审核的医院保持紧密关系，拓展地方和全球附属医院	MODERATE 中
Lack of sufficient capital 资金不足	A significant risk for any technology project. Lack of capital will impede speed to market, finalisation of patents, introduction of our commercialisation program etc. 任何技术项目都会遇到	MODERATE 中

tekA Orthopaedics

DEVICE TECHNOLOGY

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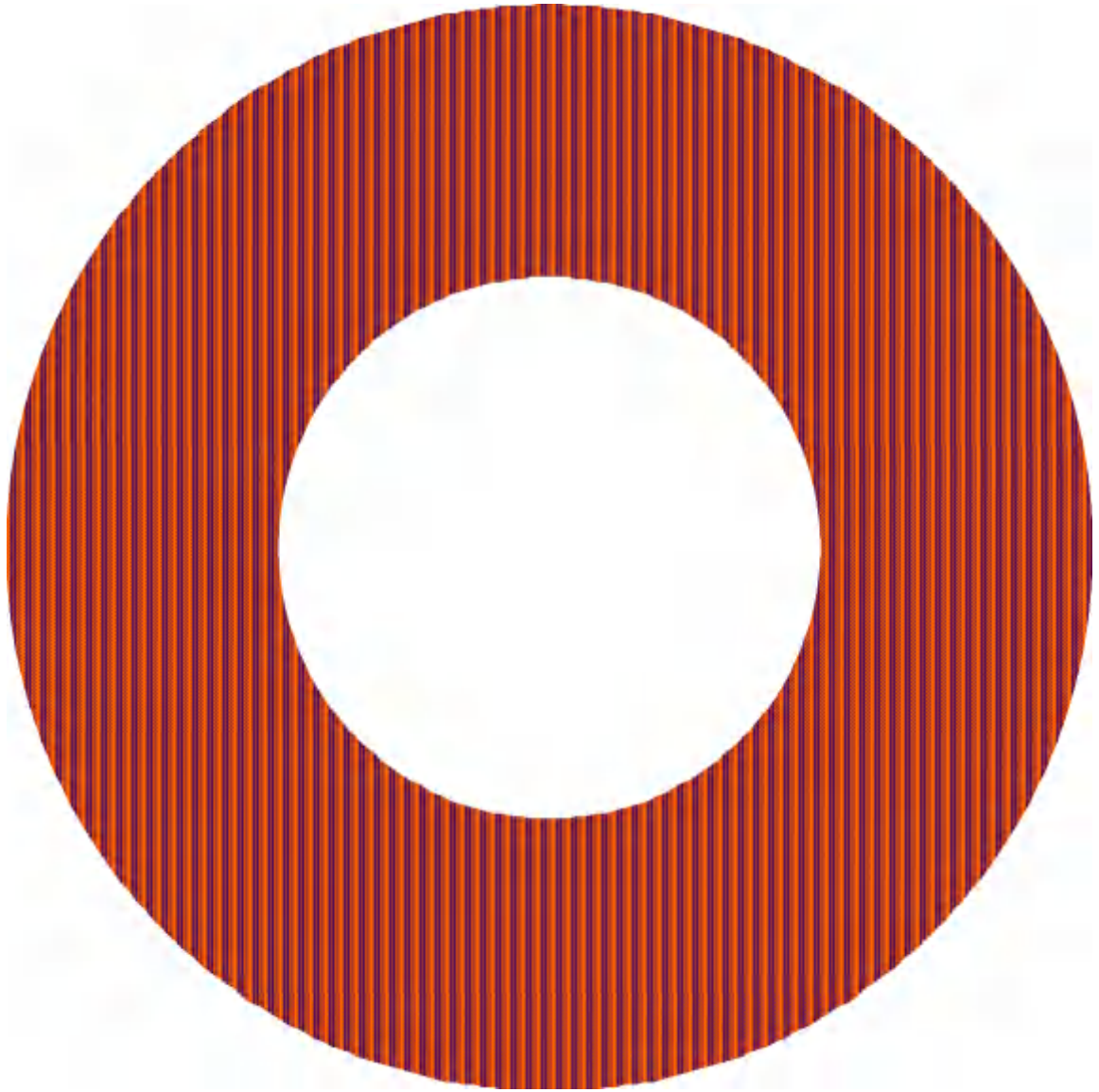
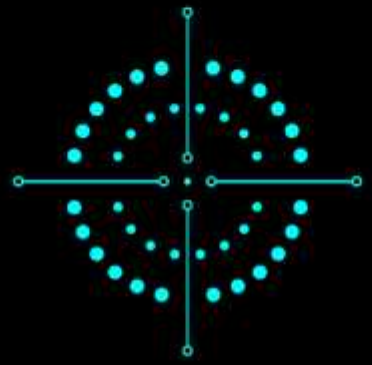




PRECISION AI

PRECISION AI

Reinventing Orthopaedics

重塑骨科

An Australian company, founded by surgeons, mathematicians and engineers with the mission to leverage Artificial Intelligence and Spatial Computing to advance preoperative planning and visualization in orthopaedic surgery.

这是一家由外科医生，数学家和工程师共同创立的澳大利亚公司，其使命是利用人工智能和空间计算来促进骨科手术的术前计划和可视化。

Our Domain我们的领域

Existing between Radiology and Operating Theatre
存在于放射科和手术室之间

PRECISION AI

Artificial Intelligence
人工智能

“Of all the places where Artificial Intelligence is gaining a foothold, nowhere is the impact likely to be as great as in Healthcare.”在人工智能立足的所有地方，影响最大的可能莫过于医疗保健。

- Fortune Magazine

Orthopaedics骨科

The branch of medicine concerned with conditions involving the musculoskeletal system.
涉及骨骼肌肉系统疾病的医学分支。

Joint Disease Facts 关节疾病事实

The leading chronic condition in the elderly.
老年人的主要慢性病

The second most common cause of presentation to a GP.
见全科医生的第二大最常见原因。

The third leading cause of health system expenditure.
第三大健康体系支出

Joint replacement or Arthroplasty is one of the most common orthopedic surgical procedures.
关节置换或关节置换术是骨科手术最常见的方法之一。

Joint Replacement Surgery

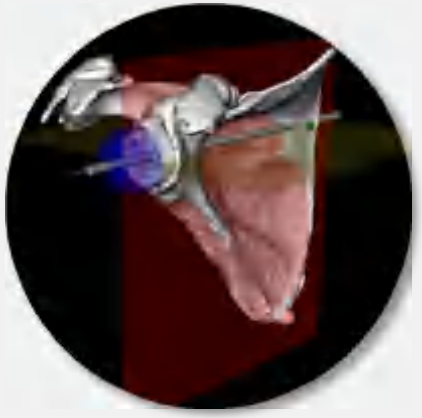
The Challenges
关节置换手术的挑战

Correct Positioning of the Prosthetic Implants
假体植入的正确定位

Acquiring Experience Takes Time
获得经验需要时间

Preoperative Planning
术前规划

Our Solutions
我们的解决方案



Intelligent Preoperative Planning
智能术前规划

Developing a preoperative planning and templating software for orthopaedic surgeons to plan an upcoming procedure in detail. Accurate preoperative planning is becoming an essential prerequisite for the success of orthopaedic procedures.
为骨科医生开发术前规划和模板软件，以详细计划即将进行的手术。 准确的术前规划正成为骨科手术成功的重要先决条件。

AI-Driven Surgical Decision Support
AI驱动的外科手术决策支持

The integration of Artificial Intelligence in surgical decision making has the potential to substantially impact and improve patient surgical outcomes by assisting with diagnosis and planning thereby reducing treatment variability and risk.
通过辅助诊断和计划，将人工智能集成到手术决策中具有潜在地显着影响和改善患者手术结果的潜力，从而降低了治疗的可变性和风险

Patient Specific Instruments/Guides
患者专用仪器/参考

Patient Specific Instruments or Guides are 3D printed single-use custom made medical devices that help to prevent inaccuracies during surgery and to make preoperative plans a reality
患者专用器械指南或参考是3D打印的一次性使用的定制医疗设备，有助于防止手术中的不准确性并实现术前计划。.

Business Model
商业模式

At present our business model is based on a combination of annual software licensing and a pay-per-use model. Due to different economic models and healthcare systems this model might vary between different countries and regions.
目前，我们的业务模型基于年度软件许可和按使用付费模型的结合。 由于不同的经济模型和医疗保健系统，此模式在不同的国家和地区之间可能会有所不同。

Intelligent Planning Software智能规划软件

Annual software license fee.年度软件许可费

Artificial Intelligence Driven Decision Support PlatformAI驱动的外科手术决策支持平台

Annual software license fee.

年度软件许可费

3D-Printable Patient Specific Guides3D打印患者专用仪器指南

If a surgeon then wants to use a 3D-printable Patient Specific Guide to help implement the surgical plan created in the above steps we will charge this on a per instance basis.

如果外科医生想使用3D可打印的《患者专用指南》来帮助实施上述步骤中创建的手术计划，我们将根据具体情况收取费用。

Market Size
市场规模

$50B+

The entire orthopedic devices market size stood at $51.33B in 2018
整个骨科器械市场规模在2018年达到$ 51.33B

$1B

The market for medical 3D printing is currently estimated at more than $1B.
医疗3D打印市场目前估计超过10亿美元。

$5B - 20%

The orthopaedics market size in China is expected to shortly attain $5B with the largest increase in joint and spine orthopaedic medical devices. The compound annual growth rate has been hovering around 20% over the past 7 years.
骨科市场规模 预计中国很快会实现 $ 5B，在关节和脊柱矫形医疗设备中增幅最大。 在过去的7年中，复合年增长率一直徘徊在20％左右。

$500M

The wider surgical preoperative planning market is currently estimated at more than $500M.
广义的外科术前计划市场估计超过5亿美元。

200,000

Globally more than 200,000 shoulder replacement surgeries are performed each year, with an annual increase of about 4%. In Australia that number is 7,000.
在全球范围内，每年进行超过200,000例肩关节置换手术，并且以每年约4％的速度增长。 在澳大利亚，这个数字是7,000。

We Are Seeking
我们寻求

01
Investment
投资

02
IP
知识产权

Sales in China 2021/2022
2021/2022年在中国销售

VISION
愿景

03
Regulatory Approval
审批

04
Distribution
经销

ResApp HEALTH

Enhancing remote respiratory diagnosis with cough sound analysis

通过咳嗽声音分析促进远程呼吸系统诊断

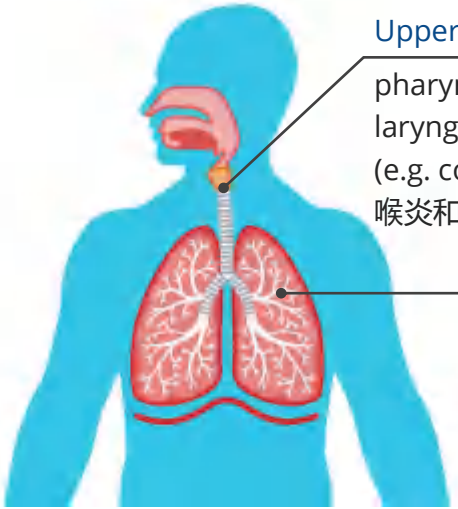
ResAppDx - March 2021

Respiratory disease diagnosis is the most common outcome from a doctor visit[1]看医生最常见的是呼吸疾病诊断

- 700M+ doctor visits p.a. for respiratory disease[2]
  每年有7亿人看医生是因为呼吸疾病
- The most common reasons for hospital admission are[3]:
  住院最常见原因：
  - Bronchiolitis (infants)细支气管炎（婴儿）
  - Asthma and pneumonia (children)哮喘和肺炎（儿童）
  - Pneumonia and COPD (older adults) 肺炎和COPD（老年人）
- High prevalence and growth in Asia 亚洲高患病率和高增长
  - 100M adults in China with COPD[4]
    中国有1亿成年人患COPD

1. Ambulatory care visits (office and emergency department), National Ambulatory Medical Care Survey 2015
2. ResApp estimate based on OECD doctor consultations per capita data (http://stats.oecd.org), and assuming 10% of visits (US prevalence based on NAMCS 2015 data) are for respiratory disease.
3. HCUP Statistical Brief #148 (2010)
4. Fang. L, et al., Chronic obstructive pulmonary disease in China: a nationwide prevalence study, *The Lancet Respiratory Medicine* 6(6), 2018

Differential diagnosis of respiratory disease requires multiple modalities呼吸系统疾病的差别诊断需要多种方式



Upper respiratory tract 上呼吸道

pharyngitis, nasopharyngitis, sinusitis, laryngitis and tracheitis
(e.g. common cold)咽炎，鼻咽炎，鼻窦炎，喉炎和气管炎（例如普通感冒）

Lower respiratory tract 下呼吸道

asthma, pneumonia, bronchiolitis, bronchitis, COPD and other viral lower respiratory tract infections
哮喘，肺炎，细支气管炎，支气管炎，COPD和其他病毒性下呼吸道感染

Diagnosed today using stethoscope, imaging, spirometry, blood and/or sputum tests
现在通过听诊器，影像学，肺活量测定，血液和/或痰液检查进行诊断

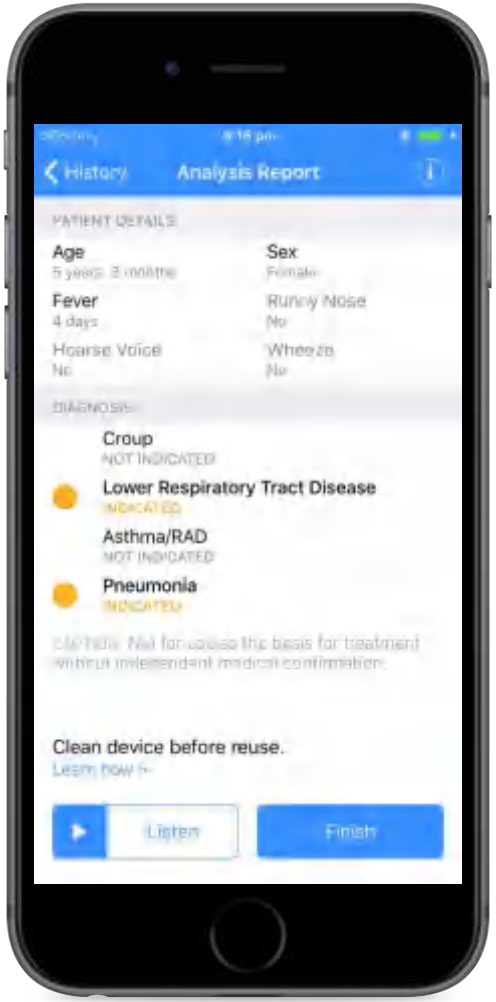
➞ These are time consuming, expensive, subjective, inaccurate and not usable remotely
这些都费时、昂贵、主观、不准确且无法远程使用

ResApp

Rapid point-of-care diagnosis快速即时诊断

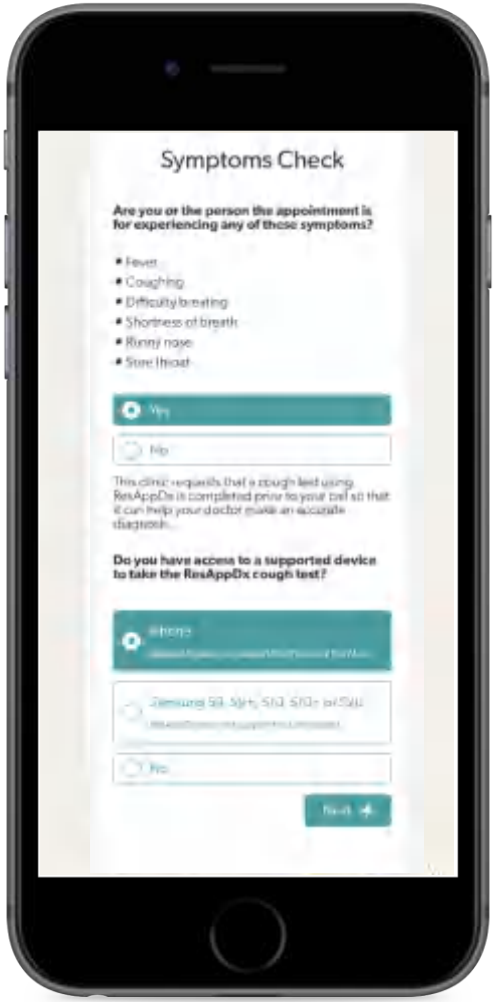
- ResAppDx uses machine learning technology to analyse signatures in cough sounds to diagnose respiratory disease 使用机器学习技术分析咳嗽声中的信号以诊断呼吸系统疾病
- Uses a smartphone's built-in microphone使用手机内置麦克风
  - No additional hardware required 不需要额外硬件
  - Real-time on-device analysis 实时设备分析
- TGA approved (Australia) and CE Marked (Europe) as a Class 2a medical device

TGA认证（澳大利亚）和CE认证（欧洲）为2a类医疗设备



Enabling telehealth with remote diagnosis
通过远程诊断促进远程医疗

- Up to half of all telehealth visits are for respiratory disease[1,2]
- 近一半的远程医疗访问是出于呼吸疾病
- Today, there is no ability to use a stethoscope and no accurate remote diagnosis tools available for telehealth
- 如今，远程医疗无法使用听诊器，也没有可用于远程医疗的准确的远程诊断工具
- When integrated into a partner's telehealth platform, ResAppDx provides clinicians with a software-only remote diagnostic test
- 集成到合作伙伴的远程医疗平台后，ResAppDx可为临床医生提供纯软件的远程诊断测试



1. Uscher-Pines L and Mehrotra A, Health Affairs 33(2), 2014
2. UnitedHealthcare Presentation (https://www.mobihealthnews.com/content/health-insurance-payer-related-digital-health-news-q2-2016)

Improved remote diagnosis benefits all stakeholders
改进的远程诊断使所有利益相关者受益

- **Clinicians:** greater confidence in remote respiratory diagnosis results in fewer referrals to clinics out of uncertainty.
- 临床医生：对远程呼吸系统诊断的信心增强，由于不确定性而转诊至诊所的次数减少
- **Patients:** avoid repeating their consultation with a new doctor and the associated travel and time to attend.
- 患者：避免重复与新医生会诊、相关的旅行和出诊时间。
- **Insurers:** avoid covering a more expensive clinical consultation
- 保险公司：避免承担更昂贵的临床咨询成本
- **Employers:** experience reduced workforce downtime.
- 雇主：减少人力资源的停工时间。

Clinical evidence 临床证明

- **Study design:** Blinded, prospective, single-staged with binomial endpoint
- **研究设计：**盲法，前瞻性，单阶段，二项式终点
- **Study population:** Children and adults presenting with signs and symptoms of respiratory disease (incl. cough, wheeze, stridor, increased WOB, cyanosis, crepitations or low oximetry levels)
- **研究人群：**表现出呼吸系统疾病征兆和症状（包括咳嗽，喘息，喘鸣，WOB升高，发绀,、湿啰音或血氧饱和度低）的儿童和成人
- **Study sites:** Joondalup Health Campus (adults and children) and Princess Margaret Hospital – Perth Children's Hospital, Perth, Western Australia
- **研究地点：**Joondalup Health Campus（成人和儿童）和玛格丽特公主医院–西澳大利亚州珀斯的珀斯儿童医院
- **Reference standard:** Clinical diagnosis formed by clinical adjudication panel using results from examination and extensive testing
- **参考标准：**临床审判小组根据检查和广泛测试的结果得出的临床诊断

Paediatric study results儿科研究结果

Breathe Easy Paediatric Study

呼吸容易儿科研究

(ANZCTR: ACTRN12618001521213)

- Double-blind, prospective study of 585 patients, aged 29 days to 12 years
- 29天至12岁的585例患者的双盲前瞻性研究

	Patients[1] 患者		Positive Percent Agreement[2] (95% CI) 阳性一致性	Negative Percent Agreement[2] (95% CI) 阴性一致性
	Y	N		
Lower respiratory tract disease 下呼吸道疾病	419	154	83% (79-86%)	82% (75-88%)
Asthma/reactive airways disease 哮喘/气道反应性疾病	149	381	97% (92-99%)	91% (88-94%)
Croup哮吼	68	500	88% (78-95%)	86% (82-89%)
Pneumonia 肺炎	60	509	87% (75-94%)	85% (82-88%)
Bronchiolitis 细支气管 (patients aged < 2 years old)	131	26	84% (77-90%)	81% (61-93%)

1. Number of patients clinically diagnosed as having disease (Y) or not having disease (N).
2. As per FDA guidance, positive and negative percent agreement (rather than sensitivity and specificity) are used when a new test is compared to a non-reference standard such as a clinical diagnosis.

Porter, P et al., A prospective multicentre study testing the diagnostic accuracy of an automated cough sound centred analytic system for the identification of common respiratory disorders in children, Respiratory Research *20(18), 2019.*

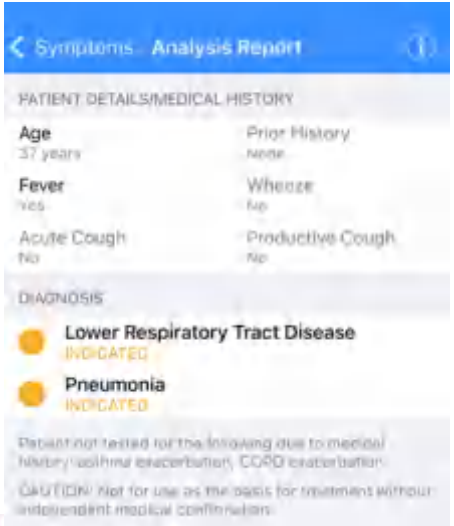
Adult study results 成人研究结果

Breathe Easy Adult Study

呼吸容易成人研究

(ANZCTR: ACTRN12618001521213)

- Double-blind, prospective study of 979 subjects 对979个主体的双盲前瞻性研究



	Subjects[1]		Positive Percent Agreement[2] (95% CI) 阳性一致性	Negative Percent Agreement[2] (95% CI) 阴性一致性
	Y	N		
Lower respiratory tract disease 下呼吸道疾病	358	163	88% (84-91%)	89% (83-93%)
Pneumonia 肺炎	159	163	86% (80-91%)	87% (80-91%)
Asthma exacerbation哮喘恶化	46	73	89% (76-96%)	84% (73-91%)
COPD	117	381	86% (79-92%)	85% (81-89%)
COPD exacerbation 恶化	86	78	83% (73-90%)	91% (82-96%)

1. Number of patients clinically diagnosed as having disease (Y) or not having disease (N).
2. As per FDA guidance, positive and negative percent agreement (rather than sensitivity and specificity) are used when a new test is compared to a non-reference standard such as a clinical diagnosis.

Claxton S et al., Diagnosis of chronic obstructive pulmonary disease (COPD) exacerbations using a smartphone-based, cough-centred algorithm, European Respiratory Society International Congress 2019.

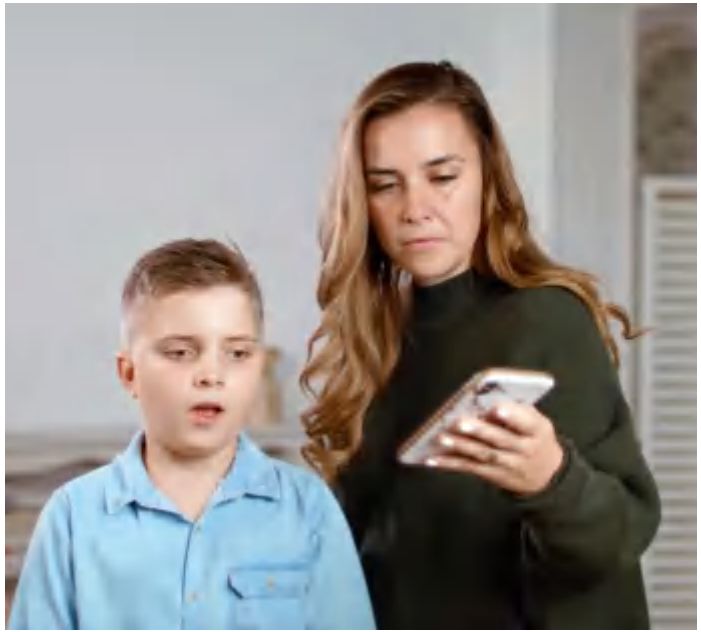
Porter P et al., Diagnosis of Lower Respiratory Tract Disease (LRTD) and Pneumonia Using a Smartphone-Based Cough-Centred Algorithm in an Adolescent and Adult Acute-Care Cohort, 24th Congress of the Asian Pacific Society of Respirology, 2019.

Porter P et al., Diagnosis of Chronic Obstructive Pulmonary Disease (COPD) Using a Smartphone-Based Cough-Centred Algorithm in a Mixed Disease Acute-Care Cohort, 24th Congress of the Asian Pacific Society of Respirology, 2019.

Claxton S et al., Detection of Asthma Exacerbation in Adolescent and Adult Subjects with Chronic Asthma Using a Cough-Centred, Smartphone-Based Algorithm, ANZSRS/TSANZ Annual Scientific Meeting 2020.

Summary 总结

- Up to 50% of all telehealth visits are respiratory related, with few tools available to remotely assess a patient
- 在所有远程医疗就诊中，多达50%与呼吸有关，几乎没有可用于远程评估患者的工具
- ResAppDx is TGA approved for ARTG listing as Software as a Medical Device (SaMD) that gives telehealth clinicians the ability to remotely assess a patient
- ResAppDx已获TGA认证，被ARTG列为软件即医疗设备（SaMD），使远程医疗临床医生能够远程评估患者
- Easy to use 便于使用
- Strong clinical evidence base 强大临床证据基础
- Reduces clinical referrals, improving the patient experience and reducing costs for insurers, hospitals and employers
- 减少临床转诊，改善患者体验，并降低保险公司，医院和雇主的成本。



Andaman7

One unique platform for

Next generation clinical trials

Empowering patients

Managing diseases

一个独特的平台：

下一代临床试验平台

赋能患者的平台

管理病情的平台

Vincent Keunen, CEO
+32 475 473436
vincent.keunen@andaman7.com

Investors

2021-01-27

for patients

为患者而存在

by patients

因患者而存在

Andaman7 management team　Andaman7管理团队

Vincent Keunen
CEO 首席执行官
CEO Manex, CIO Lampiris
CIO of the year 2016
2016 年最佳首席信息官

Philippe Lemmens
COO首席运营官
Accenture, Apple, Skynet, Belgacom, Telenet

Executive team achievements: 执行团队的成就

1. Distributed Medical Record for prevention platform 1 million patients
2. Secure medical messaging used by 90% of Belgian hospitals & labs
3. Two successful exits

1. 为疾病预防平台输送医学病历：涉及100万患者
2. 保护90%的比利时医院和实验室的医学数据信息
3. 两次成功地打入海外市场

A personal story 个人风采

Vincent Keunen 文森特 基恩

- Leukemia at 43 患有白血病 43岁
- Gleevec 格列卫（一种抗癌药物）

His son Pierre 他的儿子皮埃尔

- Bone cancer at 10 10岁时患骨癌
- 1 year of chemo, radiation, 1年的化疗，放疗
- bone marrow transplant, 骨髓移植
  leg amputation 截肢

Problems 目前存在的问题

1. Patients患者

Targeted treatments
没有针对性的治疗

Scattered health data 分散的健康数据

2. Care 护理

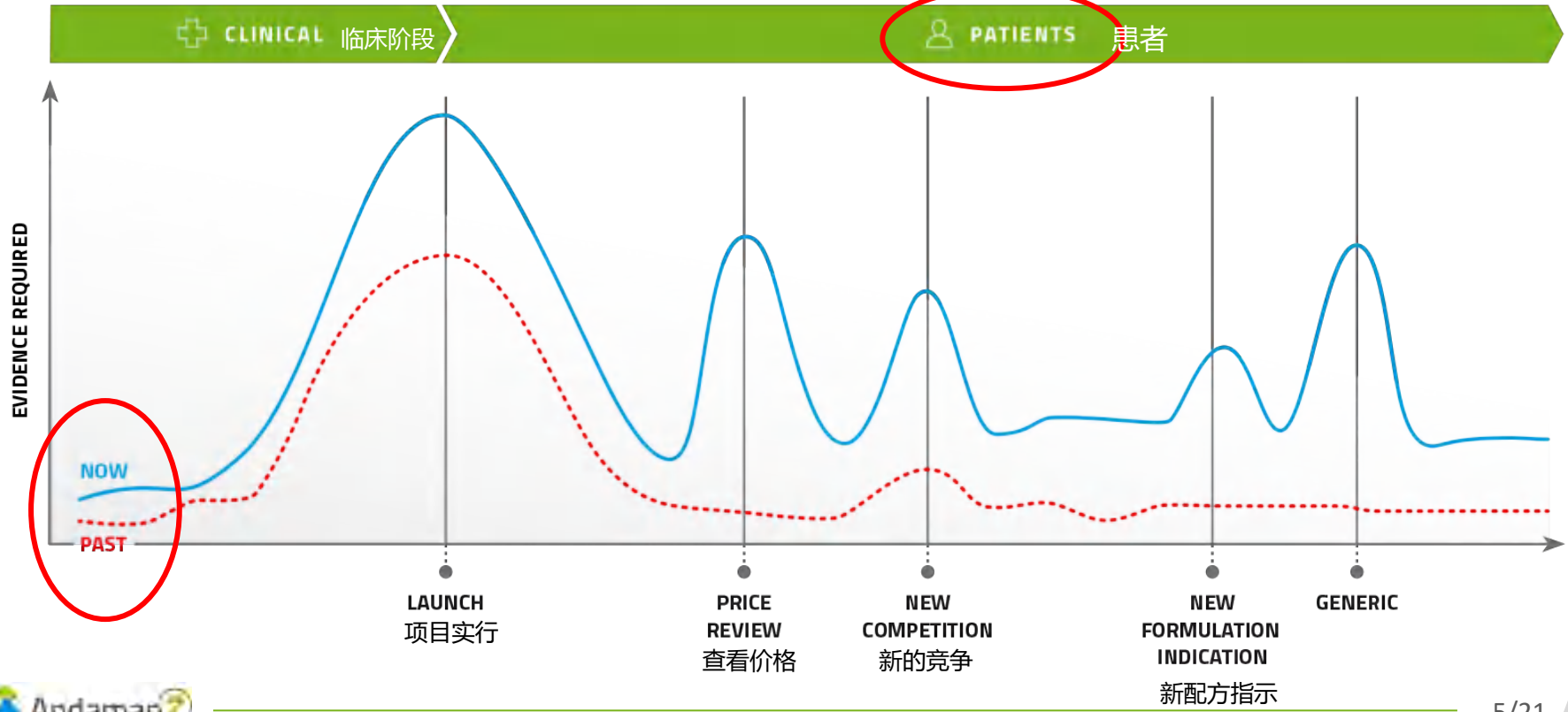
3. R&D 研发

Continuity of care
持续护理
~~DCT, RWE, PRO~~

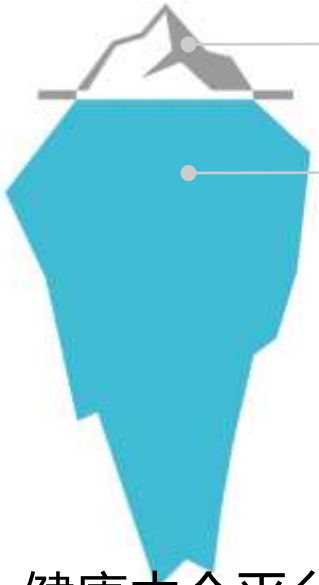
New needs for DCT, RWE, PRO, PEP
DCT， RWE， PRO, PEP的新需求

分散的临床试验
现实世界的数据
患者报告的结果
患者参与的平台

Decentralized Clinical Trials
Real World Evidence
Patient Reported Outcomes
Patient Engagement Platforms



The Andaman7 solution　Andaman7的解决方案



Easy to use & flexible mobile app　便于使用&灵活的移动应用

Dynamic data & screens　动态数据&屏幕

No coding, multiple studies, same app　无需编码 多项研究 可在同一应用平台操作

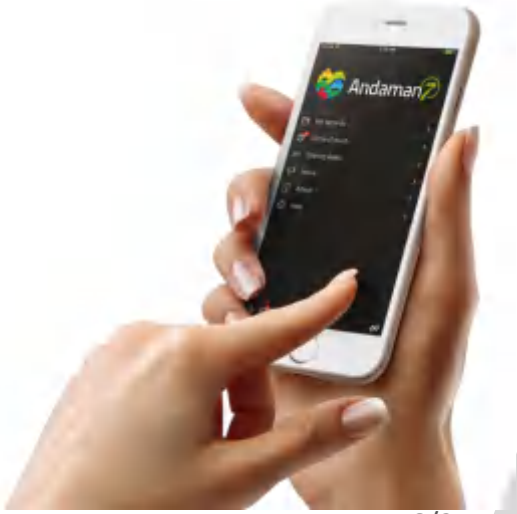
HIP: Health Intermediation Platform

No health data in cloud　云端不存储健康数据

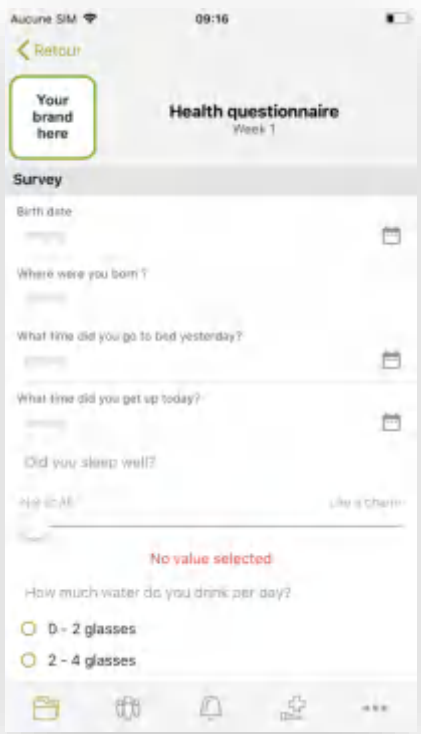
High interoperability　高互操作性

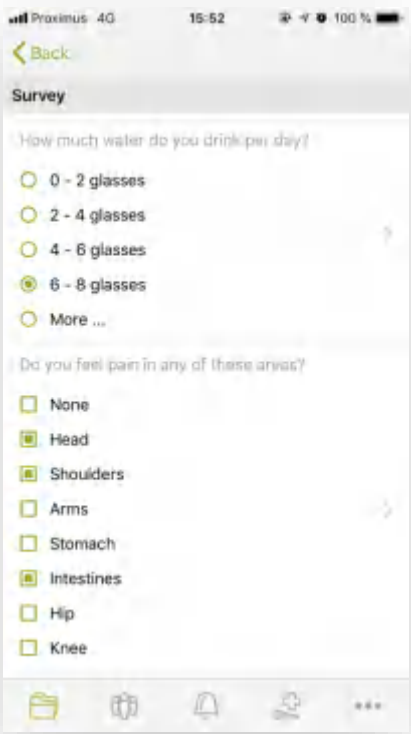
CDISC, ODM, FHIR, LOINC

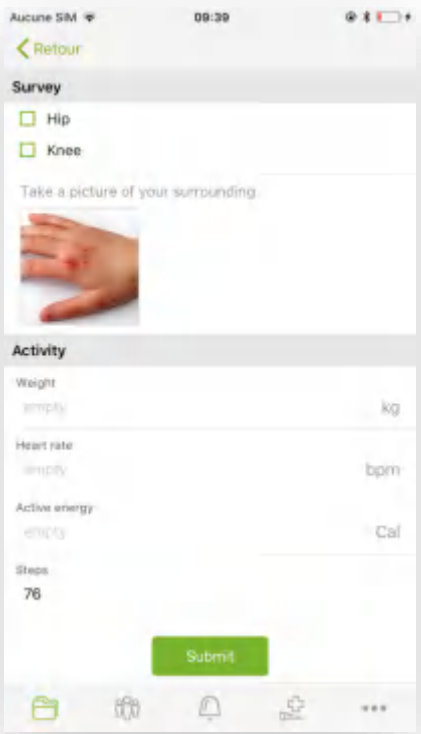
健康中介平台



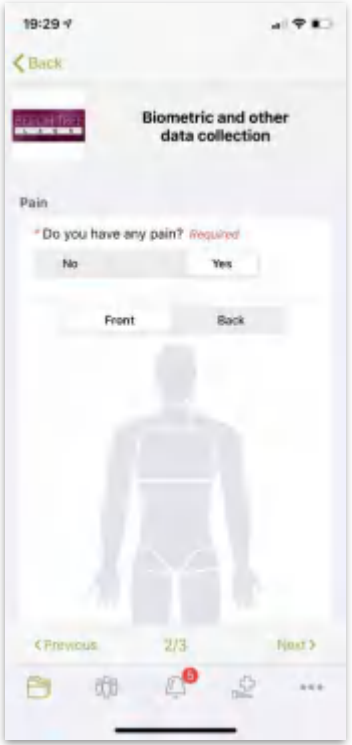
Clinical trials - Rich questionnaires 临床试验—各种问卷调查

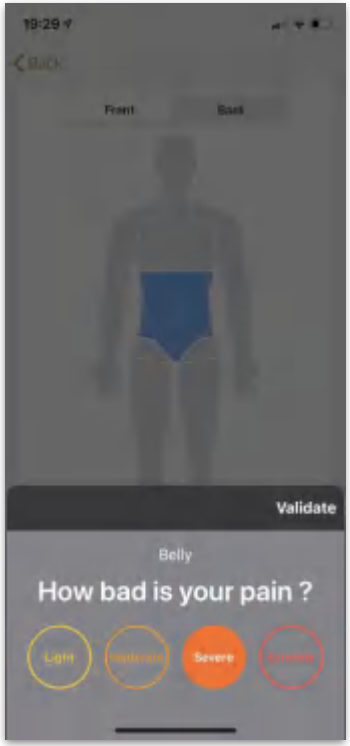




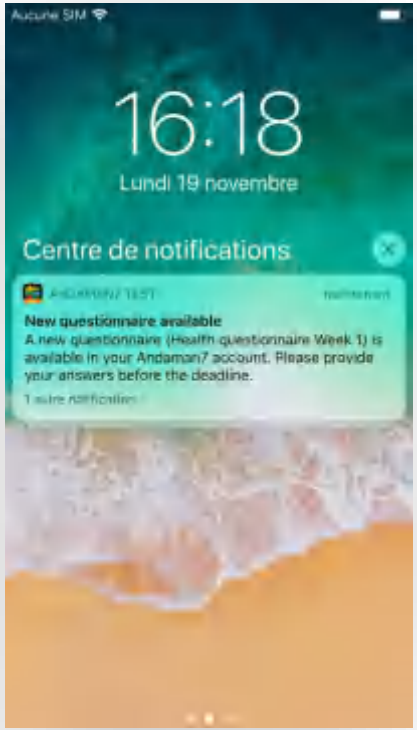


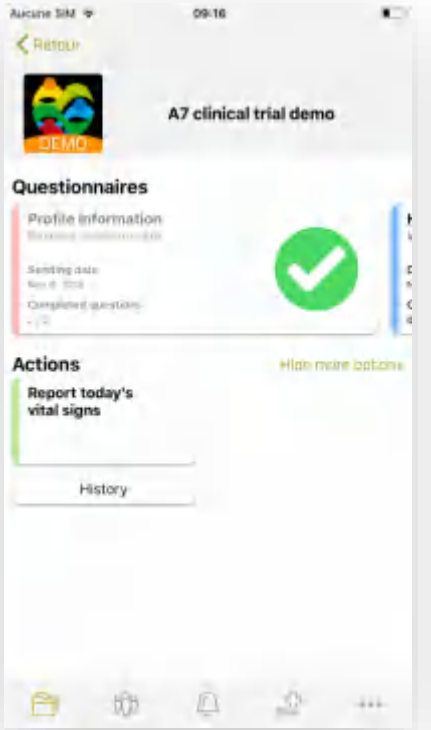
Visual widgets 平台视觉窗口



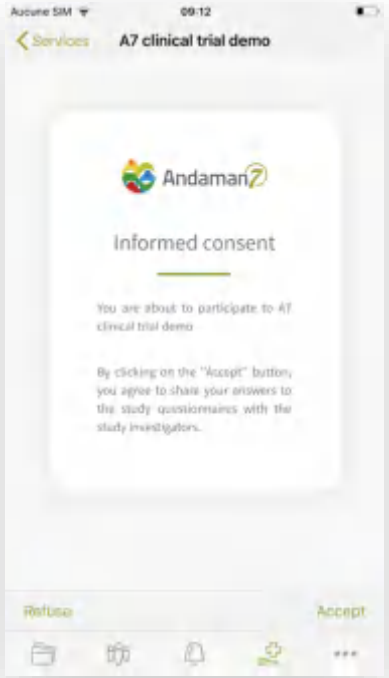


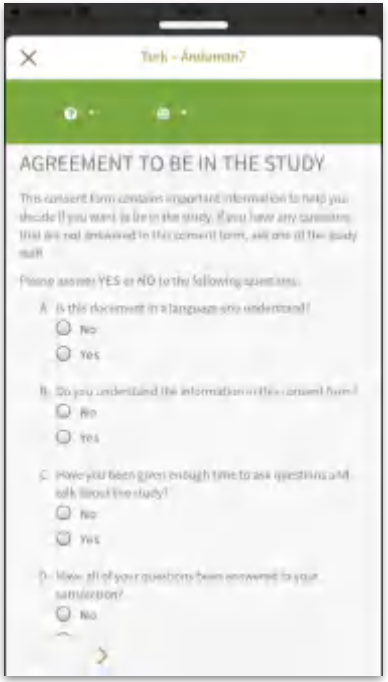
Motivational features. gamification 功能提醒特色，界面游戏化设计

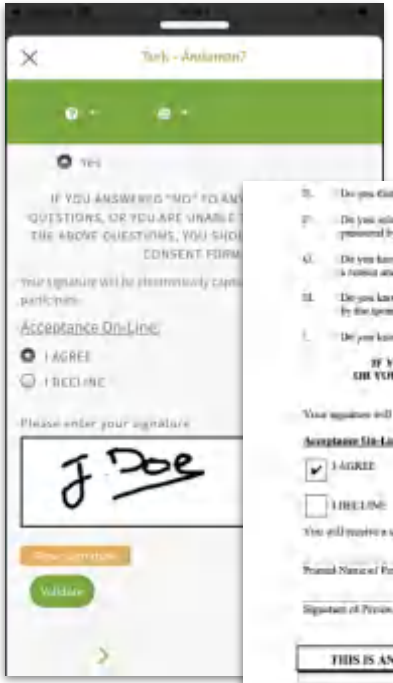




Advanced eConsent, re-consent... 先进的网页版知情同意书

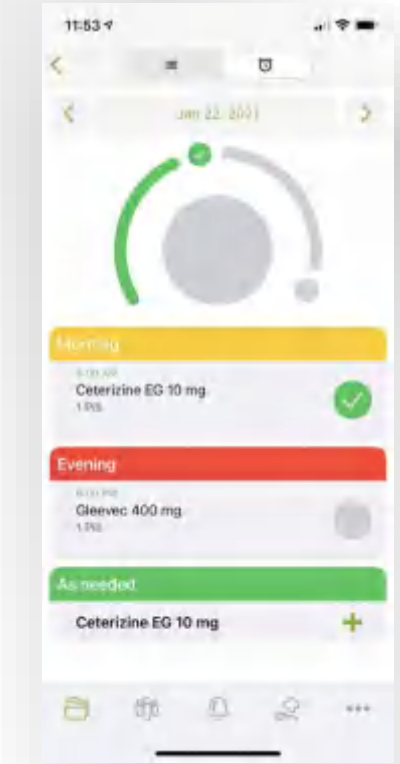






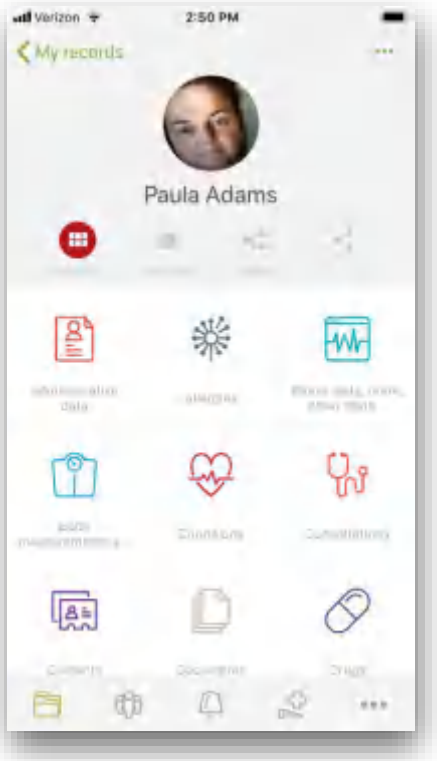
Medication adherence 严格遵循药物治疗过程

- Distribute schedule to all patients
- Reminders
- Intake registration
- Inclusion of intake in study
- Concomitant drugs with PHR
- 为所有患者制定病情相关安排
- 日常提醒
- 药物摄入登记
- 将药物摄入量纳入研究
- 药物使用同步在个人健康管理系统



PHR 个人健康管理系统

Personal Health Record



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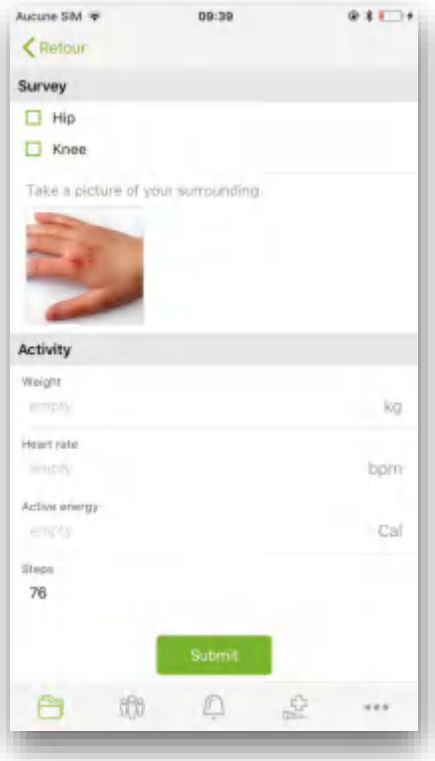
Virtrials 个人健康数据登记



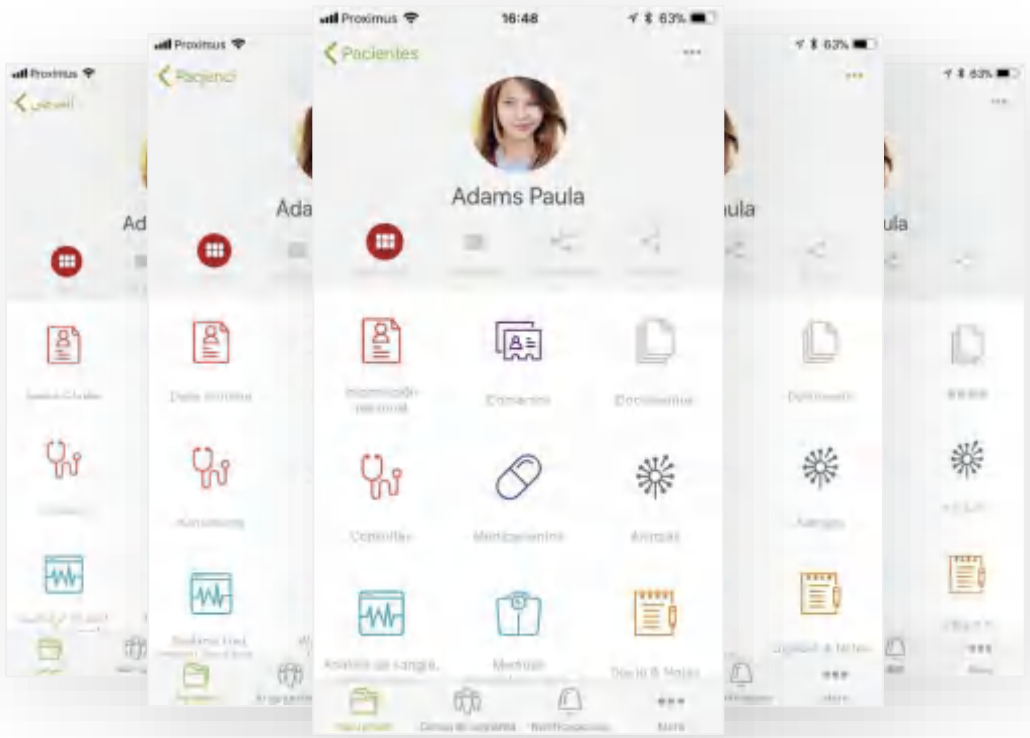
=

PEP
Patient
Engagement
Platform
病人参与平台

Global ambition 全球愿景

Available in the
20 most spoken languages on earth
在全球20个常见语种国家都可使用

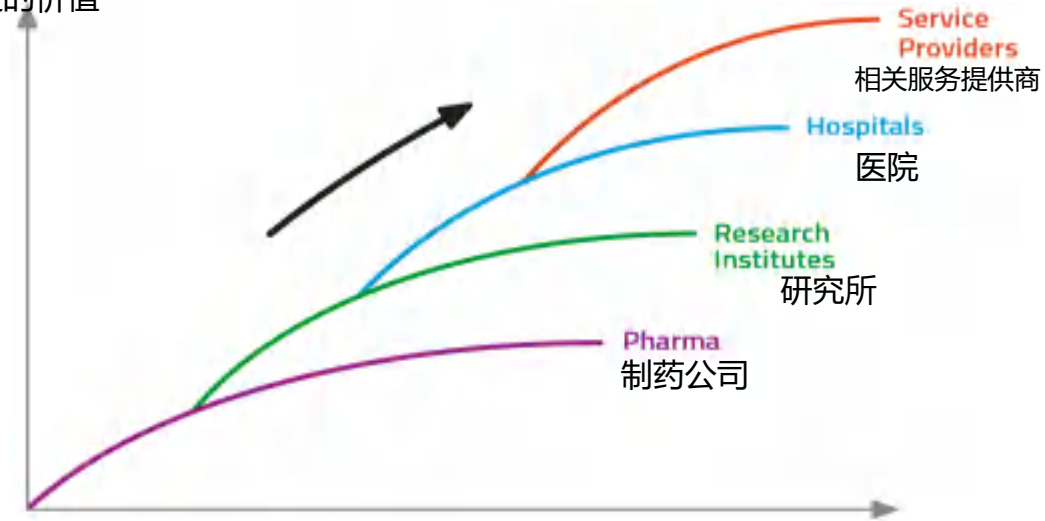
- + questionnaires in any language
- + 拥有任何语言版本的调查问卷



Growth path 成长路线图

1. **Data** connectivity
2. Data-driven **services**.
1. 链接数据
2. 提供数据驱动的服务

Value creation
创造的价值



Sales strategy:
销售策略：
Direct
Networking, Digital marketing
Channel partners
CROs, consultants

直接销售
网络销售，在电子平台市场销售
渠道伙伴
医药研发外包商，咨询顾问公司

Focus: next gen clinical trials 重点:下一代临床试验平台

Integration of a full PHR

整合个人健康管理系统的数据

medical + health data (activity, nutrition,...) 医疗和健康数据（个人活动，营养情况）

innovative data management 创新型的数据管理

Integration of wearables data

整合可穿戴设备的数据

Advanced “questionnaires”

智能化的电子问卷

Triple play: patient - care - R&D

三重层面：病人 护理人员 研发人员都可在平台操作

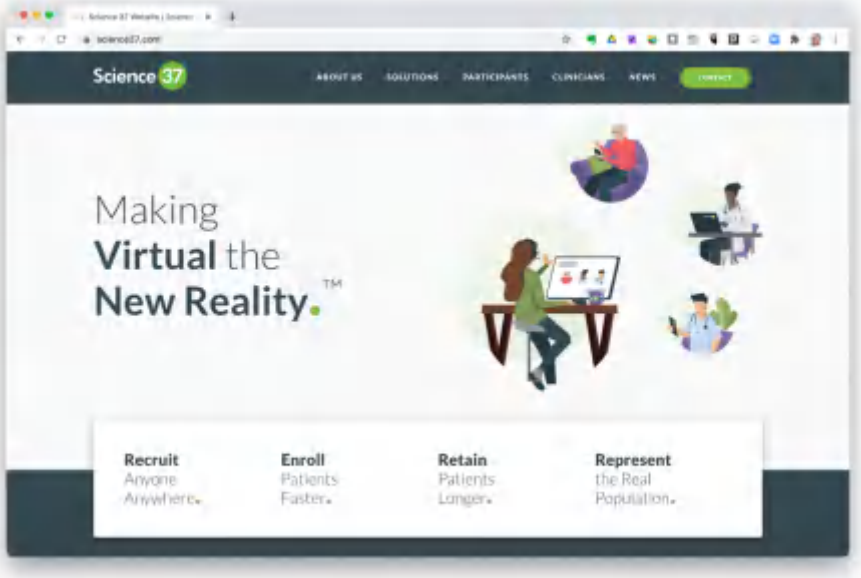
combine trials & disease management 整合了临床试验&病情管理

recruitment & less dropouts thanks to empowered patients

收集了更多病人的信息&赋能患者且因此降低了因疾病辍学或不能上班的人数

Competition 竞争对手

- Science 37 ($150M funding 1.5亿欧元的资金)
- Go Balto (bought by Oracle 被甲骨文收购)
- *Large CROs*
- *IQVia (Quintiles, IMS 昆泰医药，艾美仕)*
- *Medidata (bought by Dassault被达索集团收购)*
- *TriNetX, DataVant...*
- *EDC vendors*



Several could be partners / acquirers

其中几个可以成为合作伙伴/收购方

Business Model 商业模式

Free for patients 不对患者收费

We charge 我们收费的对象：

1. Pharma, Medical Device Man. & CROs 制药/医疗器械 制造商&医药研发外包商
   Speeding up trial recruitment 加快试验招募
   Running trials $100 per patient/year/study
   每位患者/每年/每项研究100美元
   Future - Hospitals for remote patient monitoring 未来—医院用来对病人进行远程监控
   Future - Marketplace of services 未来—服务市场

Financials 金融资金情况

Paid projects by #1 big pharma, several US biotechs & CROs

Andaman7 是一家制药公司，几家美国生物科技公司&医药研发外包公司的付费项目

	2018	2019 Pivot to pharma 重心转向制药领域	2020
Income (Biz + Grants) 收入（业务+拨款）	**B = 22 697€** G = 153 822€	**B = 71 190€** G = 368 835€	**B = 154 278€** G = 148 781€
Personnel cost 劳务支出	315 556€	333 185€	330 396€
EBITDA 未计利息、税项、折旧及摊销前的利润	- 10 327€	35 232€	64 885€
EBIT 扣除利息和税金前收益	- 233 968€	-496 265€	- 546 098€

Customers & partners in place 客户&合作伙伴

Current projects 目前的项目

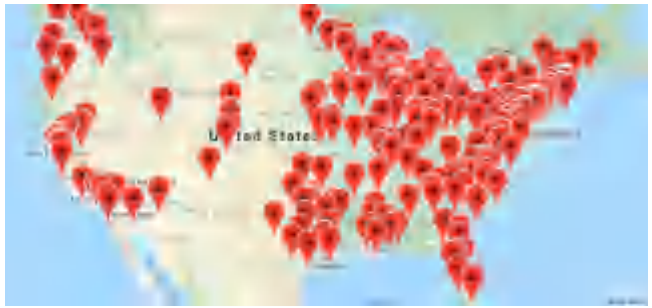
DCT with CROs & Biotechs
Top 10 Pharma - RWE study
Top 10 Pharma - Return data to patients
Patients association - Cancer registry
DCTwithCROs &生物技术公司
前十的制药公司-RWE研究
前十的制药公司-将数据返给患者
患者协会-癌症记录

2 x 7M€ project
EHR interop
Medical research
2个700万欧元的项目
电子健康病历交互操作
医学研究

EUROPEAN COMMISSION

10 EU countries,
10 languages, 40 hospitals
Largest EU cancer org
与欧盟10个国家有合作
与10个语种的地区，40个医院有合作
与欧盟最大的癌症组织有合作

EORTC



85% of US patients can get their hospital & lab data
85%的美国病人能够接触到自己在医院和实验室的数据

Funding 资金情况

- Funds raised 资本募集情况
  - 3M€ from business angels / entrepreneurs
    商业天使轮/企业家募集的300万欧元
- Non dilutive 非稀释资金
  - 3M€ grants 300万欧元的资助
  - Belgium + EU projects 比利时+欧洲项目

Strategic Investment opportunity 战略性投资机会

We have 我们拥有

- Very advanced technology 非常先进的科技
- Experienced team in health IT 健康信息技术领域的经验团队
- Early traction 早期的产品引入

Our ask 我们的任务

- Partner for business development at a very large scale
  大规模业务发展的合作伙伴
- Strategic investment 2M€ or M&A
  战略投资200万欧元或企业并购

Andaman7

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andaman7.com

OR

Available on the App Store

GET IT ON Google Play

Appendix/Backup slides
附录/备份幻灯片

Exit opportunities 海外的机会

Pharmaceuticals, med device manufacturers, CROs
Consumer health actors: Google, Samsung, Apple...
Health IT actors: Verily, 23andMe,Zocdoc...
B2B IT actors: Oracle, SAP,... + hundreds
Hospital EHR vendors: EPIC, Cerner, Allscripts... + hundreds
Payers, hospital groups (McKesson like)

制药，医疗器械制造商，医药研发外包
消费者健康行业的参与者：谷歌，三星，苹果...
健康信息技术领域的参与者：Verily，23andMe，Zocdoc ...
B2B IT的参与者：Oracle，SAP，... +数百名的平台参与者
医院EHR供应商：EPIC，Cerner，Allscripts ... +数百名供应商
付款人，医院团体（诸如McKesson）

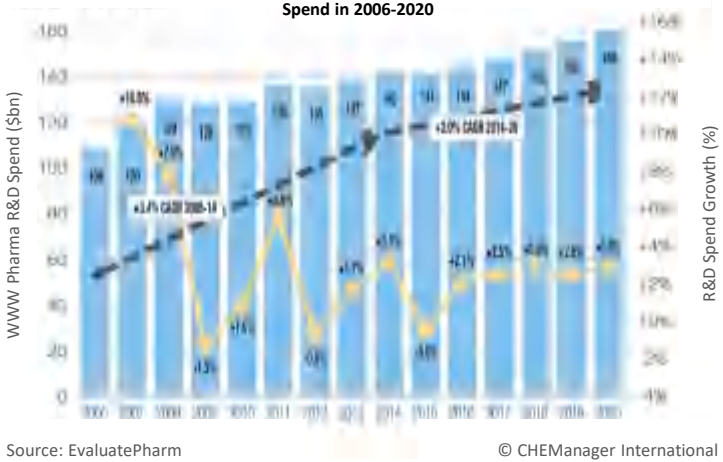
Addressing 2 huge markets

Andaman7 is positioned at the junction of:

Pharma & med devices: transition to value based medicine, patient centricity becomes key
Digital Health: explosive growth, long term needs, meta trend

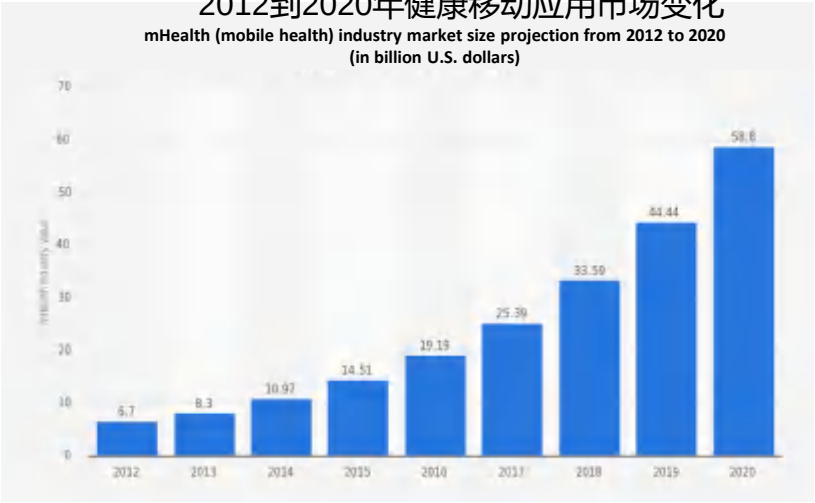
Andaman7的定位处于：
制药和医疗设备：向基于价值的药物过渡，以患者为中心是关键
数字健康：爆炸性增长，长期需求，元趋势

全球制药总研发
Worldwide Total Pharmaceutical R&D
Spend in 2006-2020

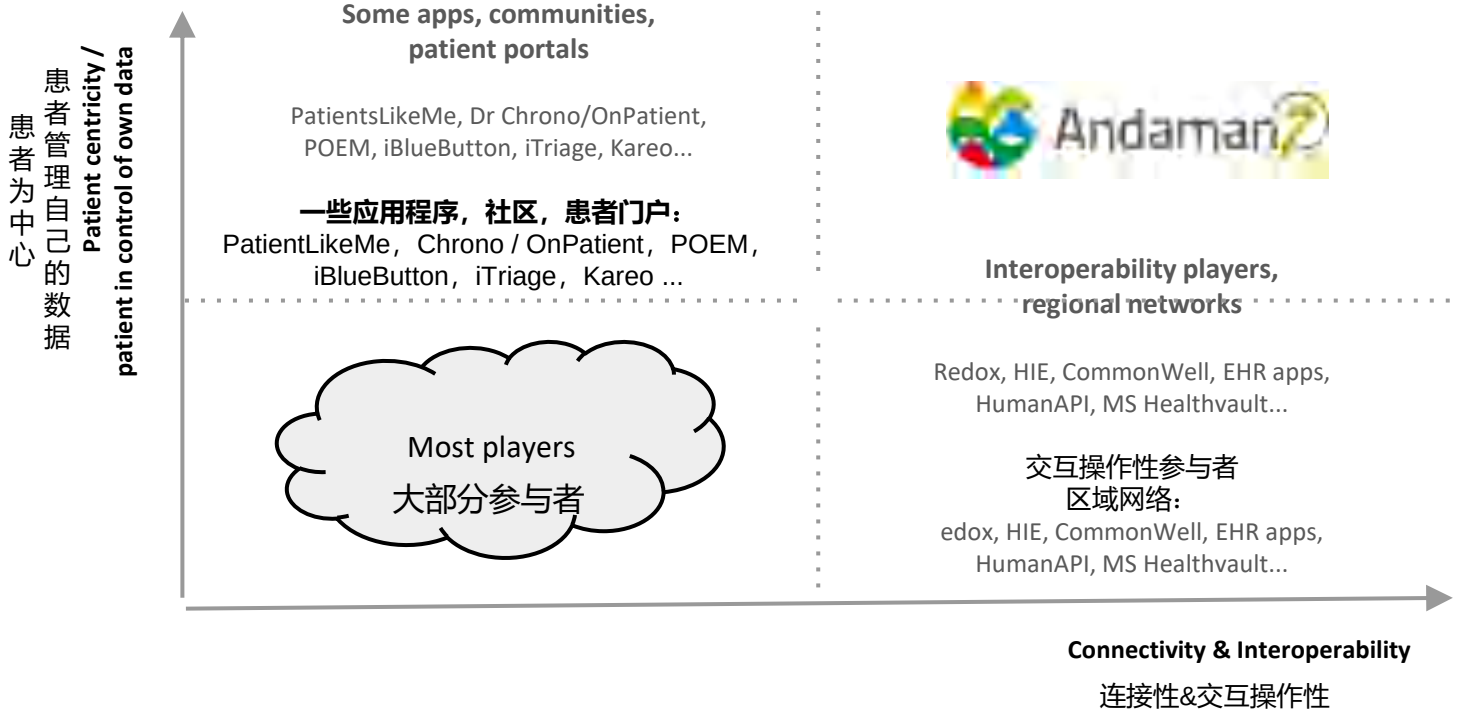


Source: EvaluatePharm

2012到2020年健康移动应用市场变化
mHealth (mobile health) industry market size projection from 2012 to 2020
(in billion U.S. dollars)



Competitive analysis / as a platform　竞争性分析/ 作为一个医学平台



Competitive analysis / as ePRO　竞争性分析/ 作为ePRO

Go Balto - bought recently by Oracle　　Go Balto-近期被Oracle收购

Science37 - Andaman7 has many benefits　　Science37-Andaman7有许多优点

Full PHR + highly interconnected
Patients are ideal data aggregators (Craig Lipset, Pfizer)
Feedback to patients + improve their PHR = less dropouts
+ FDA/EMA alignment
Regulations friendly: patient in control
Advanced data model + deep technical Innovations

完整的PHR +高度互连
患者是理想的数据聚合器（Craig Lipset，Pfizer）
对患者的反馈+改善他们的健康管理系统=减少因病情辍学/不能上班的人+ FDA / EMA的一致性
规章制度友好：对患者的可控性
先进的数据模型+深度技术创新

Apple goes there too 苹果系统支持Adaman7平台

Now Apple is showing the way, and…

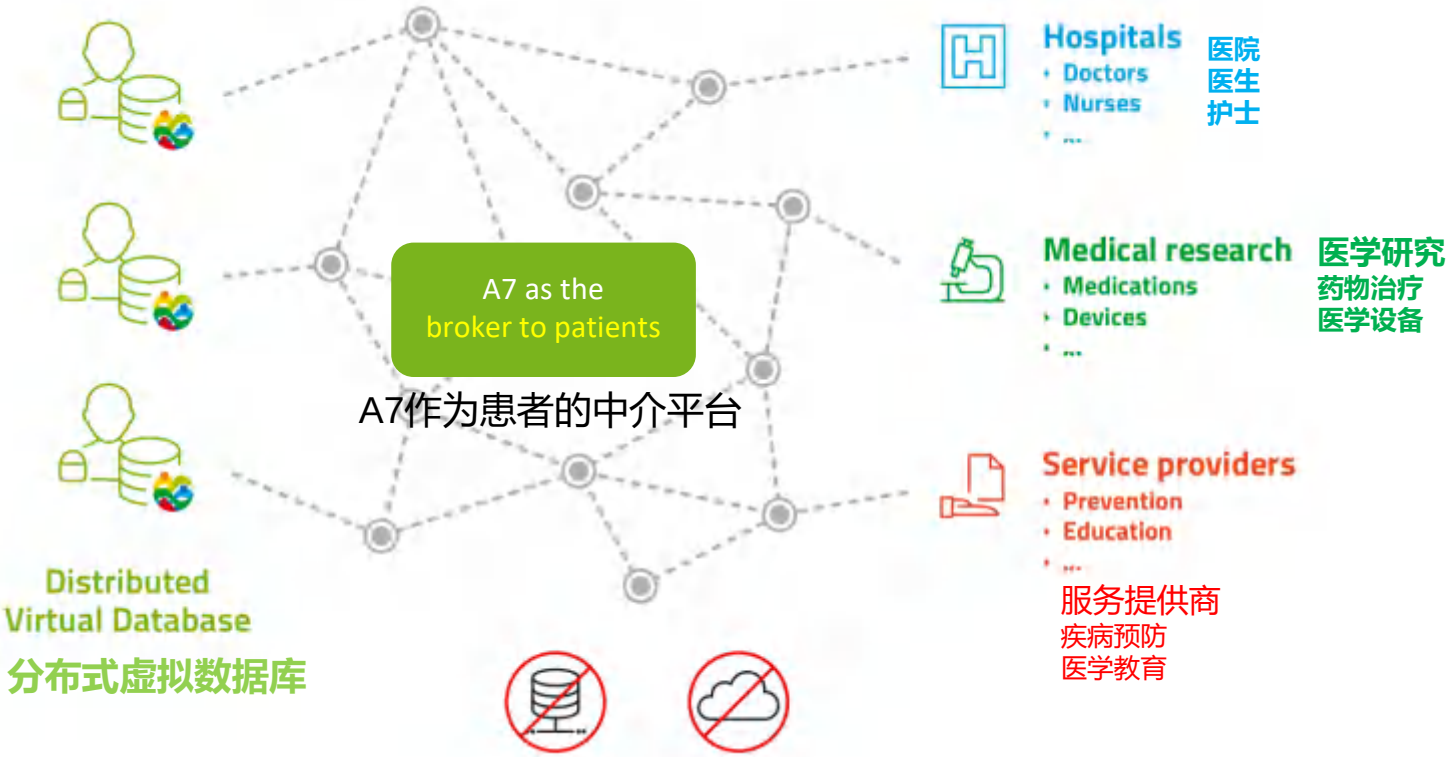
We started 3 years earlier with a bigger team
We also support Android = 90% of market
Powerful Health Intermediation Platform
Service layer for third parties
Many additional features
Technical innovations see white paper
Note on PHR and Google Health, Microsoft Healthvault...

现在苹果系统支持的Adaman7正在发展：

Adaman7三年前组建了一个更大的团队
Adaman7也支持Android系统 = 它占据90％的市场份额
强大的健康中介平台
第三方服务层
许多额外功能
技术创新 详细内容见白皮书
有关 PHR和Google Health， Microsoft Healthvault的说明...

Andaman7 patient centered HIP©

Andaman7是以病人为中心的健康中介平台



Pharma leaders share our vision 制药公司的领军人物分享Andaman7的愿景

The patient is the Hub 《以患者为中心》

CRAIG LIPSET
Head of Clinical Innovation, Pfizer
辉瑞公司临床创新主管

Andaman7
is the connector
Andaman7就是病人与制药公司的连接平台

Patients are ideal data aggregators
患者就是理想的数据集合器

Medical researchers are voracious for data
医学研究人员对数据是极度渴求的

Sample recent acquisitions 近期收购案例

Roche bought mobile app MySugr for $100M

Roche bought Flatiron for $1.9 billion

Oncology-specific EHR platform paired with a suite of software products that employ real-world data from these records to uncover cancer research and insightsAnd many others…

In April I counted 66 digital health investments totaling $2.1 Bn, cf Marc Sluijs newsletter

罗氏以1亿美元收购移动应用MySugr

罗氏以19亿美元收购Flatiron

研究肿瘤特定平台EHR配套相关软件产品，从而利用这些记录中的真实数据来解密癌症研究并提出新见解

许多其他案例 例如…

4月，Andaman7计算了66笔数字医疗投资，总计21亿美元，具体内容请参阅Marc Sluijs时事通讯

All pharma want
“Beyond the pill” and
“Patient-centric solutions”
所有的制药公司都希望做一些超越制药以外的事情并提供以患者为中心的医学解决方案

As a platform, we add value for 作为一个健康监测平台，我们带来了更高的价值

1. Patients: Empowerment
2. **Pharma:** **PRO, RWE, siteless clinical trials**
3. (Later) Care actors: Disease management

1. 为患者: 赋能
2. 为制药企业: **PRO, RWE, 无站点临床试验**
3. 为护理员 病情管理

Andaman7 = Gateway to Patients
in control and owners of their data
Andaman7=控制和管理患者数据的门户

For CROs, Pharma & Med Device looking for research subjects & managing trials
为CROs, 制药公司&医学设备商寻找研究项目&管理临床试验

At the core of a wide **ecosystem** 平台在病情监控生态链中处于核心地位

Patients 患者 ‹› Caregivers护理者 ‹ R&D 研发

Enabling Personalised Medicine
允许个性化的医学安排定制

Serving Health Consumers
服务健康消费者

Intellectual property 知识产权

- All owned IP, software, copyright
- Based on 25 years experience & 30+ man-years dev
- Strong health IT technical innovations:
  - See http://bit.ly/a7TechInno
- Platform play
- White label options
- 平台具有知识产权，相关的软件系统及版权
- 基于25年的领域经验基础 & 30多年的人工平台开发基础
- 强大的健康信息技术创新：具体内容请查询http://bit.ly/a7TechInno
- 游戏化界面设计的平台
- 白标选项操作（可根据其他公司的品牌形象包装成该公司自身的产品）

Risk assessment 风险评估

- Technological : zero, platform is there & scalable
  - Much lower than biotech companies
  - One EDC integration
- Commercial risk : lower than biotech companies (regulator)
- Financial risk : speed is critical so funding also
- Market : much larger than biotech, all patients + healthy[1]
- Competition is fierce and growing
  - There will be needs to acquire startups to speed up
  - There will be consolidations
- 技术风险：0，平台的可扩展性
  - 风险比生物科技公司低很多
  - 一次性EDC集成
- 商业风险：比生物科技公司低 （平台是数据管理者）
- 金融风险：平台的发展速度非常关键，因此资金至关重要
- 市场风险: 比生物科技公司要大很多，因为涉及到病人及其健康状况
- 领域竞争非常激烈且逐步增加
  - 可能未来会有收购初创公司以加速平台发展的需要
  - 可能未来会存在公司兼并

Blockchain plans 供应链计划

- Patient consent for sharing data as smart contracts
- Traceability of data exchange - patient ledger
- Patient identity (combined with our tech innovation)
- CRF[1] chain signing
- Cryptocurrency as rewards to patients for sharing data
- For more info, see this doc
- 患者同意将数据共享作为智能合约
- 数据交换的可追溯性—患者的病况账户
- 患者的身份特性（结合了我们的创新技术进行分析）
- 病例报告表
- 加密货币作为患者分享数据的奖励
- 了解更多的信息请点击 see this doc

Blockchain philosophy 供应链哲学

Andaman7 used blockchain philosophy “avant la lettre”, cf :

- Our decentralised / distributed approach
- Our “no central authority”
- Our strong traceability
- Our high security

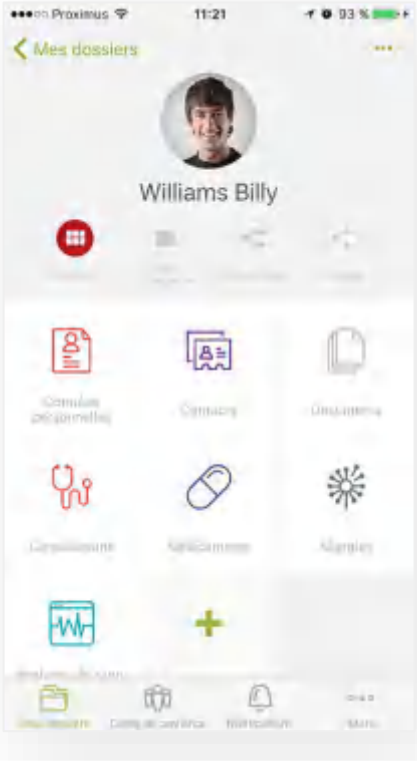
Andaman7 采取的是“avant la lettre”区块链哲学：

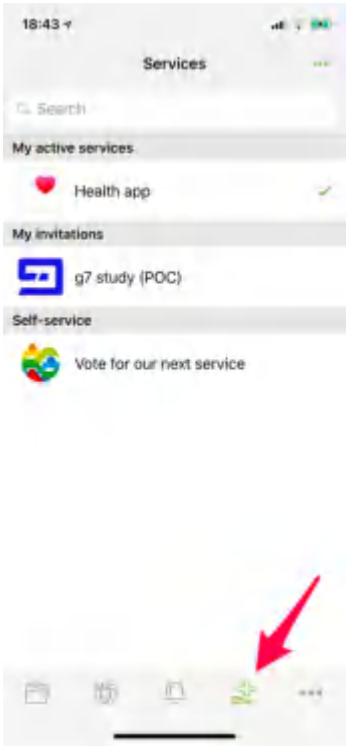
- 我们采取的是分散/分布式方法
- 我们不存在“中央权威”的制度
- 我们强大的可追溯性
- 我们的高安全性

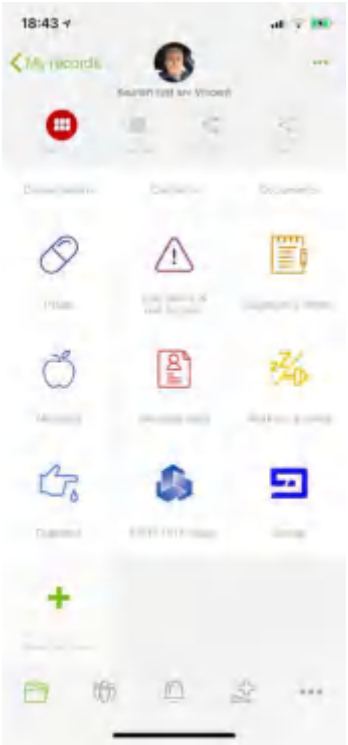
What about AI 平台的人工智能

- Multiple players coming up
- Many focus on one condition, one main use case
- Our plan
  - Offer AI based services in Andaman7
  - Service by third parties
  - Marketplace for services
  - Andaman7 as the data repository and broker
- Server based services offered via our HIP
- 多方可共同参与使用平台
- 多方共同关注一种情况，一种主要案例
- 我们的计划
  - 在Andaman7平台上提供基于人工智能的服务
  - 在平台上提供第三方服务
  - 在平台上提供服务市场
  - Andaman7将作为数据存储库和代理商

Services by third parties 第三方提供的服务







One more thing... 另外一点

Our foundations make us future proof

- Services layer
- Foundations for interop
- Fixing many health IT shortcomings http://bit.ly/a7TechInno
- Scalability of peer-to-peer
- Tools ecosystem: mobile apps + connectors + webapps + HIP (peer-to-peer Health Intermediation Platform)

我们已有的成就会在未来证明我们将成为：

- 服务层
- 交互操作的基础
- 解决许多健康领域信息技术的短板
- 平台点对点的可伸缩性
- 工具生态系统：移动应用+连接器+Web应用程序+HIP（对等健康中介平台）

Engagement Insights + Face Analytics

参与度分析+面部分析

Edge AI | Privacy & Ethics by Design

终端人工智能　应用设计尊重隐私及道德

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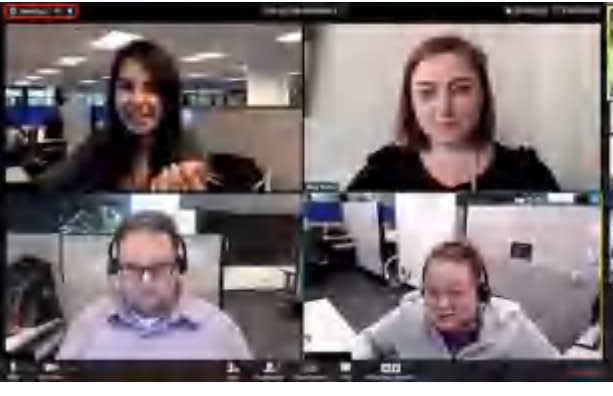
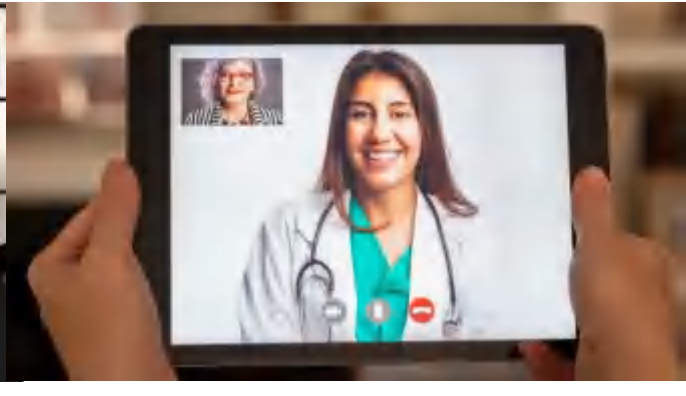
Next Normal 下一代面部识别常态

Work
工作

Learn
学习

Health
健康





Microsoft makes remote work option permanent

Problems: poor insights on video 目前存在的问题：视频缺少面部分析

No Data on engagement in meetings, sales calls, eLearning.
不显示关于会议，销售电话，网络学习参与度的数据

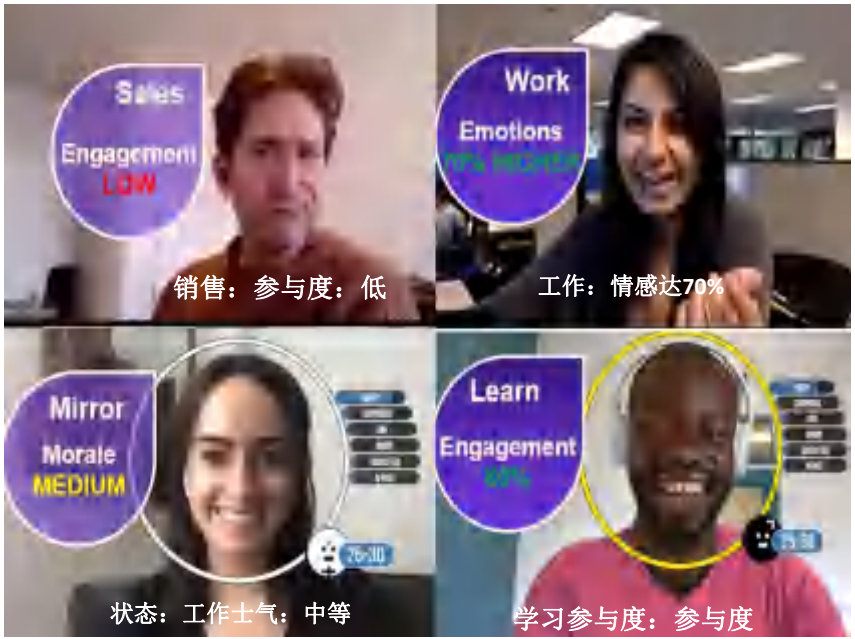
How do I come across?
如何在视频里塑造印象？

Mental health: Stress, depression.
检测心理健康状态：压抑 失望

Solution: Vimotions 解决方案：数据迁移形成图表

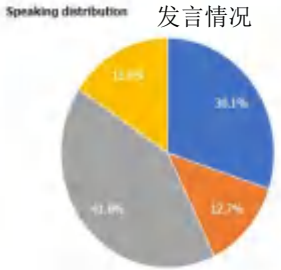
Front End 前端

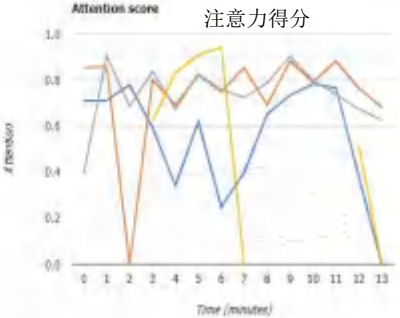
Edge AI: Emotions & Demographics
终端人工智能：情感&特征

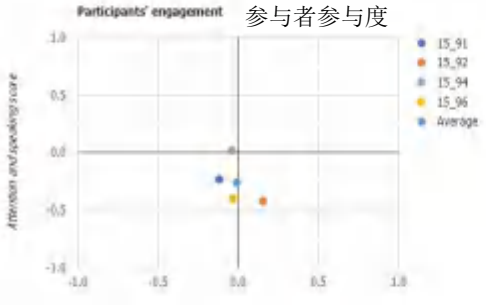


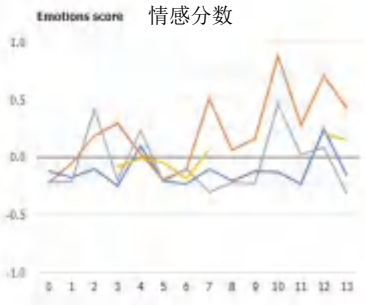
SaaS 软件及服务

Actionable Insights 可行的见解









Markets for Edge AI 终端人工智能的市场

Education

Games

教育类游戏

Work

工作

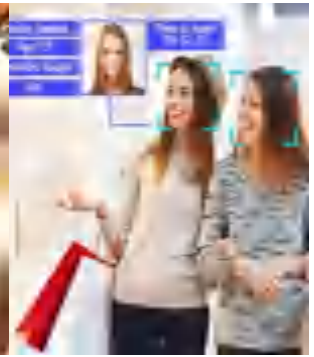
Automotive

汽车驾驶

Retail

eCommerce

零售业 电商



Traction 产品引入

Eric Yuan replied

NDA signed
已签署保密协议

Ongoing conversations
正在商讨合作

Markets: Enterprise **+1% productivity = $55 B/yr (USA).** Education, Gaming, Healthcare.

2021 new wins: US Video Game, UK Agency, US Mobile App

Pilots signed: Georgia State U, Brazos Valley EDC, humanorganizations.com, UMONS

Automotive:

市场：企业提升了1%的生产率= $ 550亿/ 年 (美国); 应用在教育，游戏，医疗保健行业。

2021年取得的新胜利：与US Video Game, UK Agency, US Mobile App达成合作

签署的项目：与佐治亚州立大学，Brazos Valley EDC，humanorganizations.com，UMONS 签署了合作

USP 美国专利

Ethics by Design: proprietary **unbiased** data sets.

应用的设计遵循道德规范：拥有专有的无偏见数据集

Privacy by Design: no faces stored.

设计隐私：不存储面孔

Edge AI+AR: 7 Emotions, Attention, Gender Age Ethnicity, ID.

终端AI+AR：7种情感，注意力，性别，年龄，种族，身份识别

Saving$! $120 K/month (Cloud) <> 0 (MoodMe). 100 K videos, 5.000 employees.

节省费用：$ 120 K /月（云计算）<> 0（MoodMe）

可存储100K的视频，旗下有5,000名员工在运作。

IP: 2 US Patents issued.

知识产权：拥有2项美国专利

MoodMe Customers MoodMe 的客户

70+ Customers
70多位客户

Awards
所获奖项

Trophée des Apps Ad Tech, Houston Dynamo BBVA Launchpad Cosmetic Victories, Qatar Sports Tech, French Tech ticket EBAN, Trends, TheNextWeb, SV ChinaTrophéedes Apps

Trophéedes Apps广告技术2019（巴黎），休斯顿迪纳摩BBVA Launchpad 2019，卡塔尔体育技术，EBAN法国科技票选，2016年趋势/（比利时）TheNextWeb（阿姆斯特丹），归谷中国无线

Solution: AR with EQ　解决方案：能够面部识别的AR

FIFA Women's World Cup

Nina Ricci Qatar

Airways

Cointreau

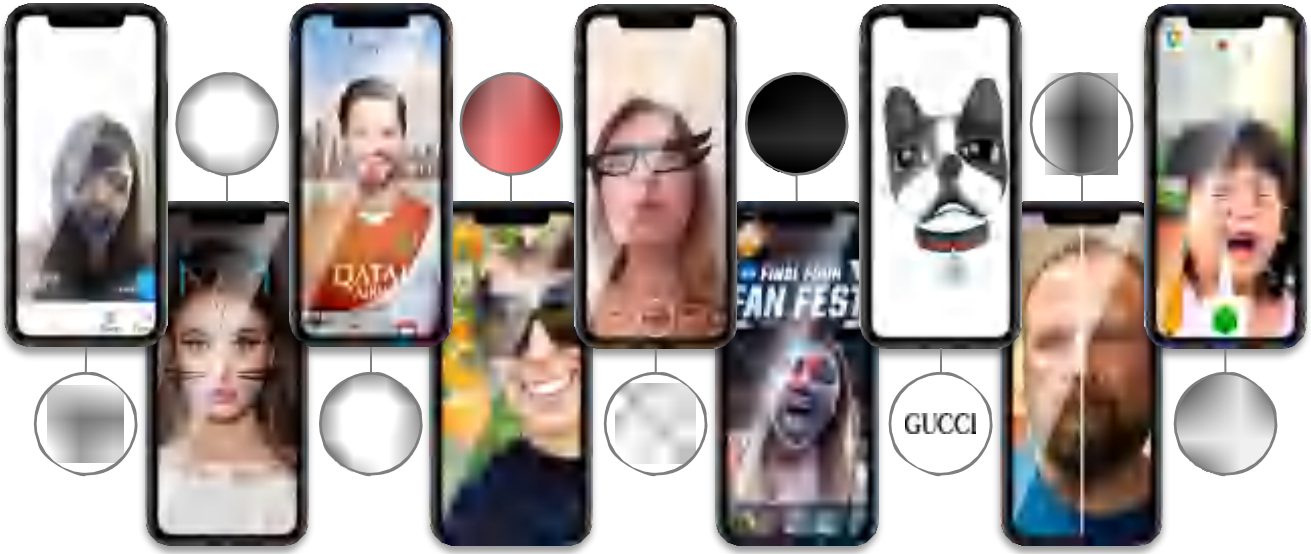
Gucci eyewear virtual try on

ATT Final Four

Gucci Chinese New Year of the Dog

Stanford ageing for empathy research

Glaxo Flonase anti allergies



应用：

FIFA 女足世界杯面部识别表情包

卡塔尔航空 虚拟沉浸式场景

Gucci 眼镜虚拟试穿

ATT决赛四强虚拟场景

Gucci 中国狗年虚拟图像

斯坦福大学衰老研究面部识别衰老后的人

Glaxo 丙酸氟替卡松功能体验

Team 团队

First mobile face recognition (2011) 首次应用移动人脸识别 （2011）

CEO: MM$ Sales @ Software AG, Northrop, TRW. Startups in USA.
CTO: University Professor AI, serial entrepreneur.
首席技术官：人工智能大学教授，连年获得优秀企业家

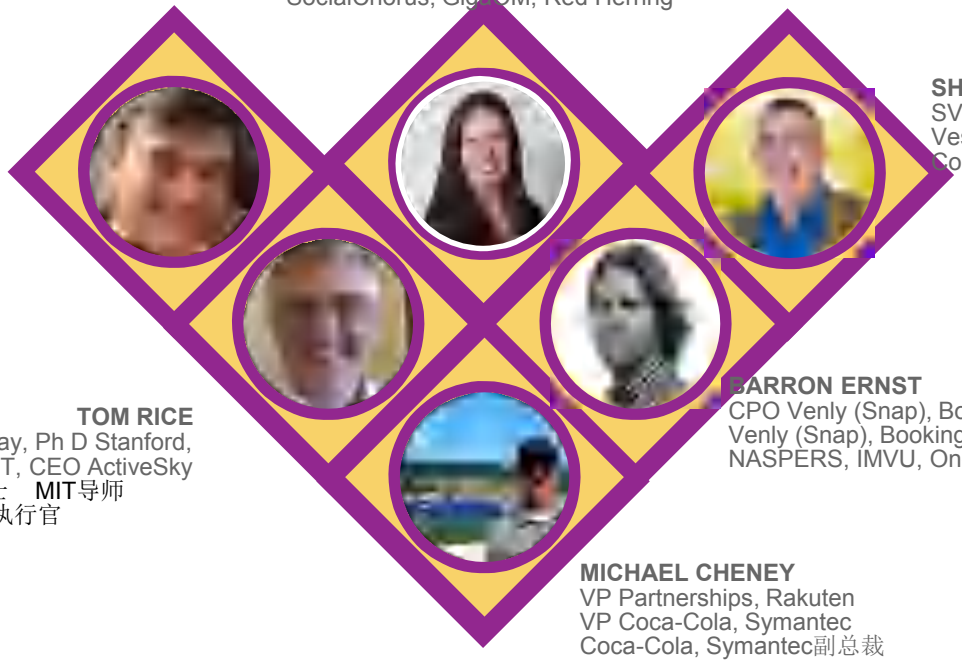
TEXAS A&M UNIVERSITY
UMONS

Advisors 顾问

ALISON MURDOCK
CEO, TrustedCMO
SocialChorus, GigaOM, Red Herring
艾丽森·默多克
（ALISON MURDOCK）
TrustedCMO首席执行官
SocialChorus, GigaOM, Red Herring

SHACHAR TOREM
SVP Vestcom, VP Coupon.com,
Vestcom, VPC Coupon.com高级副总裁
Coca-Cola, General Mills

SHERGUL ARSHAD
CCO StatsBomb
StatsBomb首席客户官
AS Roma, DraftKings, Amazon



BARRON ERNST
CPO Venly (Snap), Booking.com
Venly (Snap), Booking.com首席产品官
NASPERS, IMVU, One Kings Lane, Intuit

TOM RICE
EIR Plug & Play, Ph D Stanford,
SRI, Mentor MIT, CEO ActiveSky
斯坦福大学博士　MIT导师
Activesky首席执行官

MICHAEL CHENEY
VP Partnerships, Rakuten
VP Coca-Cola, Symantec
Coca-Cola, Symantec副总裁

Finance 金融状况

Raised: $900K + $1M (R&D non-dilutive grant)

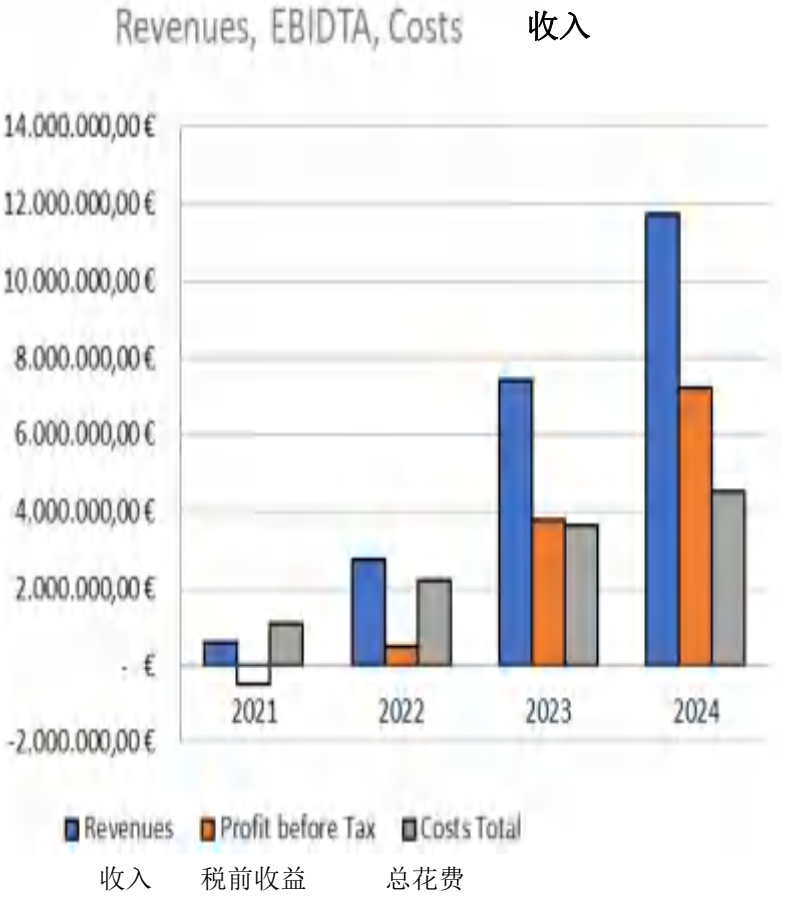
Raising $1M: Product & Marketing (15% in)
Series A: 2022

Exit: Video / AD Tech giant

Business Model: SaaS

募集资金：90万美元+ 100万美元（研发非稀释性拨款）
募集资金：100万美元：用于产品和营销（其中的15%）
第一轮：2022年

海外发展：视频/广告技术巨匠
商业模式：软件即服务



Vision: « *Flurry for emotional engagement* »
愿景：《识别面部情绪参与度波动》

Go to market
进入市场

Our App
我们的应用

ingredient brand in video platforms
在视频平台中的要素品牌

SaaS
软件服务

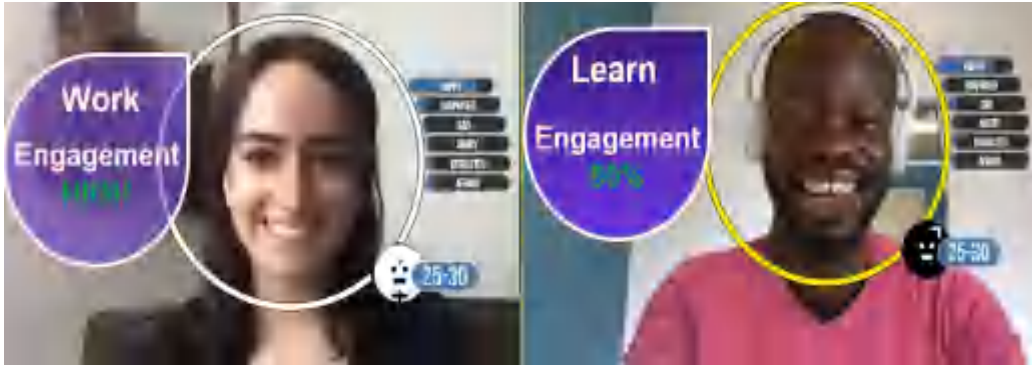
EQ data
智能分析数据

Thank you! 感谢观看！

SaaS: EQ data lake
软件服务：智能数据库

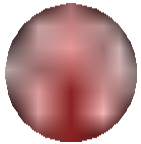
Edge AI: Privacy
终端人工智能：保护隐私

AR with EQ: Experiential
智能AR：体验式



工作：参与度：高　　学习：参与度：80%

Let's talk!



Chandra De Keyser
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chandra@mood-me.com

Backup Slides
备份幻灯片

EQ in AR Experiences

AR体验中的智能分析

Personalization: emotions, gender, age, ethnicity

Face AI: Data gathering with Privacy

Edge: respect Privacy & Wallets

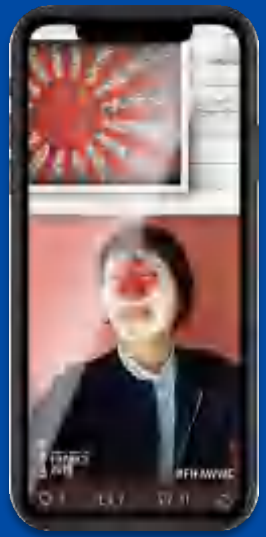
2 US Patents

个性化识别：情绪，性别，年龄，种族

面部人工智能：使用Privacy Edge收集数据：
尊重隐私和个人财产

2项美国专利

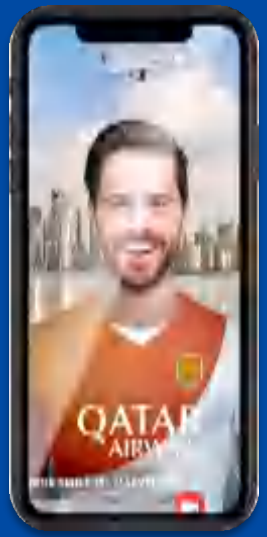
Customer Engagement
客户参与度



Happy 60%
Female
27 Years

女 27岁 开心度：60%

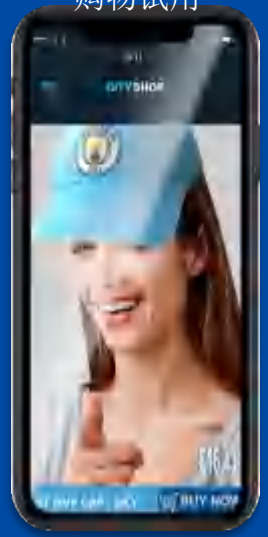
Brand Marketing
品牌营销



Happy 86%
Male
32 Years

男，32岁，开心度：86%

Contactless shopping virtual try on
非接触式虚拟购物试用



Happy 73%
Female
22 Years

女，22岁，开心度：73%

Diversity: Gender Race Engagement Gap
多样性：性别种族参与度差距

Shari Slate

Vice President, Chief Inclusion & Collaboration Officer

If you can't measure it,

you can't improve it

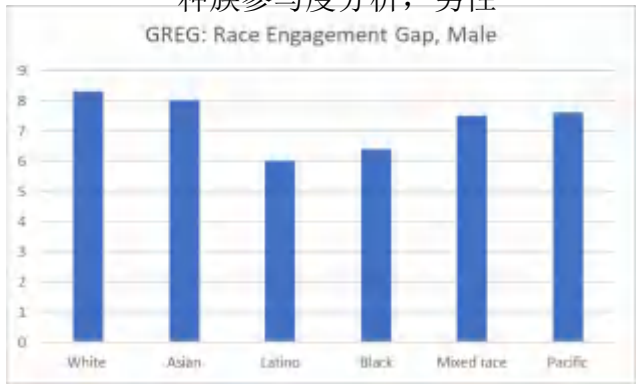
~ Peter Drucker

如果我们无法对一样东西进行评估，
那我们就无法知道如何改进它。

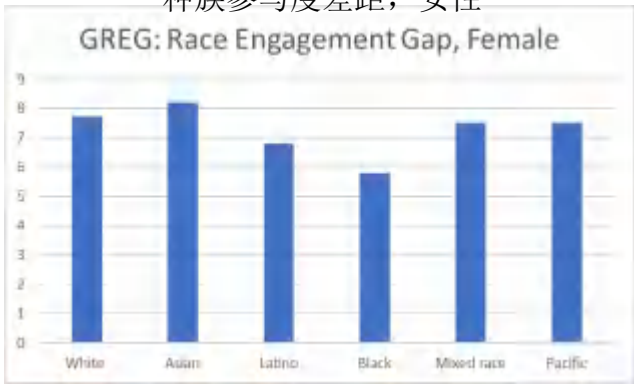
性别参与度差距

性别参与度差距 （6周）

种族参与度分析，男性

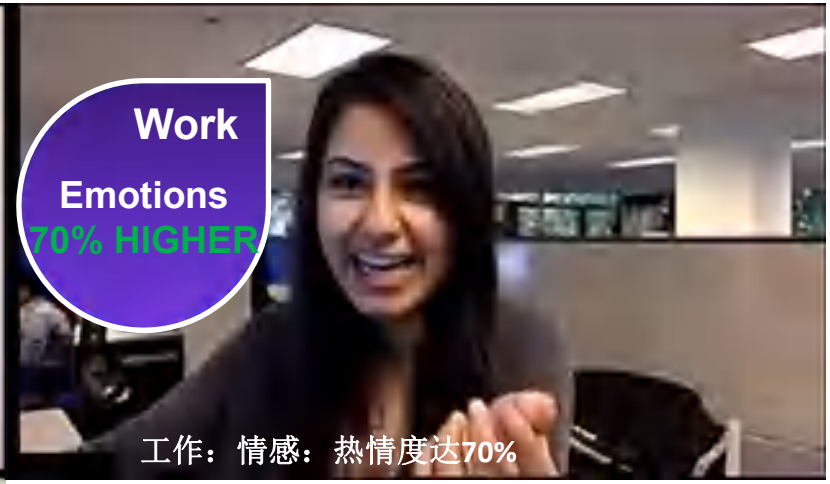


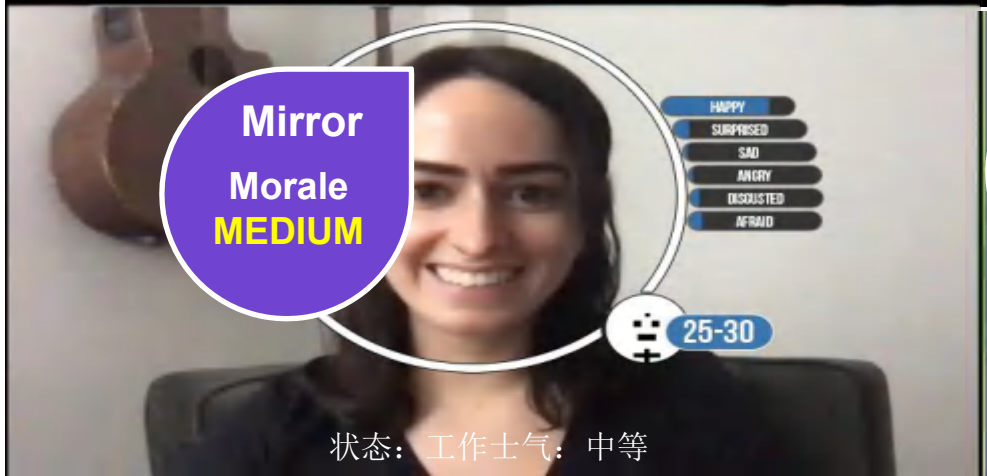
种族参与度差距，女性



Data are fictitious, for illustration only

What if Video had EQ? 如果视频能分析人的状态？





Optical Systems 光学系统

Creator 创造者
Developer 开发者
Manufacturer 制造商

Ophthalmic Metrology for contact Lenses and Intraocular Lenses
隐形眼镜和人工晶状体的眼科计量学仪器

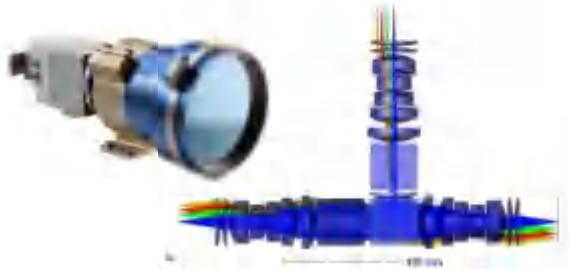
OWIN- Virtual Mission China - March 2021

LAMBDA-X OPHTHALMICS

Avenue Robert Schuman 102, 1401 Nivelles – Belgium
罗伯特·舒曼大街102，1401　尼维尔-比利时
Tel: +32 67 79 40 80 – Fax: +32 67 55 27 91
info@lambda-x.com – www.lambda-x.com

Lambda-X in a nutshell　Lambda-X简介

Project development 项目发展



Conception & design of
Custom Optical Solution for SPACE INDUSTRY
(Biomed – Security – general Ind.)
定制光学解决方案的概念&设计
太空
工业
（生物医学—安全性—一般工业）

Supplier of engineering & consulting services
- ➢ Optical design
- ➢ Opto-mechanics
- ➢ Opto-electronics
- ➢ Software
- ➢ Algorithmics

Prototyping – Validation – Manufacturing
工程和咨询服务供应商
- ➢ 光学设计
- ➢ 光力学
- ➢ 光电子学
- ➢ 软件
- ➢ 算法

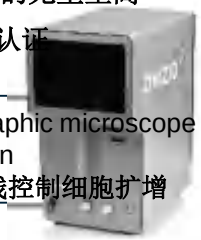
原型制作—原型验证—产品制造

Contract Manufacturing 合同起草

Optical based products

Facility: 1000m² of Clean Rooms High precision tooling & metrology Design services, certification

光学产品：设施：1000平方米的无尘室高精度工具和计量学设计服务，认证



Cell-therapy Digitial holographic microscope
Inline control of cell expansion
细胞疗法数字全息显微镜在线控制细胞扩增

MIR spectroscopic sensor
in-line monitoring of fluid composition (Eng & Mfg)
MIR光谱传感器在线监测流体成分（Eng＆Mfg）

Cell-therapy
Cell Transfection & imaging platform (Eng & Mfg
细胞疗法
细胞转染&成像平台（Eng＆Mfg）

Ophthalmic Metrology 眼科计量学

World leader in ophthalmic Metrology
Comprehensive range of instruments for the control of ophthalmic lenses
- ➢ Contact Lenses
- ➢ Spectacles
- ➢ Intraocular lenses

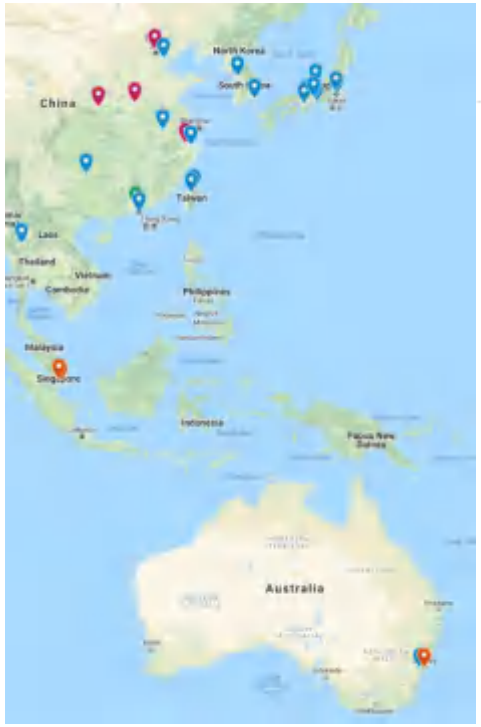
眼科计量的世界领导者
全面的眼科镜片控制仪器
- ➢ 隐形眼镜
- ➢ 框架眼镜
- ➢ 人工晶状体

information 其他信息

Founded 1996
pure Space Applications Spin Off
ULB (Brussels) Team of 45　成立于1996年，是比利时布鲁塞尔自由大学太空应用的衍生团队（45人）

EN 9100
BUREAU VERITAS
Certification

Ophthalmic products worldwide 全球的眼科产品分布



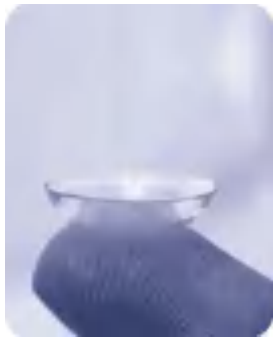
Europe
(UK, DE, FR, NL, BE, CH, SP …)

- USA 美国
- Canada 加拿大
- Brazil 巴西
- Central America 中美洲
- Australia 澳大利亚
- Japan 日本
- Taiwan台湾
- China 中国
- Singapore 新加坡

- South Korea 韩国
- Indonesia 印度尼西亚
- Malaysia 马来西亚
- Thailand 泰国
- Israel 以色列

Ophthalmic metrology 眼科计量

Coming Soon...



Contact lenses
隐形眼镜

Refractive intraocular lenses
屈光人工晶状体

Diffractive & refractive intraocular lenses
衍射&折射人工晶状体

NIMO^{EVO} – Wavefront Sensor for Contact Lenses 隐形眼镜的波前传感器

CLE-MENTOR

ADVANCED DATA INTEGRITY
DATABASE -
USER MANAGEMENT -

先进的数据集成–
数据库–
用户管理–

POWERFUL API
CUSTOM INTEGRATION -
AUTOMATION -

强大的API
定制整合–
自动化–

UNRIVALLED R&R

卓越的双性分析

直观的图形用户界面

INTUITIVE GUI

FDA 21 CFR PART 11 COMPATIBLE

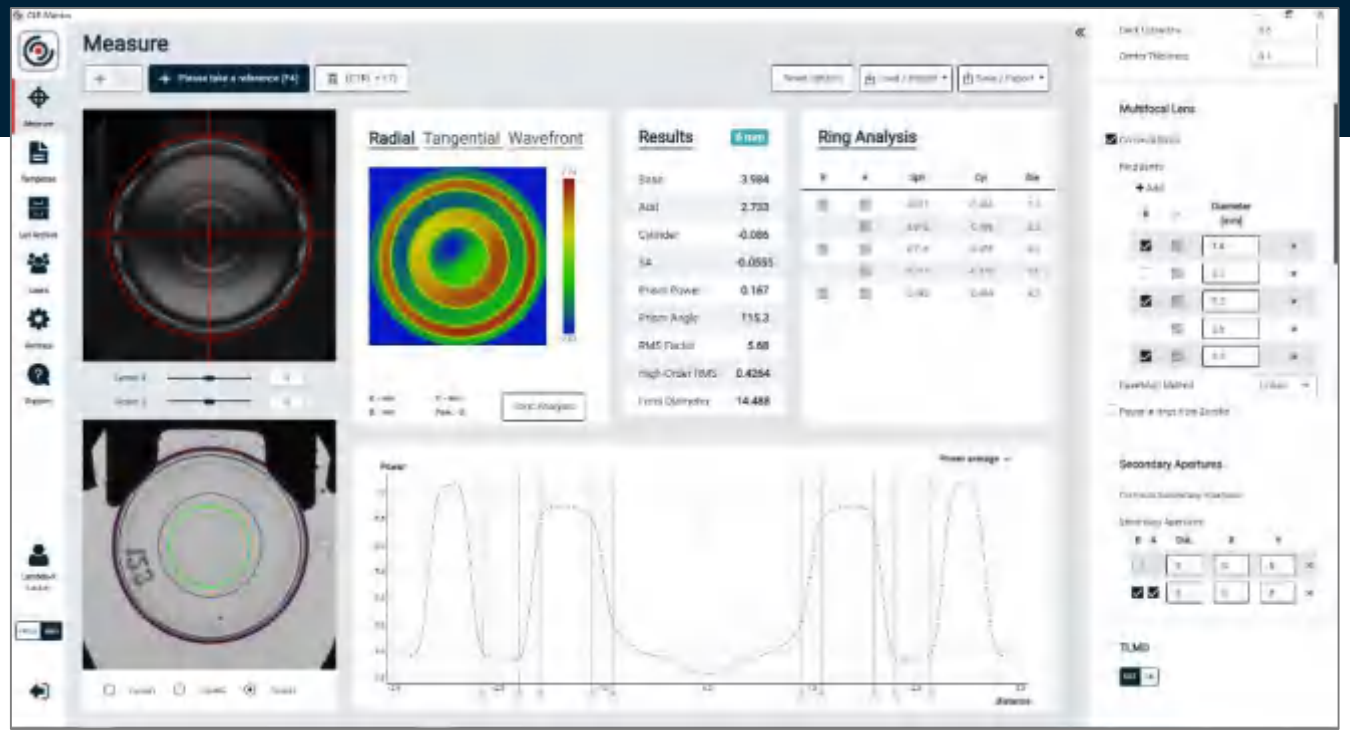
符合美国FDA 21 CFR OART 11规定

VERY FAST MEASUREMENTS (~ 1SECOND)

测量极其快速 （~1秒）

CLE-MENTOR

- **Highest Resolution** on the Market
- Measures any types of **Rigid & Soft** lenses
  - Multifocal, Toric, Decentered, Segmented…
- R&D and Production **SW modes**
- Advanced **data integrity** (Database integrated)
- 市场最高分辨率
- 测量任何类型的硬性&软性镜片
  多焦点 环面 偏轴 分段
- 研发和生产软件模式
- 先进的数据完整（集成数据库）



- **API** allowing unlimited remote control & Automation
- API允许不受限的远程控制和自动化

WORKS WITH FocalPoints

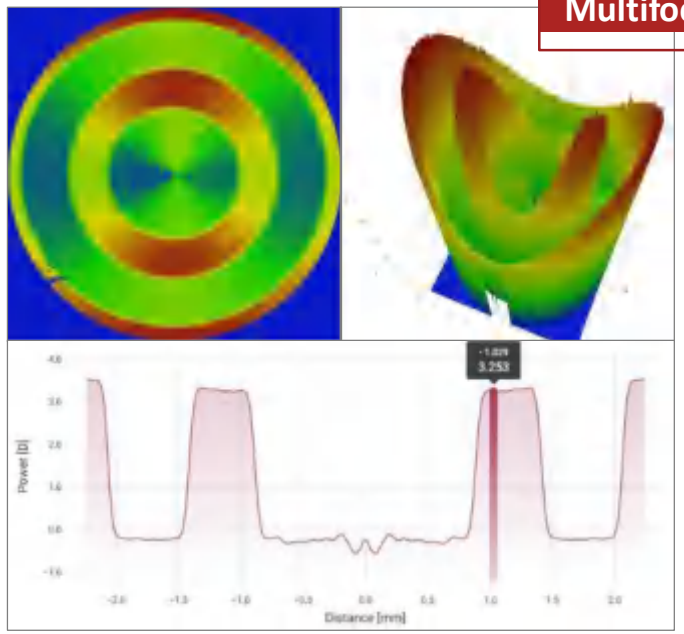
与FocalPonits合作

NIMO TR0815 – Wavefront Sensor for IOLs 人工晶状体的波前传感器

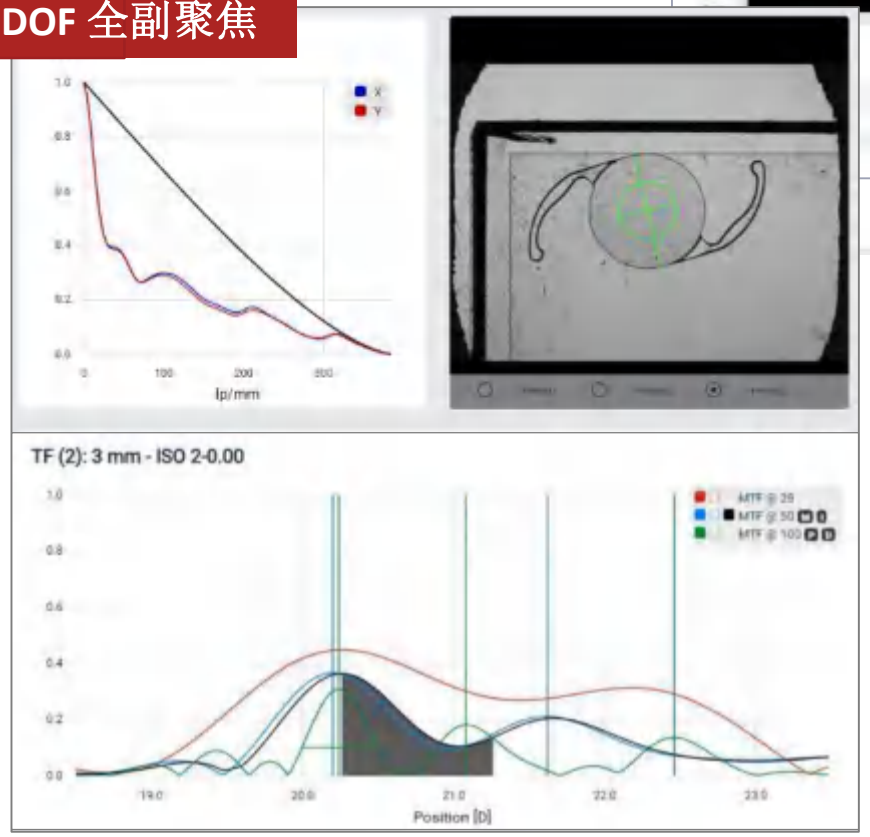
NIMO – Dedicated versions ——from R&D to Volume Production
NIMO –专用版本-从研发到批量生产

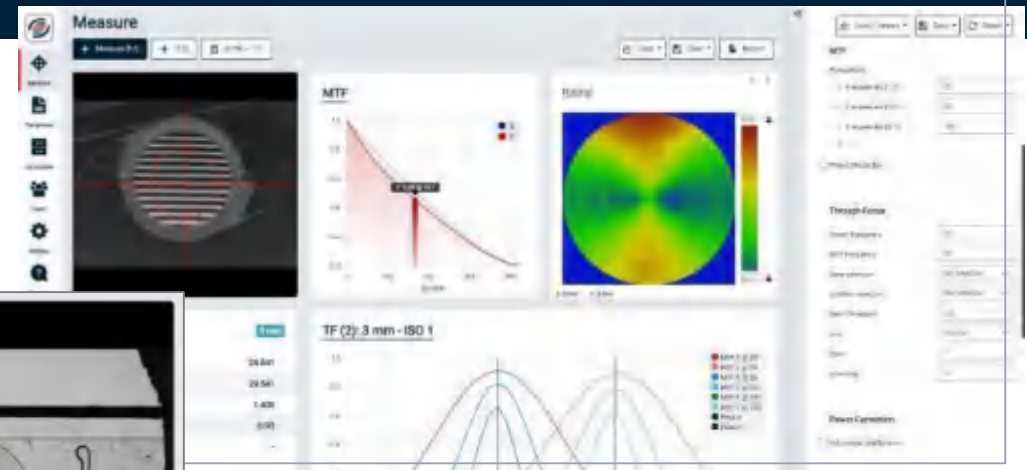
IOL-MENTOR – R&D人工晶状体—指导—研发

Multifocal Toric 多焦点复曲面

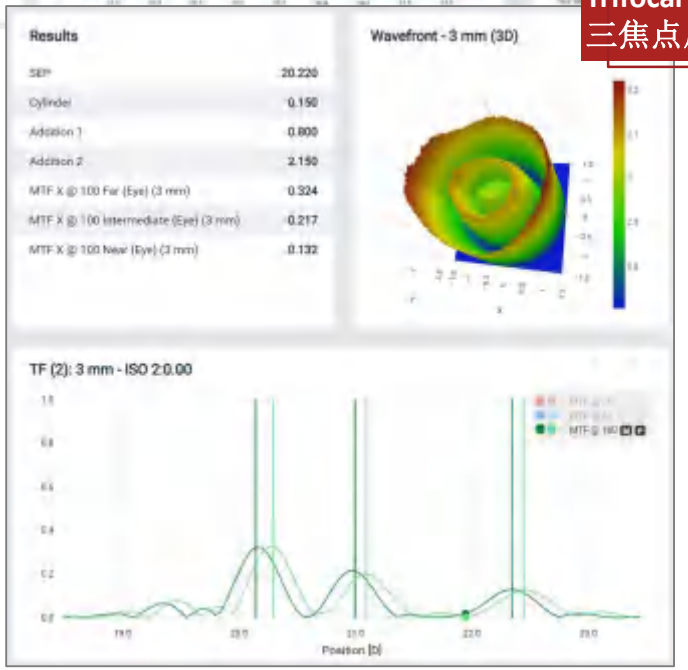


EDOF 全副聚焦



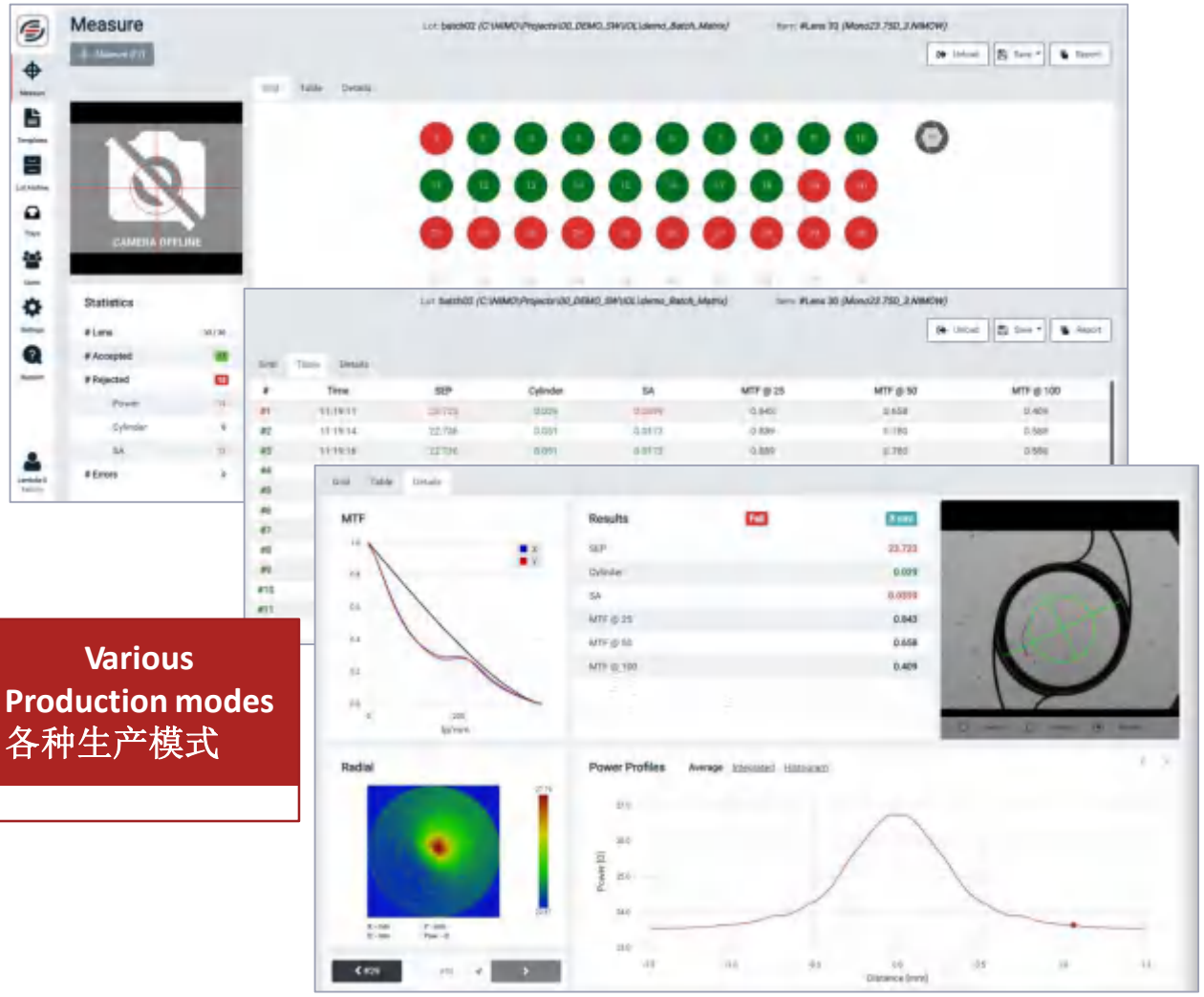


Trifocal refrac 三焦点屈光



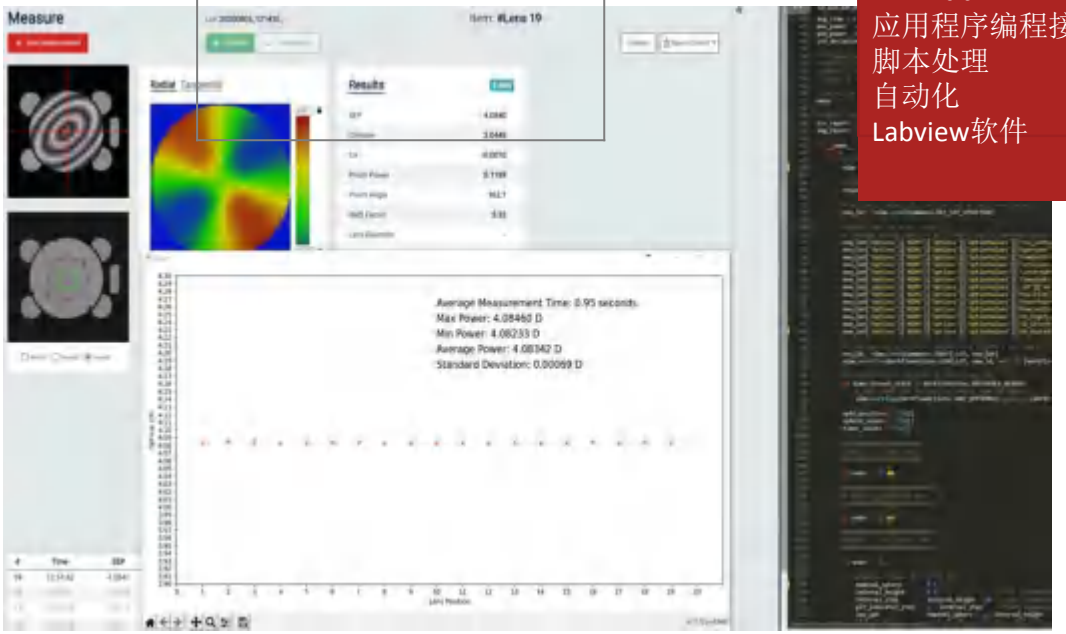
- Zernike & Non-Zernike Wavefront
- Depth of Focus
- MTF integration
- Multifocal
- 2 Additions
- Zernike&Non-Zernike 波阵面
- 焦点深度
- MTF整合
- 多焦点
- 2个增加面

IOL-MENTOR– Production & Custom integration 人工晶状体—指导—生产&定制集成



Various Production modes
各种生产模式

OEM integration
OEM集成



API
- **Scripting**
- **Automation**
- **LabVIEW**

应用程序编程接口：
脚本处理
自动化
Labview软件

Thank you for your attention ! 感谢观看 !

LAMBDA-X

MASTERS IN INNOVATION

创新巨匠

Laurent MALFAIRE

Commercial Director - Ophthalmics

lmalfaire@lambda-x.com

+32 476 220 110

Mission Virtuelle Chine

Radiomics计划进入中国市场

23/03/2021

Fabrizia Candido
Carlos C. Meca

Radiomics, who are we and what do we do? 公司简介及公司业务

Radiomics is a next generation Liege-based imaging CRO built upon the unparallel experience of its founders, **pioneers of the radiomics science.** *Radiomics*（影像组学）是位于比利时列日的下一代CRO（阴极射线示波器）成像公司；*Radiomics*的创始人是放射学科学的开创者，在放射学科学领域有着不可比拟的经验。

Organ and lesion auto segmentation
器官和病变自动分割

Through our proprietary advanced image analysis technology, we aim to unravel the gold mine of **hidden data information** embedded in **standard medical images.**
利用我们专有的高级图像分析技术，我们旨在解开标准医学图像中隐藏的数据信息金矿。

Radiomics

Our final goal is optimizing pharmaceutical and biotech companies' **clinical trials** and **drug development studies** and providing clinicians with a **patient-centered approach** based on personalized medicine.
我们的最终目标是优化制药和生物科技公司的临床实验和药物开发研究，并为临床医生提供基于个性化药物的以患者为中心的治疗方法。

Deep Learning

Radiomics' R&D team is continuously working on new solutions, in collaboration with multiple **national and international partners.**
Radiomics 的研发团队一直在与众多不同的国内和国际伙伴合作，以不断开发新的解决方案。

Federated Learning

Services and solutions我们的服务及解决方案

Supporting **insight-based decision making** with new and more **sensitive endpoints.**
利用更加敏感或新的端点支持基于洞察力的决策

- Central Imaging Lab
  中央影像实验室
- Auto segmentation tool
  自动分割工具
- Responders stratification
  反应物分层
- Mono and comb. therapy evaluation
  单一 梳状的 治疗评估
- Companion diagnostic tool
  伴随诊断工具
- Link radiomics with biology
  将radiomics与生物学联系起来
- Pre-screening tool预处理工具
- Efficacy and safety measurements
  功效性和安全性测量

Oncology肿瘤学

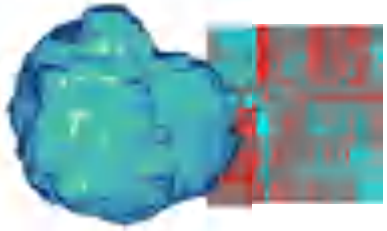
Respiratory呼吸科

Other areas其他领域

Our workflow 我们的工作流

Clinical images
临床图像

Segment ROI & extract features
分割ROI & 特征提取

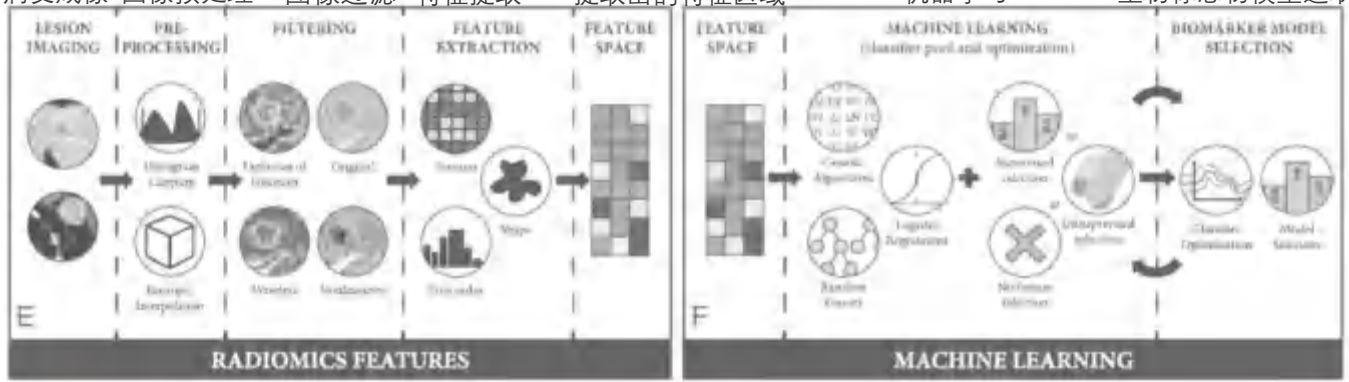


AI modelling and link to biology
AI 建模并扩展到生物学领域进行研究

Abnormality characterzation异常性表征

In few minutes 几分钟之内即可显示	3D/4D 3D/4D模型表征
Non-invasive 无创性	Scalable可扩展性

病变成像 图像预处理 图像过滤 特征提取 提取出的特征区域 机器学习 生物标志物模型选取



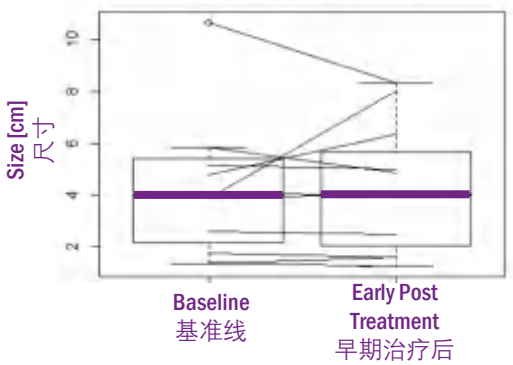
RADIOMICS特征提取

机器学习

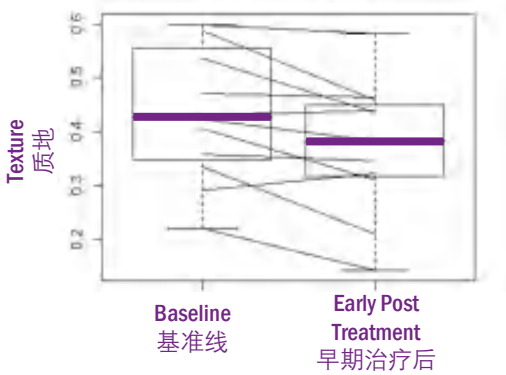
radiomics
INSIGHT-BASED DECISION MAKING

Support in decision-making 决策支持

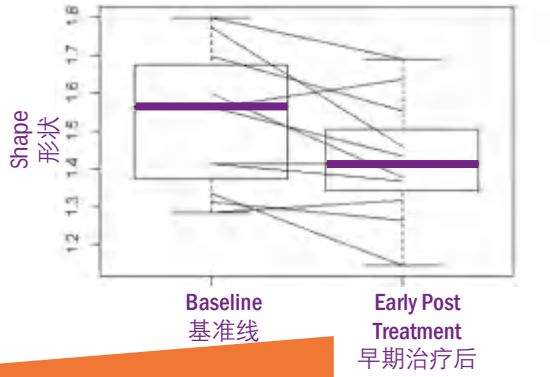
iRECIST
Major axis Length
主轴长度



Radiomics®
Heterogeneity
异质性



Radiomics®
Spikiness



Example case
n = 11 samples
案例案例
n = 11个样本

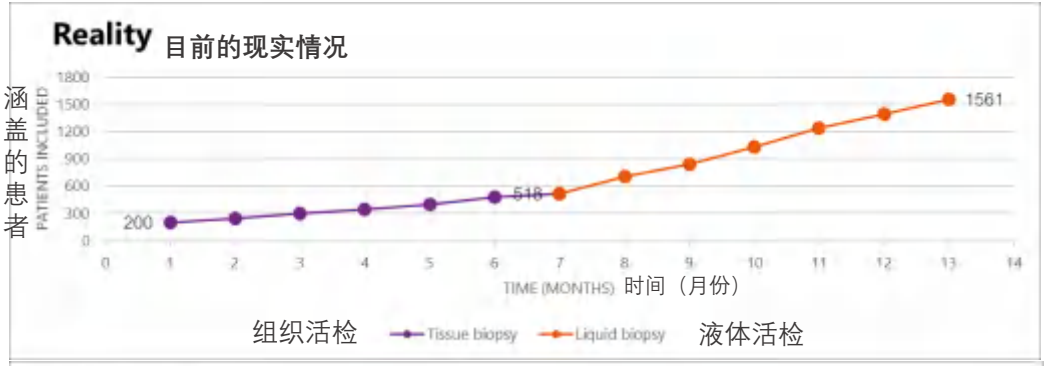
Where the effect of treatment is not apparent using iRECIST, a Radiomics analysis demonstrates otherwise.

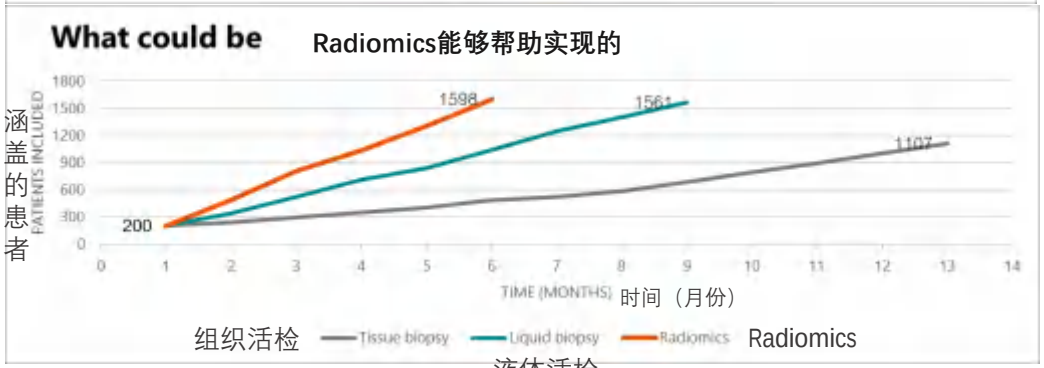
- **Support your decision making**
- **Strengthen your market position**
- **Reduce failures in late-stage clinical trials**
- **Save money and time**

在使用iRECIST治疗效果不明显的地方，Radiomics的分析结果表明治疗效果本应更加明显。那Radiomics将帮助：支持客户的决策；巩固客户的市场地位；减少后期临床试验中的失败；节省金钱和时间

radiomics
INSIGHT-BASED DECISION MAKING

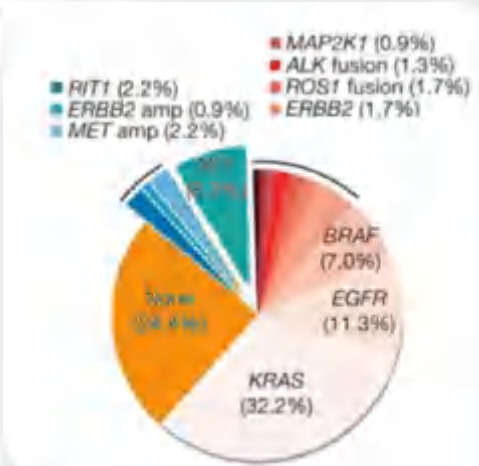
Routine images to select your patients 筛查患者的常规图像





Example case of how Radiomics® can accelerate recruitment of patients with a specific gene mutation

案例：Radiomics® 能够加速具有特殊基因突变病人的检测速度



Non invasive
Faster
Repeatable
Cost-effective
Detection of specific gene mutation
3D/4D capture of the whole tumour
Easy to scale u

无创性
更快的速度
可重复性
成本效益高
检测特定的基因突变
整个肿瘤的3D/4D图像捕获
易于扩展

radiomics
INSIGHT-BASED DECISION MAKING

* Simple illustration of how the patient screening can be accelerated

Why *Radiomics*? *为什么选择Radiomics?*

Publications
出版物

Numerous radiomics publications in high impact journals such as Nature Review and Clinical Oncology.
我们在影响力高的期刊（如《自然评论》，《临床肿瘤学》）等刊登了大量的放射学文章

Experience
领域经验

Our scientists are the first to coin the term radiomics and have unparalleled experience in the field of radiomics analysis.
我们的科学家首先创造了“放射线学”一词，并且他们在放射线学分析领域拥有不可比拟的经验

Achievements
成就

Optimization of our clients’ work through innovative solutions such as COVIA and our radiomics signatures.
通过创新的解决方案（例如COVIA和我们的放射性标记）来优化客户的工作

IP Portfolio
知识产权组合

Comprehensive portfolio with both granted and pending international (EU/US) patents.
拥有已获和正在申请的国际（EU / US）专利的全面产品组合

People
团队成员

We have a very multicultural team with specialties in a broad range of domains.
我们拥有一支多元文化的团队，在各个领域都有所专长

Carlos C. Meca
Chief Commercial Officer
首席商务官
carlos.meca@radiomics.bio

Fabrizia Candido
China Account Manager
中国客户经理
Fabrizia.candido@radiomics.bio

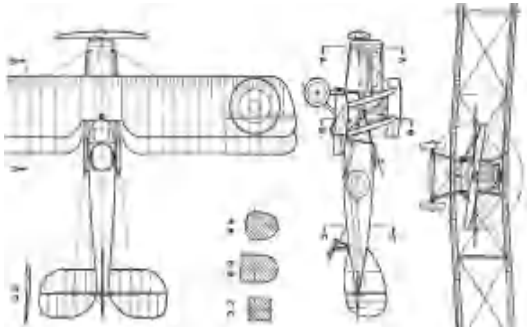
Please find more information on
更多信息请查询
www.radiomics.bio

为非线性振动系统提供软件和解决方案

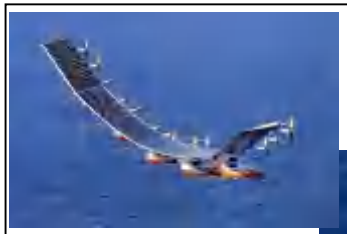
Aircraft Structural Design Does Not Require Simulation
飞机结构设计不需要仿真

Bristol F2

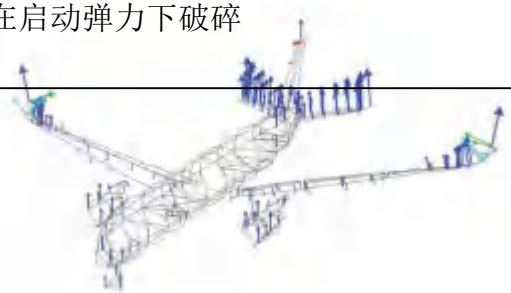
AIRBUS A350XWB
[Govers et al., ISMA 2014]



Finite element modeling for design用于设计的有限元分析

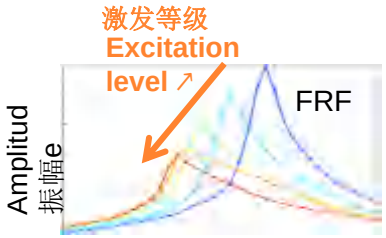


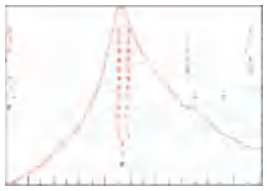
NASA Helios shattering under aeroelastic forces
.美国宇航局的Helios在启动弹力下破碎

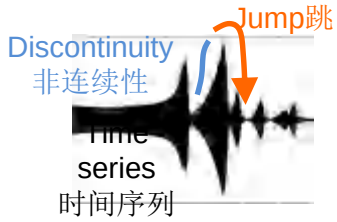


Experimental modal analysis for certification用于认证的实验模态分析

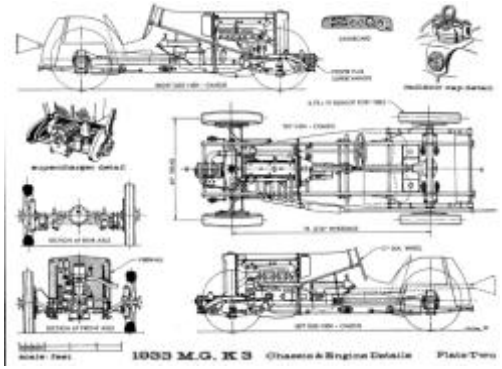
As design requirements increase nonlinearity appears随着设计要求增加非线性出现

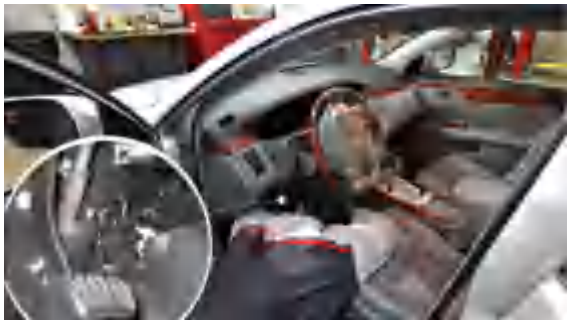






Automotive NVH Does Not Require Simulation
汽车NVH不需要仿真





“In extreme cases, the accelerator pedal became stuck in a position even after the driver removed his foot.
The engineers hadn’t properly modeled the friction.”在极端情况下，即使驾驶员移开脚踏板，油门踏板也会卡在某个位置。 工程师们没有对摩擦进行正确的建模。
A total of 7.5 million vehicles were recalled which resulted in a loss of about $4.4 billion for the company.总共召回750万辆汽车，造成公司损失约44亿美元。

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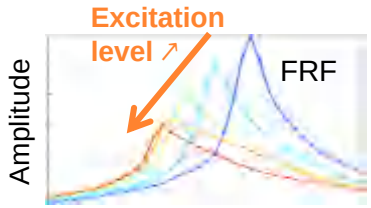
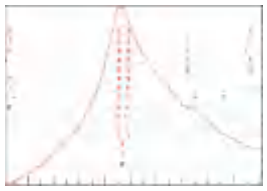
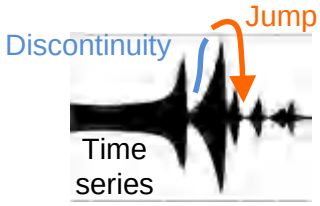
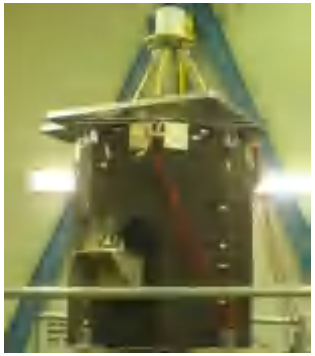
As design requirements increase nonlinearity appears随着设计要求增加非线性出现

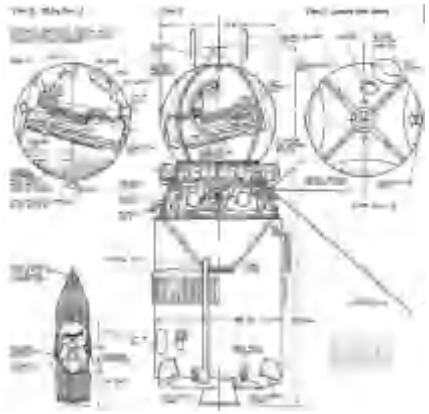


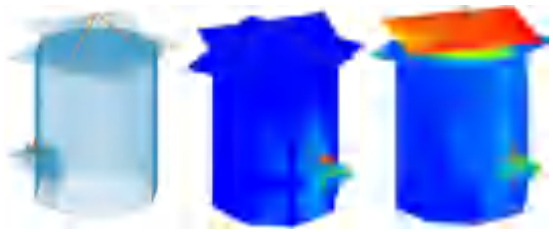


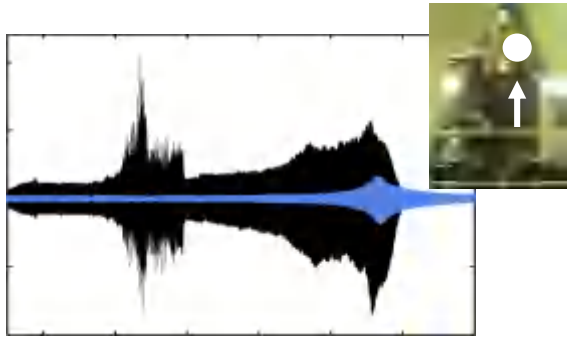


Satellite Structural Design Does Not Require Simulation
卫星结构设计不需要仿真



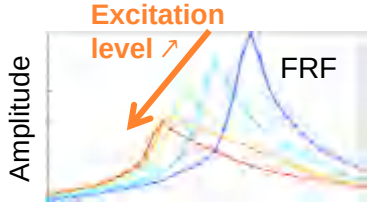


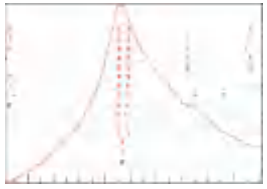


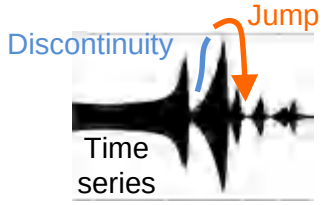


Largest response is completely missed by linear models.
Linear models predict no mode at these frequencies and no explanation can be found.
Typical troubleshooting on such structures goes from 1 to 3 years if carried out without the right tools.使用线性模型会遗漏大部分反馈。 线性模型在这些频率下没有模态预测，也找不到解释。如果没有合适的工具进行，此类结构的典型故障排除将持续1至3年。

As design requirements increase nonlinearity appears随着设计要求增加非线性出现







The Reference Company in Nonlinear Vibration Analysis
非线性振动分析公司介绍

NOLISYS
Solutions & Software
for Nonlinear Vibrating Systems

More than 20 years of expertise in:
20多年的经验：

- Modal analysis 模态分析
- Experimental data processing 实验数据处理
- Modeling and simulation 建模和仿真模拟

Technology from:
技术源自：

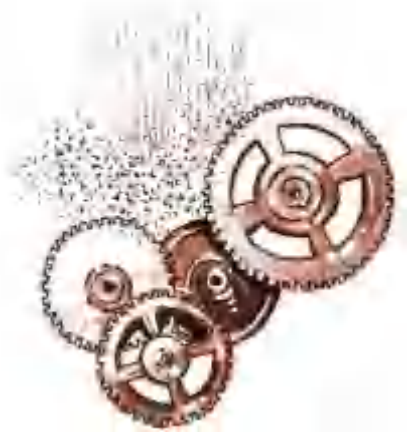
Our incubators:
我们的孵化器

We are trusted by:
信任我们的客户：

Why It Matters
为什么仿真很重要？

Nonlinearity heavily weighs on development cost and time of final assembly and components:非线性极大地影响最终组装和组件的开发成本和时间

- Re-test costs
- 再测试成本
- Prototypes costs
- 样机成本
- Engineering time & costs
- 工程时间与成本
- Inefficient multiple modeling costs
- 低效多次建模成本



Indirect challenges are:间接的挑战

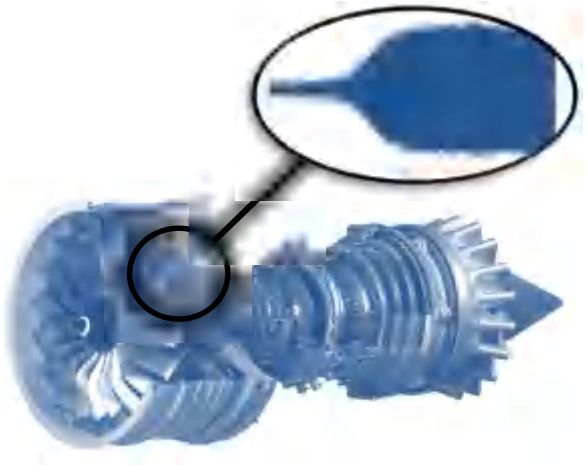
- Lack of confidence and uncertainty 缺乏信心和不确定性
- Loss of performance　性能降低
- Loss of contract or loss of mission 失去合同或任务

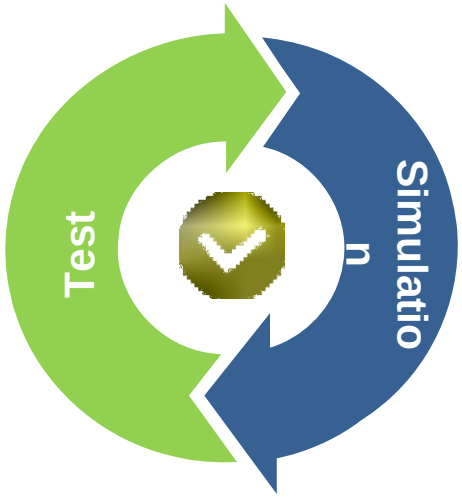
Overall technical maturity of the design is key for competitiveness.
设计的整体技术成熟度是竞争力的关键

Value Proposition 价值主张

To make engineers **immune to (nonlinear) vibration problems** by:
使工程师不受（非线性）振动问题的影响，方法是

1. **Understanding vibration phenomena** encountered experimentally.
   了解实验中遇到的振动现象
1. Developing fast-running **high-fidelity structural models**.
   开发快速运行的高保真结构模型。





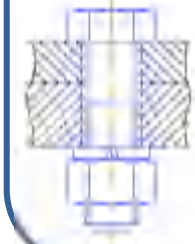
Decrease cost
降低成本

Improve Performance
提高性能

Reduce Time-to-market
缩短上市时间

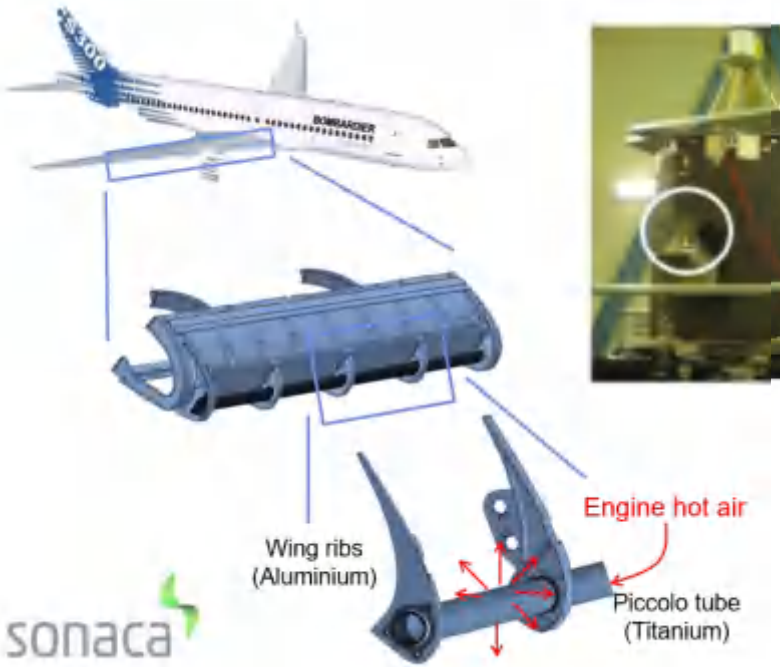
Where Do Nonlinearities Come From
非线性分析来源

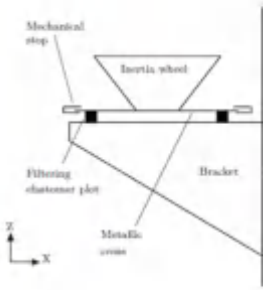
Bolts, joints and clearances
螺栓，接头 和间隙



Elastomers and composites
弹性体 和复合材料

Contact and friction
接触和摩擦

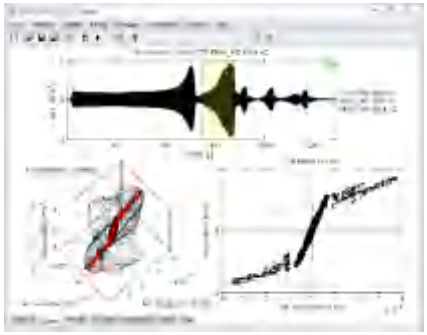




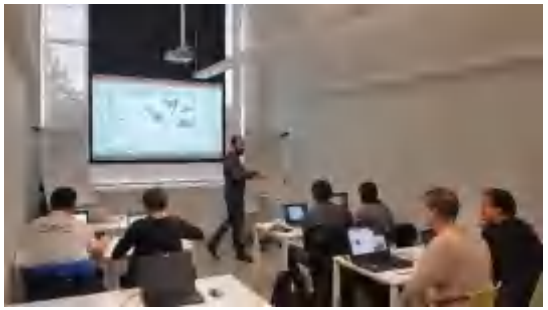
Our Offering
我们提供

Engineering services
工程服务

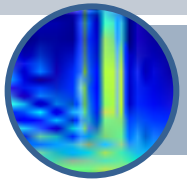
NI2D® software
软件



NI2D® training
培训



Test campaign design and execution 测试活动设计与执行



Analysis of experimental data 实验数据分析

Nonlinear structural modeling 非线性结构建模

Advanced vibration simulations 高级振动仿真

From testing...
从测试…
…to simulations
…到仿真

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Solutions & Software

for Nonlinear Vibrating Systems

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