

#### REGAINING VISION, REGAINING LIFE

Jefferies – London Healthcare Conference November 19<sup>th</sup>, 2014

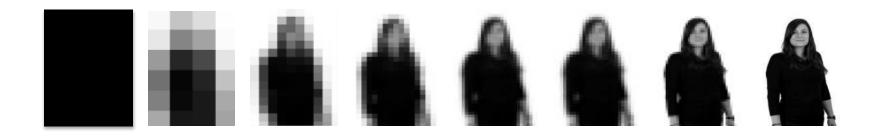
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### Pixium Vision: our mission

Pixium Vision's mission is to provide the best-in-class vision restoration systems enabling the blind to regain greater autonomy





### **Pixium Vision**

Proprietary systems combining French & international scientific & technological excellence

#### 2

Attractive addressable 1 Billion Euro + market opportunity\*

- 3 Two differentiated systems:
  - IRIS<sup>®</sup> on track for launch in 2015
  - PRIMA to further expand the market opportunity after 2018

#### 4

Strong and dedicated management

Establish Pixium Vision's position as a leader in Vision Restoration Systems



Imagine how much blind people miss out on...

# Testimonies of patients participating in the clinical trial







### Blindness Costs and target pathologies

# Solving blindness represents a major market opportunity

285 million people in the world are visually impaired

## 40–45 million people in the world are totally blind

#### In the US and Europe, blindness costs exceed tens of billions of USD per annum



No treatment exists for blind patients *Retinitis Pigmentosa (RP)* and *Age-Related Macular Degeneration (AMD)* are major causes of blindness

Sources: World Health Statistics. World Health Organization -http://www.amd.org -NORC Cost of Vision Problems: The Economic Burden of Vision Loss and Eye Disorders in the United States -Study commissioned by Prevent Blindness in America and conducted by University of Chicago -European Forum Against Blindness (EFAB)



# Two major pathologies lead to photoreceptor degeneration and ultimately, blindness



#### Retinitis Pigmentosa (RP)

- Genetic disease
- Blindness occurrence: ~ 35 40 years old
- Worldwide prevalence: 1.5 to 2 million
- Prevalence in the US + EU: 350,000 - 400,000
- Incidence (US + EU): 15k-20k patients annually



## Age-related Macular Degeneration (AMD)

- Age-related disease
- Later blindness occurence: 70+ years old
- Worldwide prevalence: 12 to 15 million
- Prevalence in the US + EU: 4 million
- Incidence (US + EU): 350k 400k patients annually

#### Retinitis Pigmentosa is Pixium Vision's initial target market



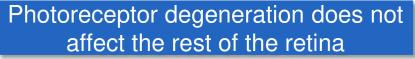
Source: 2012 World Health Organization – by 2020 there will be 75 million blind people in the world and 314 million partially-blind people Fighting Blindness (UK) : 25K in UK and over 2M worldwide CentralSight fact sheet End-Stage Age-related Macular Degeneration

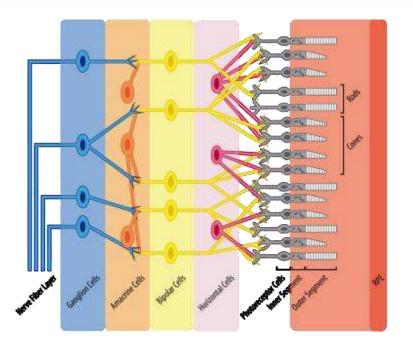
# The loss of the photoreceptor function is a major cause of blindness

The eye transforms light into electric signals

Pupil Inis Ciliary body

- Photoreceptor cells convert light into signals
- The human retina contains 6 million cone cells responsible for central vision



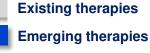


- RP and AMD are linked to photoreceptor degeneration
- However, bipolar cells, ganglion cells and downstream visual pathways remain INTACT and FUNCTIONAL in the vast majority of RP and AMD patients

With its technology, Pixium Vision is well positioned in the fast growing neuromodulation market

What is Neuromodulation?	Pathology/ Indication	Neuromodulation Technique	US prevalence
	Deafness	Cochlear Implants	1,000,000
Induction of biological			
responses from electrical stimulation on nerves or zone where nerve	Parkinson's Disease	Deep Brain Stimulation	216,000
activity is affected			
<ul> <li>\$5Bn+ market by 2018 implying a high double</li> </ul>	Depression	Vagas Nerve Stimulation Deep Brain Stimulation	775,000
digit growth rate			
(around 15%)	Blindness	Vision Restoration Systems	~175,000 RP ~ 200,000 AMD

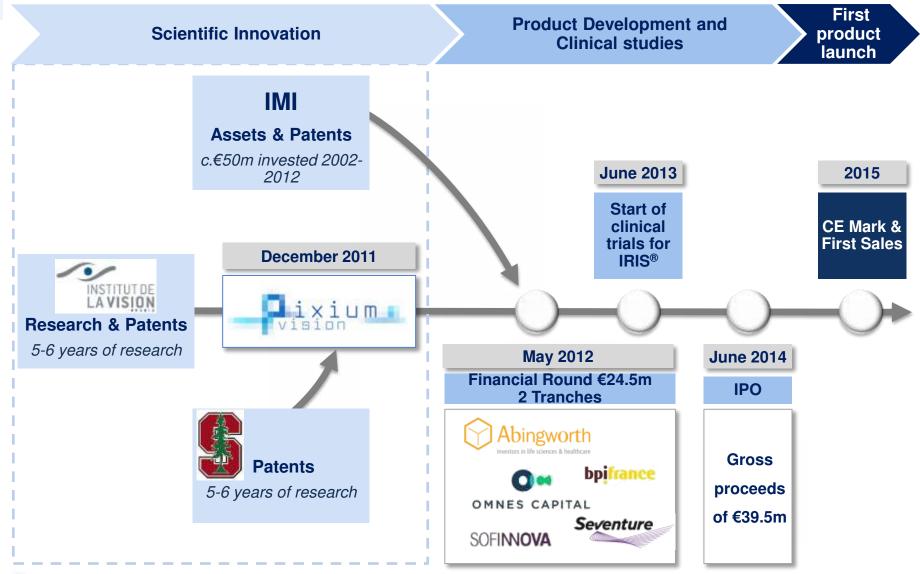
Source: NIH US Net prevalence patient data





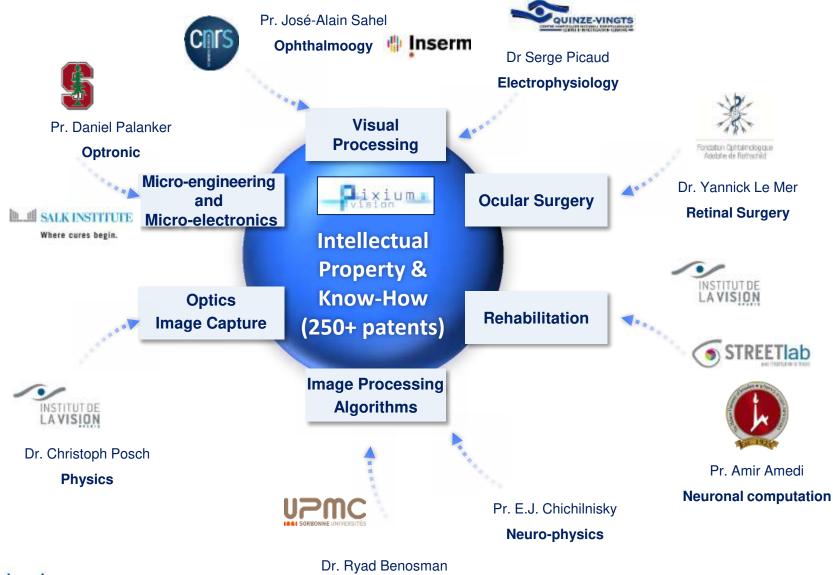
**Pixium Vision** *The convergence of excellence* 

# The Pixium Vision story relies on the convergence of technology and financing





# Pixium Vision is supported by French excellence and global expertise



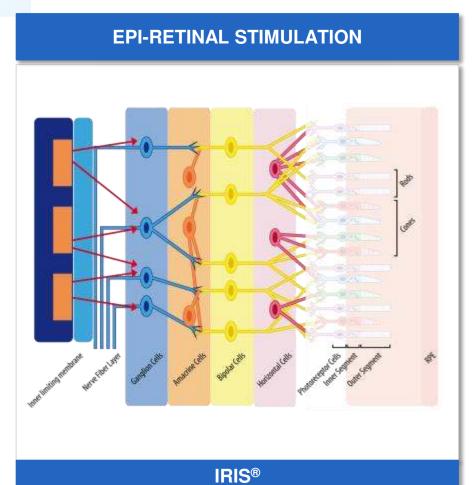
**Mathematics / Robotics** 

14



### IRIS<sup>®</sup> A state of the art Vision Restoration System

# Pixium Vision is developing two differentiated Vision Restoration Systems



**SUB-RETINAL STIMULATION** 

PRIMA





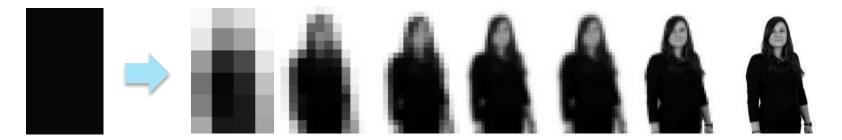


### The IRIS® Vision Restoration System

A technically advanced system designed to deliver important clinical benefits



Initial goal is to deliver light and shape perception, and to localize objects giving the patient the ability to negotiate an unfamiliar environment





# A unique proprietary *event-based* camera, functioning like the human eye

Our eyes only see changes in our environment (contrast, intensity, luminance, etc.) Photoreceptors are activated independently



#### **Camera Features**

- Breakthrough bio-mimetic camera
- Neuromorphic asynchronous, eventbased: light is encoded into asynchronous impulses (-1,0,+1)
- Output relates directly to signals observed in the corresponding levels of biological retinas

#### **Benefits**

- Replicates normal vision in real time
- Reduces energy consumption and brandwith
- Visual information can be directly understood by the visual cortex



## IRIS®, a technically advanced epi-retinal implant



- Epi-retinal implant
- 150 electrodes in the commercial version
- Electrical power by induction
- Simple surgical procedure
- Compatible with
  - Next-generation vision sensors
  - Signal-processing algorithms
- Well tolerated by patients so far





## IRIS<sup>®</sup>: A technically advanced and differentiated VRS



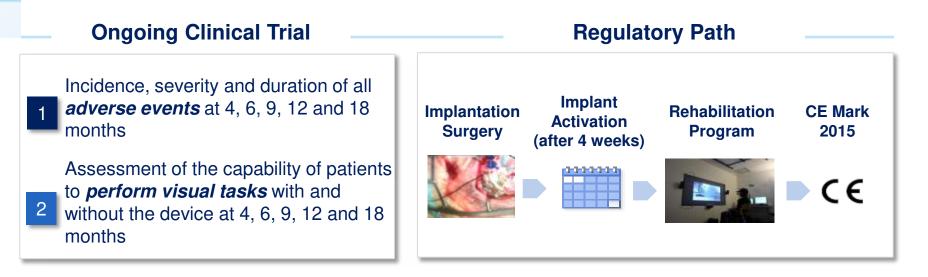
	Device Features	IRIS®	Main Competitor
Y	Camera	Event Based	Frame Based
Patient Programming - Tuneability		Yes	No
Ĕ	Number of Electrodes	150 electrodes	60 electrodes
<b>jery</b>	Surgical Procedure	2.5 hours	Up to 4 hours
Surgery	Explant and Replacement	Yes	Replacement not proven





### **IRIS®: A clear path to market** *Aiming for a leading market position*

## IRIS<sup>®</sup>: Continue to build evidence for CE Mark





#### **Rehabilitation Program**

- Programs tailored for each patient
- Rehabilitation programs will enable further software improvements
- Patients' vision improves during the course of their rehabilitation program



## A lean and specialized commercial organization

#### 25 to 30 key ophthalmic surgery centers in Europe



#### Market development process

#### **Ongoing:**

- KOL engagement Discussions with patient associations Participation in major scientific and medical conferences



Country/market assessments to select and prioritize centers



**Recruitment of a lean internal** technical/clinical specialist sales team focused on:

- **Commercial & educational** activities
- Training & support of orthoptists

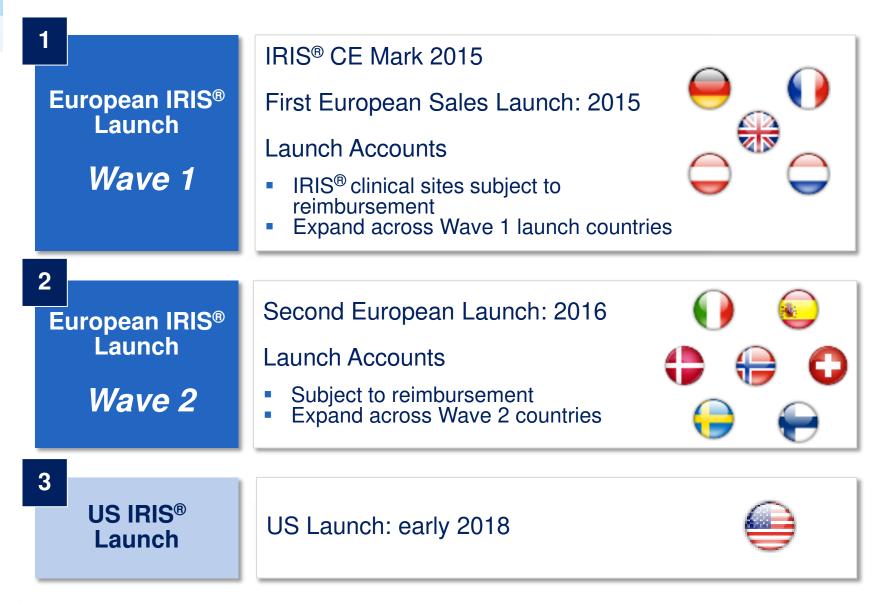
These centres give access to ~80% of qualifying patients\*



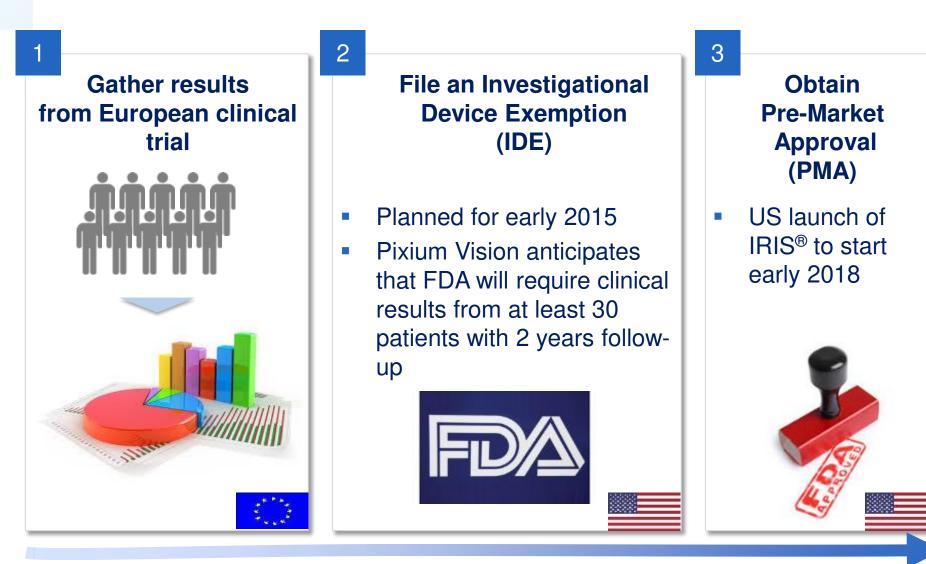
Sales team to reach a peak of 2 to 3 team members per country & sales admin employees



## Staged launch planned for IRIS®

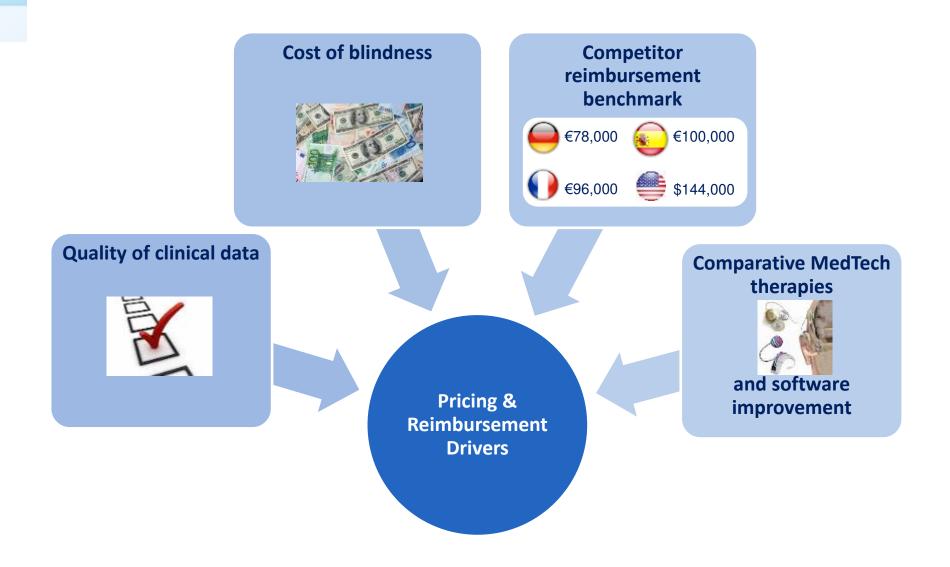


## IRIS® path to the US market





## IRIS® pricing and reimbursement drivers

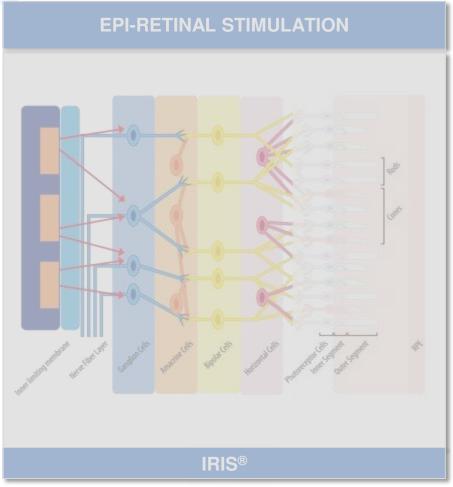


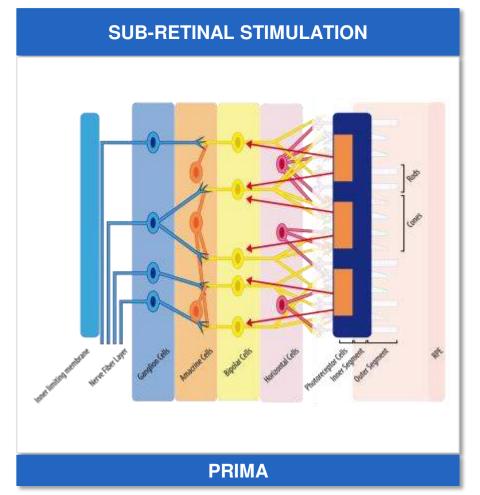




### **PRIMA Vision Restoration System** *Building on IRIS® leading market position*

# Pixium Vision is developing two differentiated Vision Restoration Systems





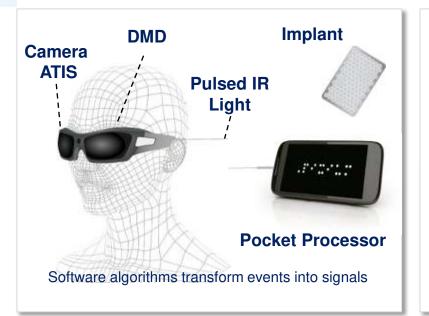


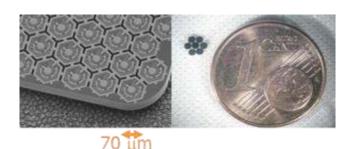




### The PRIMA Vision Restoration System

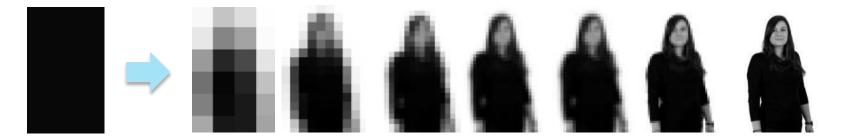
A technically advanced system designed to deliver further clinical benefits





- Physiological signal processing
- Simpler and shorter surgical procedure
- Retinal chips in modules up to 5,000 electrodes
- Advanced processing algorithms
- Reduced energy requirements enabling miniaturization of components

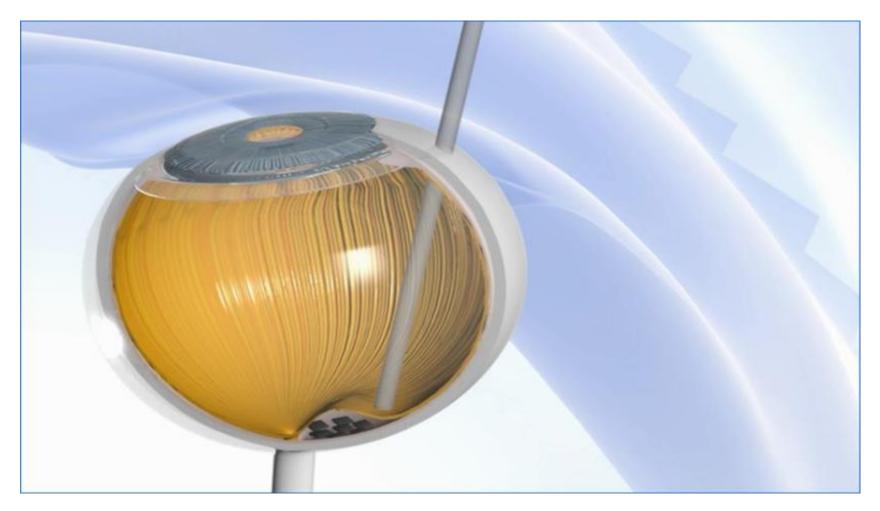
Goal is to deliver improved visual perception to the level of direct facial recognition





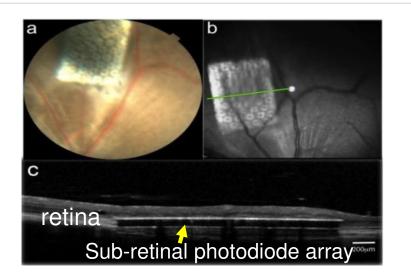
### PRIMA, a sub-retinal implant

Sub-retinal implants directly stimulate the retinal cells that used to be connected to the photoreceptors

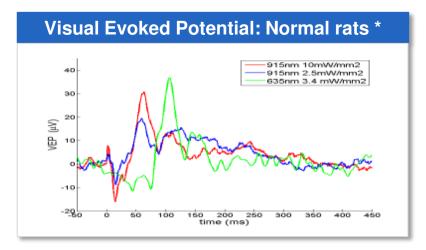




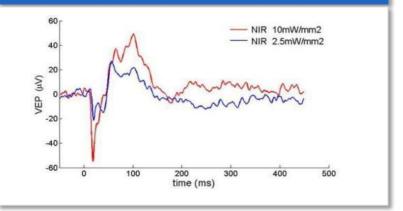
### PRIMA: Validated in pre-clinical models



- Proof of concept achieved in rats
- Safety demonstrated in rats and pigs
- Scale-up of manufacturing process ongoing
- First in man expected in 2016



#### Visual Evoked Potential: Blind rats \*

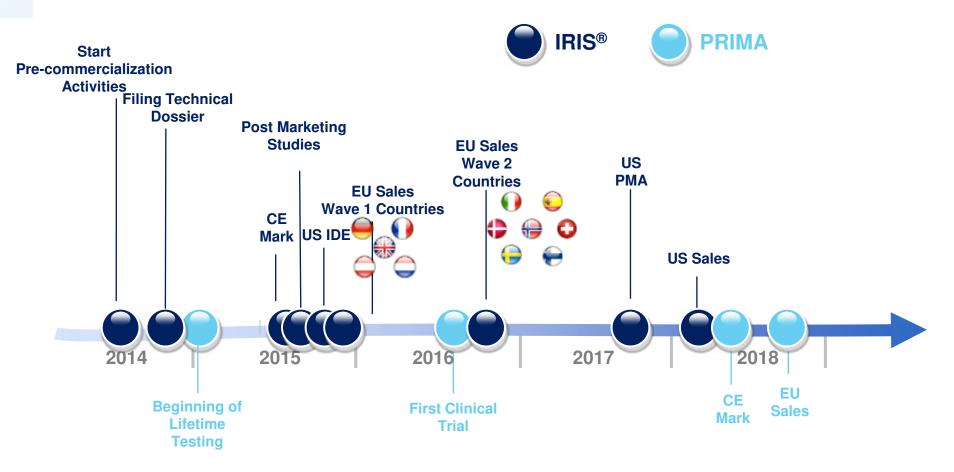






### A rich upcoming newsflow

# Pixium to complete IRIS<sup>®</sup> clinical trial and prepare for commercial launch in 2015; Prima to follow



Multiple major value-creation milestones anticipated in the next 2 years





### Thank You



### Appendix

## H1 2014 Financial statements

P&L summary		
in thousand euros	S1 2014	S1 2013
Operating income / other income	1 104,1	574,4
Research and Development	4 510,6	2 285,0
General and Administrative	930,1	498,6
Operating income	(4 336,5)	(2 209,2)
Net profit	(4 325,7)	(2 211,3)
Earnings per share	€ (0,62)	€ (0,09)

Cash f	flow state	ement su	ımmary
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in thousand euros	S1 2014	S1 2013
Opening cash and cash equivalents	9 420,2	3 088,6
(Decrease) / Increase in cash position	32 383,4	(217,1)
O/W net cash flows from operating activities	(4 530,1)	(2 618,4)
Closing cash and cash equivalents	41 803,6	2 871,5



## Q3 2014 Financial statements

#### Sales of the first nine months

	First nine months		
in thousand euros	2014	2013	
Operating income / other income	1 564.3	944.7	

#### Cash flow statement summary

_	First nine months	
in thousand euros	2014	2013
Opening cash and cash equivalents	9 420.2	3 088,6
(Decrease) / Increase in cash position	33 383.6	(1 475.4)
O/W net cash flows from operating activities	(7 538.6)	(3 751.3)
Closing cash and cash equivalents	42 803.6	1 613.1

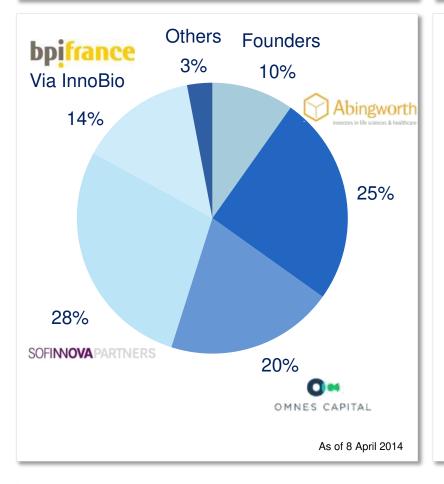


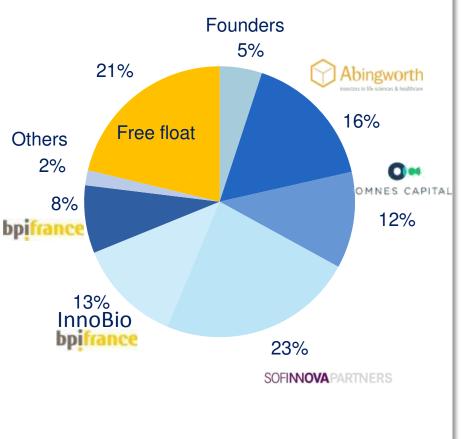
### Shareholder structure

#### Pre-IPO shareholder structure On a non-diluted basis

#### **Post-IPO shareholder structure**

*On a non-diluted basis* (with full exercise of the extension clause and overallotment option exercised at 95.8%)







### **Competitive landscape**

System	Number of Electrodes	Epi-Retinal Or Sub-Retinal	Features & Benefits	Clinical Results	Regulatory Status
Jixium Vision	<ul> <li>IRIS<sup>®</sup>: 50 to 150</li> <li>PRIMA : up to 5000</li> </ul>	<ul> <li>IRIS<sup>®</sup>: Epi-Retinal</li> <li>PRIMA: Sub- retinal</li> </ul>	<ul> <li>2h surgery</li> <li>Explantable</li> <li>Neuromorphic Camera</li> <li>Tunable software</li> </ul>	<ul> <li>Short term study on 19 patients</li> <li>10 Patients CE mark study ongoing</li> </ul>	• CE Mark filing end of 2014
Second Sight	<ul> <li>Argus II : 60 electrodes</li> </ul>	• Epi-retinal	CMOS camera	<ul> <li>Argus I: 6 patients</li> <li>Argus II: IDE on 30 patients</li> </ul>	<ul> <li>Argus-II CE Mark Feb 2011</li> <li>FDA HDE Feb 2013</li> </ul>
	• Alpha IMS	Sub-Retinal	<ul> <li>Visual field of 12°</li> <li>Non explantable</li> </ul>	<ul> <li>11 patients from 2005 to 2009</li> <li>30 patients CE mark</li> </ul>	<ul> <li>CE Mark July 2013</li> </ul>
Na retina	• 500 electrodes	• Insufficient data	• No camera	<ul> <li>Launch scheduled for 2016</li> </ul>	<ul> <li>Pre-clinical phase</li> </ul>

