



REGAINING VISION, REGAINING LIFE

***SG-CIB***

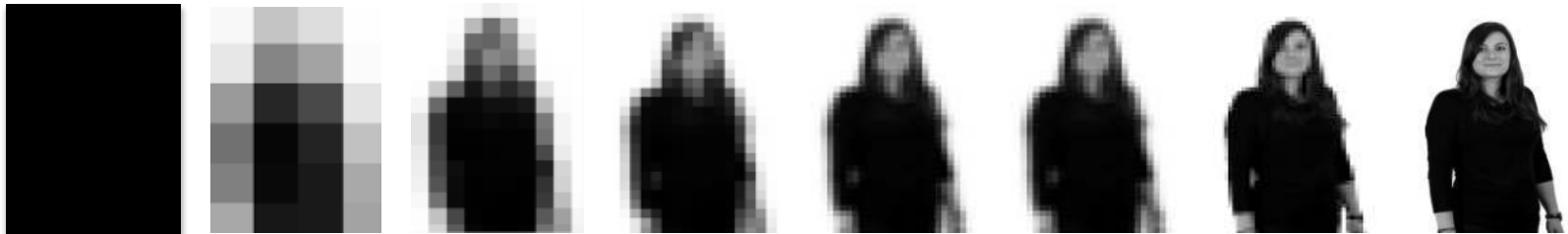
**Healthcare & Biotechnology Conference**

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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

1 Proprietary systems combining French & international scientific & technological excellence

2 Attractive addressable 1 Billion Euro + market opportunity\*

3 Two differentiated systems:

- IRIS® 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**

\* Company Estimate

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)

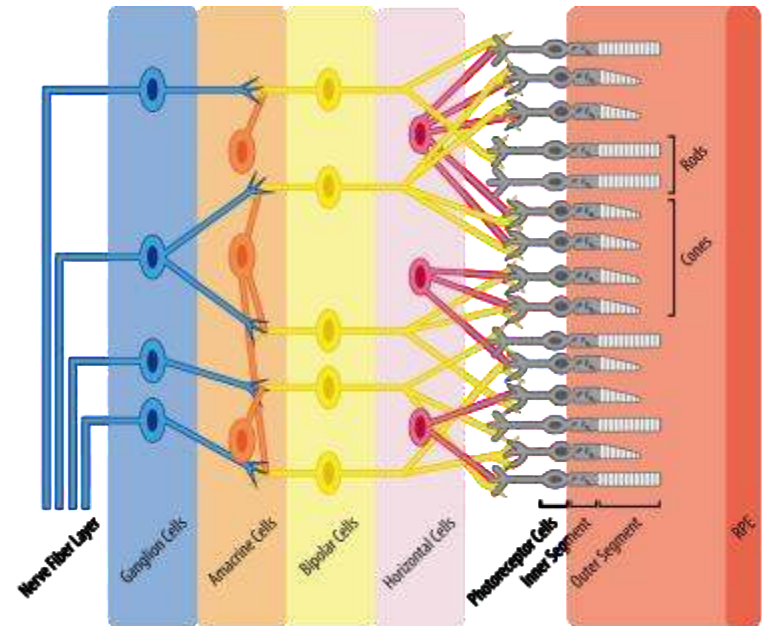
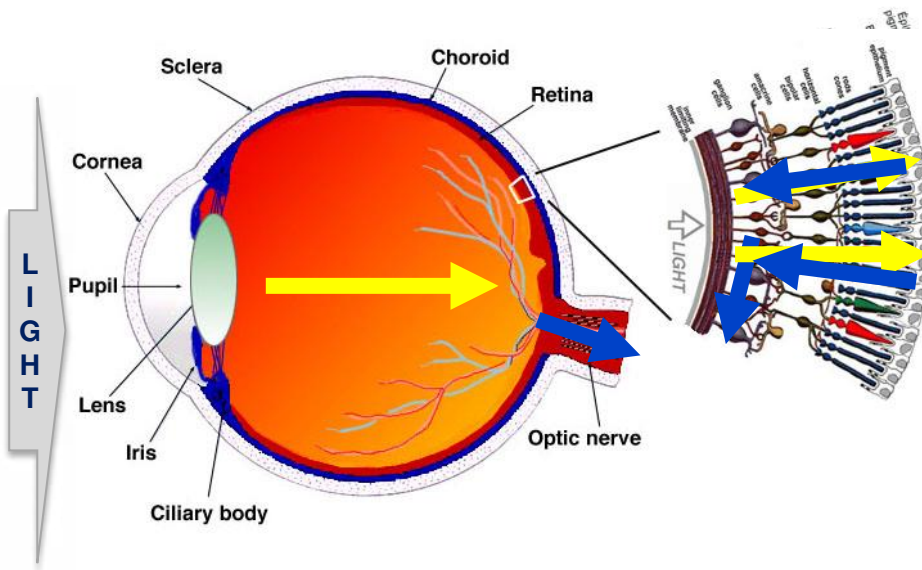
- Age-related disease
- Later blindness occurrence: 70+ years old
- Worldwide prevalence: 12 to 15 million
- Prevalence in the US + EU: 4 million
- Incidence (US + EU): 350k - 400k patients annually

Retinitis Pigmentosa is Pixium Vision's initial target market

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

The eye transforms light into electric signals


Photoreceptor degeneration does not affect the rest of the retina





- 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
<ul style="list-style-type: none"> <li>Induction of biological responses from electrical stimulation on nerves or zone where nerve activity is affected</li> <li>\$5Bn+ market by 2018 implying a high double digit growth rate (around 15%)</li> </ul>	Deafness	Cochlear Implants	1,000,000
	Parkinson's Disease	Deep Brain Stimulation	216,000
	Depression	Vagas Nerve Stimulation Deep Brain Stimulation	775,000
	Blindness 	Vision Restoration Systems	~175,000 RP ~ 200,000 AMD

Source: NIH US Net prevalence patient data

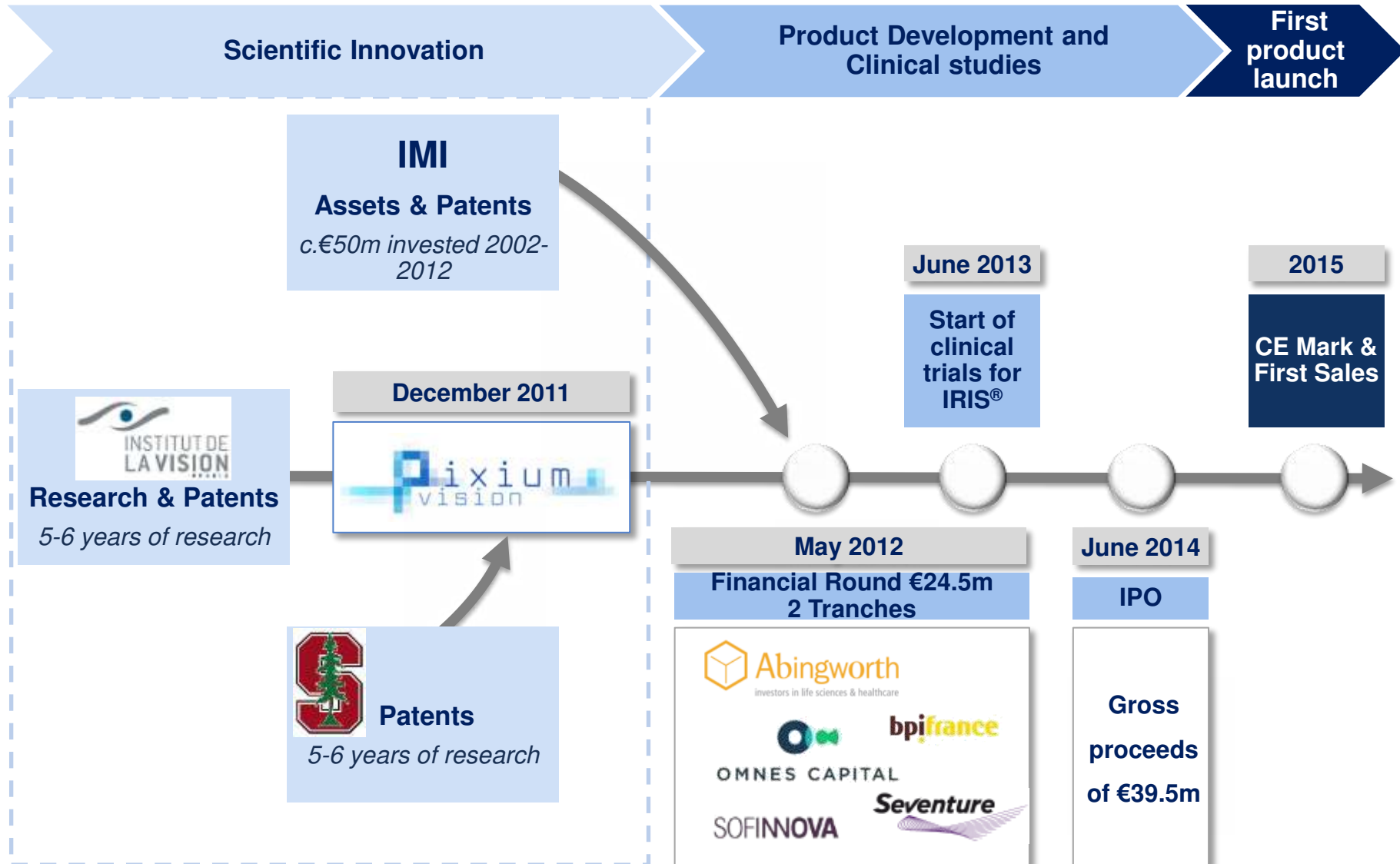
 Existing therapies  
 Emerging therapies



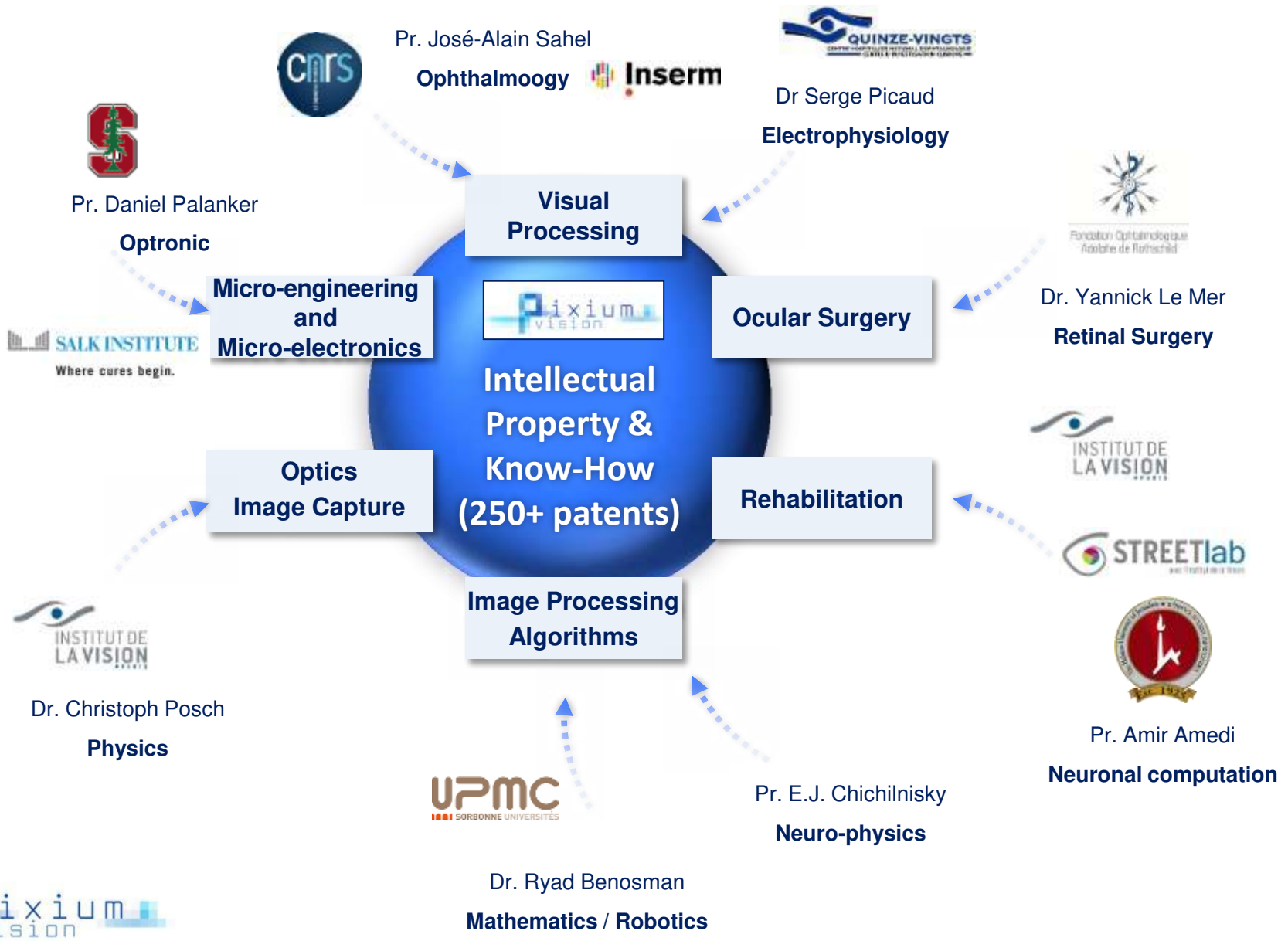
## **Pixium Vision**

*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



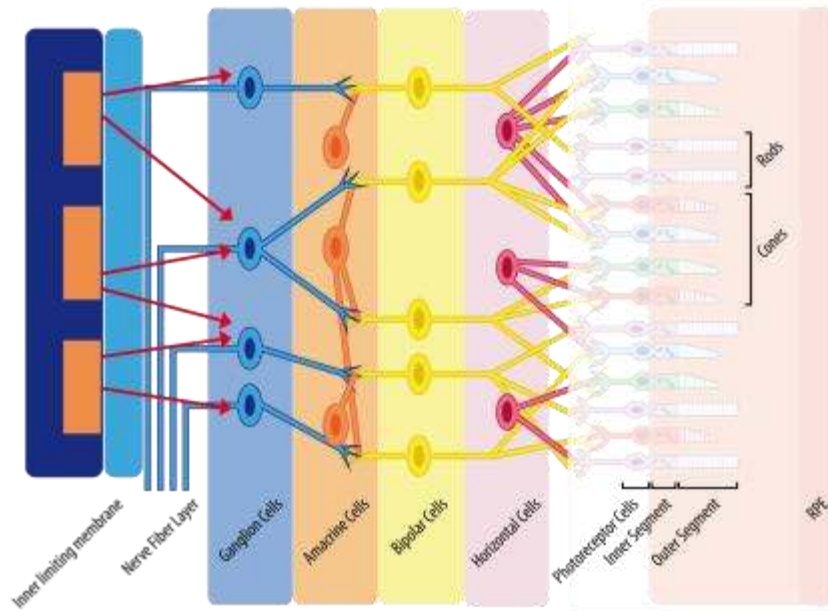


IRIS®

*A state of the art Vision Restoration System*

# Pixium Vision is developing two differentiated Vision Restoration Systems

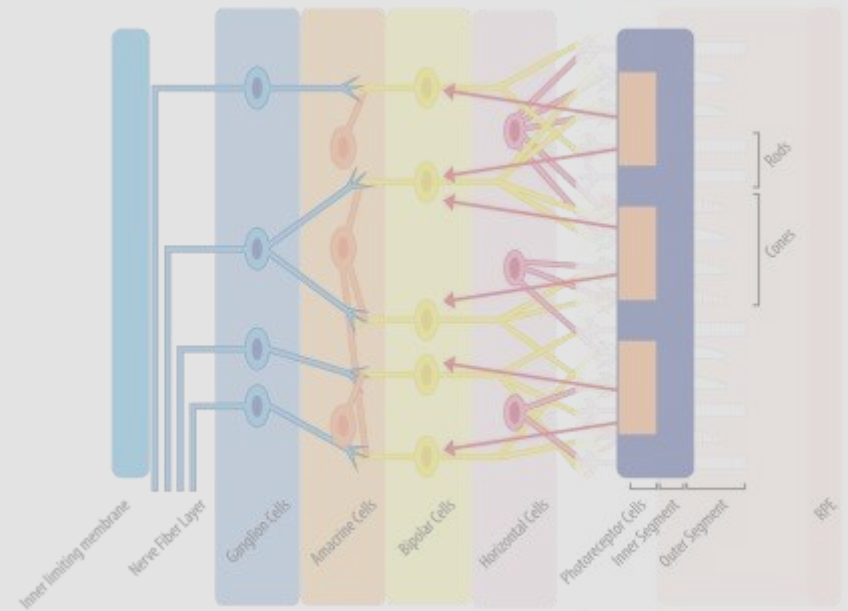
## EPI-RETINAL STIMULATION



IRIS®



## SUB-RETINAL STIMULATION

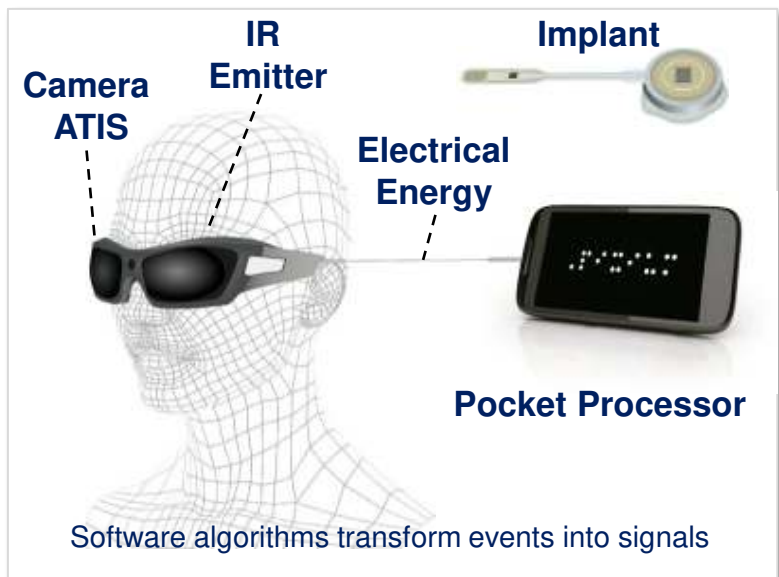


PRIMA



# The IRIS<sup>®</sup> Vision Restoration System

A technically advanced system designed to deliver important clinical benefits

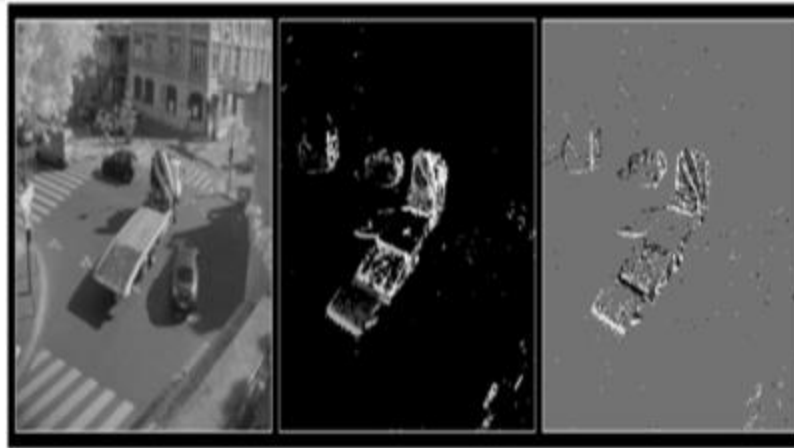


**Initial goal is to deliver light and shape perception, and to localize objects giving the patient the ability to negotiate an unfamiliar environment**



# 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, event-based: 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 bandwidth
- Visual information can be directly understood by the visual cortex

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



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



## **IRIS®: A clear path to market**

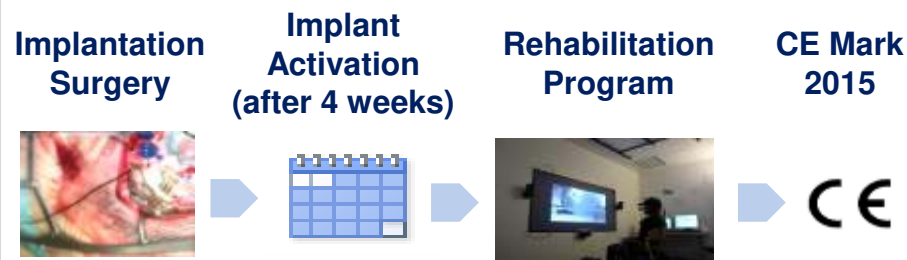
*Aiming for a leading market position*

# IRIS®: Continue to build evidence for CE Mark

## Ongoing Clinical Trial

- 1 Incidence, severity and duration of all **adverse events** at 4, 6, 9, 12 and 18 months
- 2 Assessment of the capability of patients to **perform visual tasks** with and without the device at 4, 6, 9, 12 and 18 months

## Regulatory Path



## Clinical Centers



**Paris & Nantes**



**Graz**



**Hamburg**

## 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



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

## 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



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

\* Company Estimate

# Staged launch planned for IRIS®

1

European IRIS®  
Launch

*Wave 1*

IRIS® CE Mark 2015

First European Sales Launch: 2015

Launch Accounts

- IRIS® clinical sites subject to reimbursement
- Expand across Wave 1 launch countries



2

European IRIS®  
Launch

*Wave 2*

Second European Launch: 2016

Launch Accounts

- Subject to reimbursement
- Expand across Wave 2 countries



3

US IRIS®  
Launch

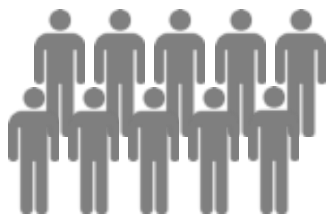
US Launch: early 2018



# IRIS® path to the US market

1

## Gather results from European clinical trial



2

## File an Investigational Device Exemption (IDE)

- Planned for early 2015
- Pixium Vision anticipates that FDA will require clinical results from at least 30 patients with 2 years follow-up



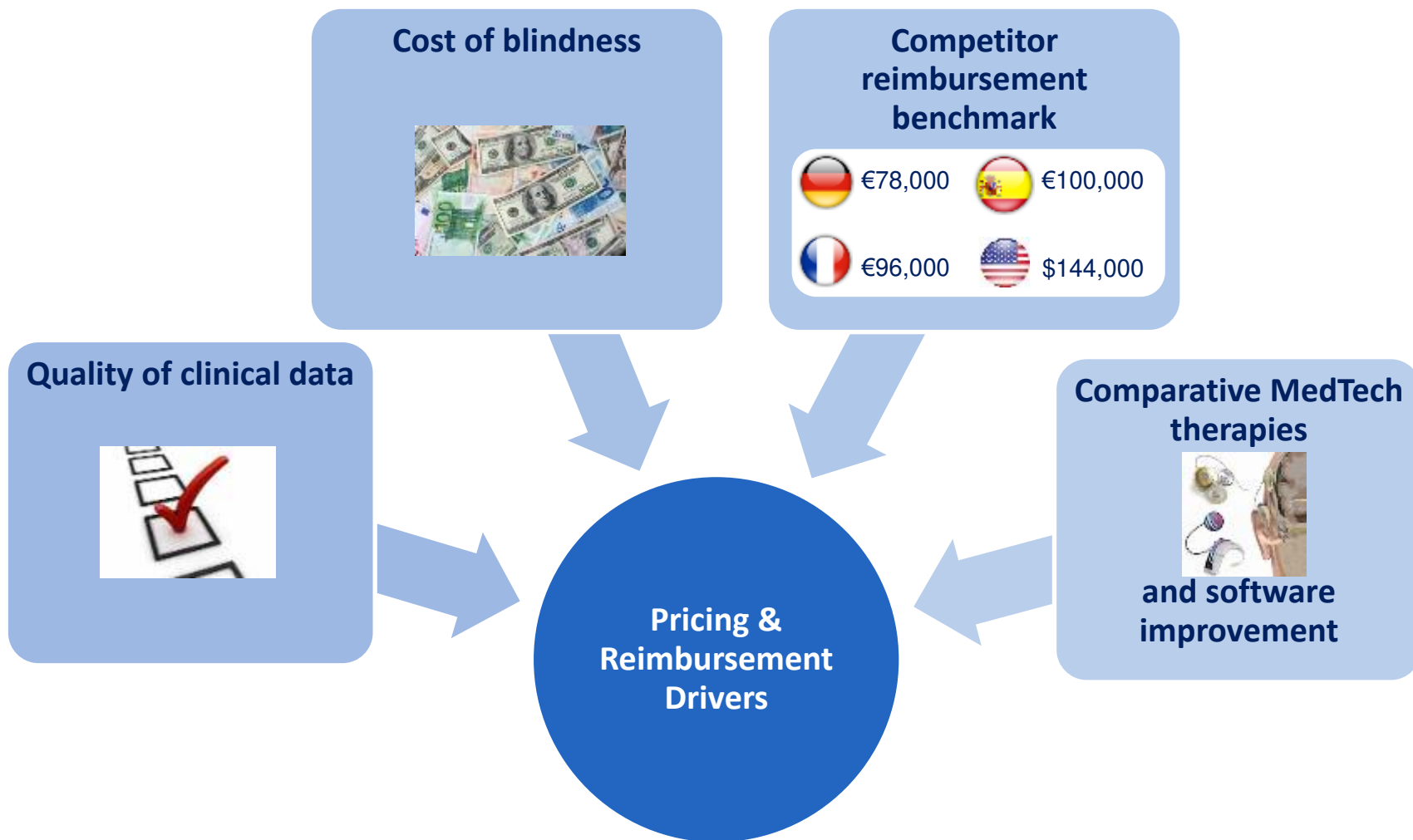
3

## Obtain Pre-Market Approval (PMA)

- US launch of IRIS® to start early 2018



# IRIS<sup>®</sup> pricing and reimbursement drivers



# Software upgrades and support services will generate an additional revenue stream

## Software & support services sales

### Illustration with key role of software evolution in Cochlear implant market



- **Software improvement needed to:**
  - Improve performance and patient benefit
  - Enhance product life cycle management
- **Software improvement to leverage implant clinical utility:**
  - Develop GPS, reading and other applications



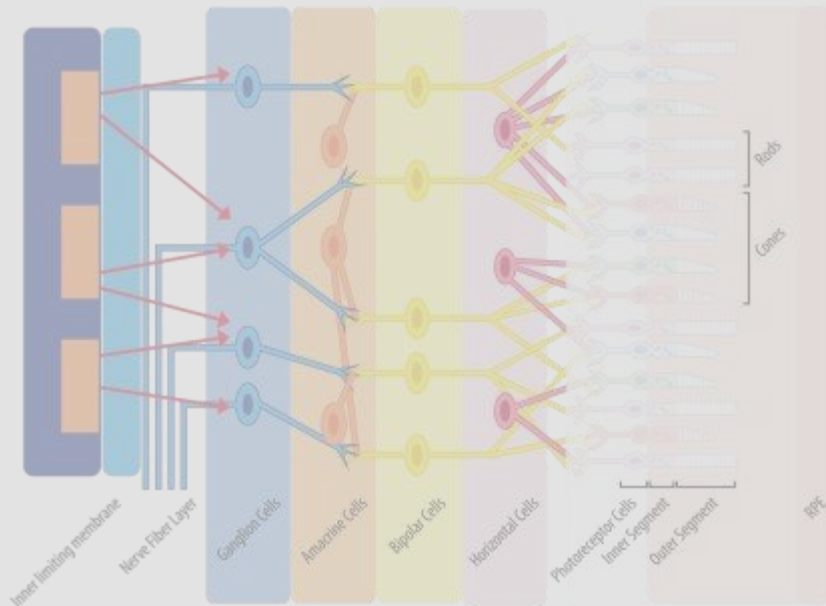


## **PRIMA Vision Restoration System**

*Building on IRIS® leading market position*

# Pixium Vision is developing two differentiated Vision Restoration Systems

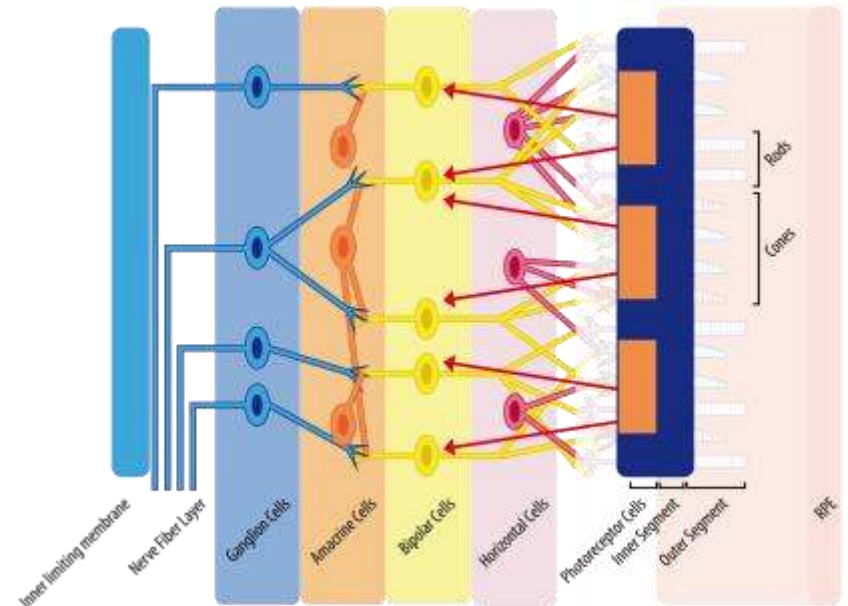
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IRIS®



## SUB-RETINAL STIMULATION

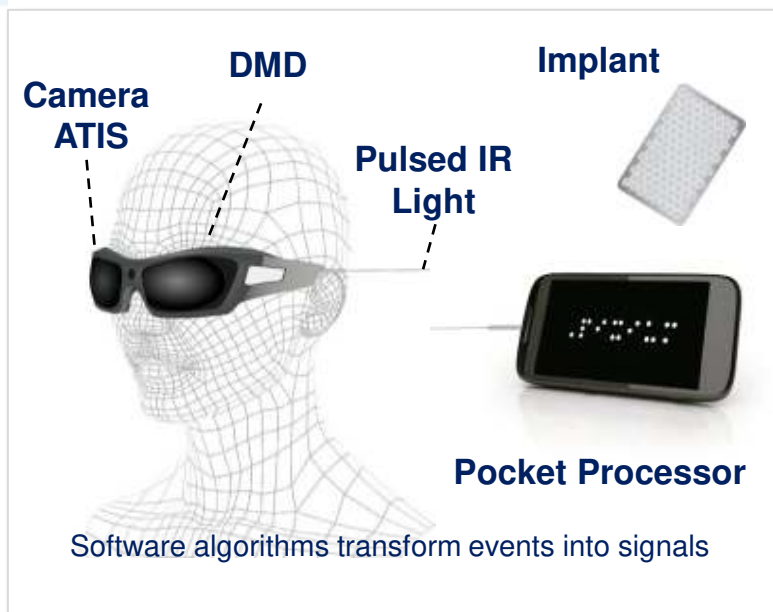


PRIMA



# The PRIMA Vision Restoration System

A technically advanced system designed to deliver further clinical benefits



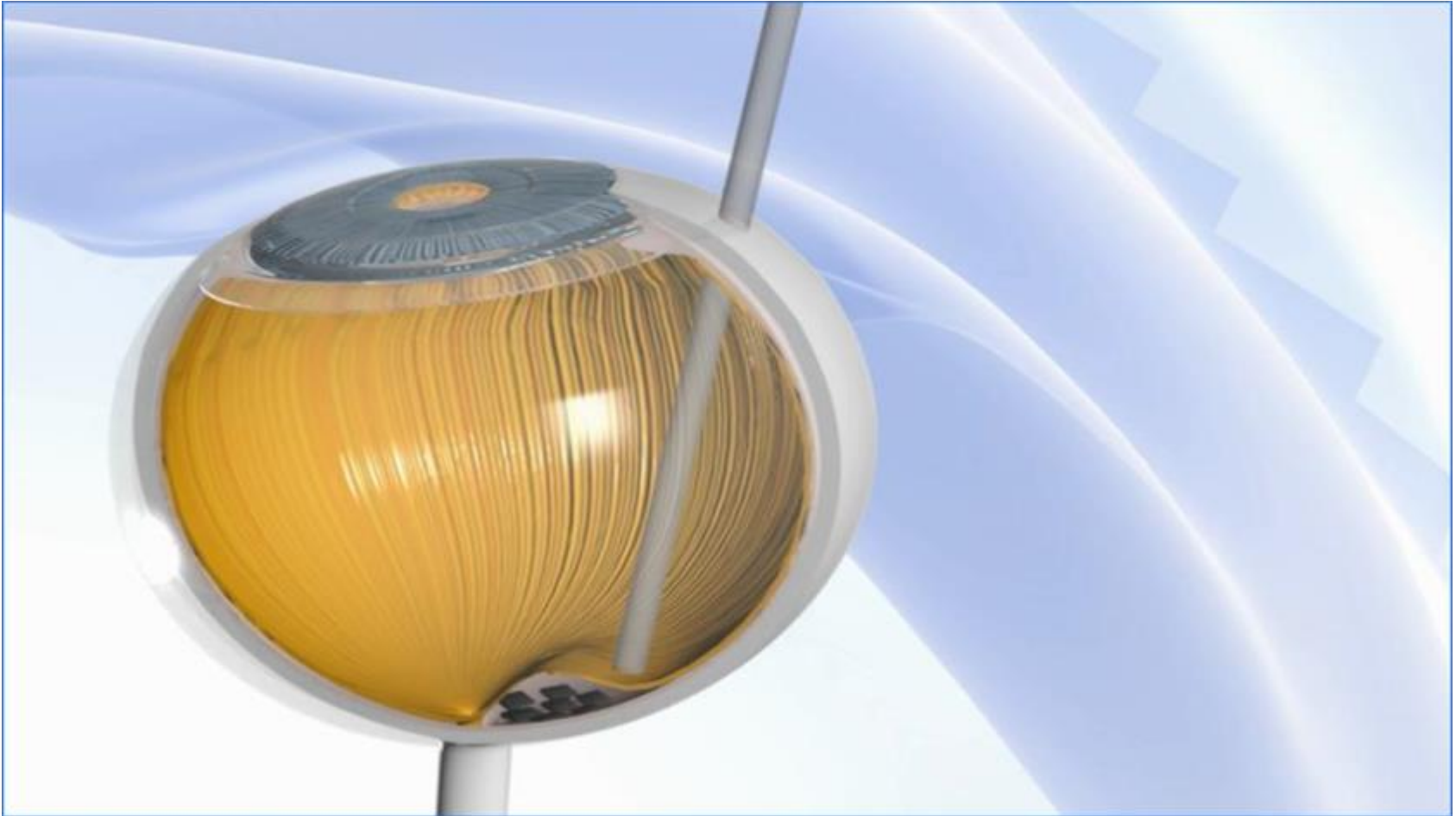
- Physiological signal processing
- Simpler and shorter surgical procedure
- Retinal chips in modules up to 5,000 electrodes
- Advanced processing algorithms
- Reduced energy requirements enabling miniaturization of components

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

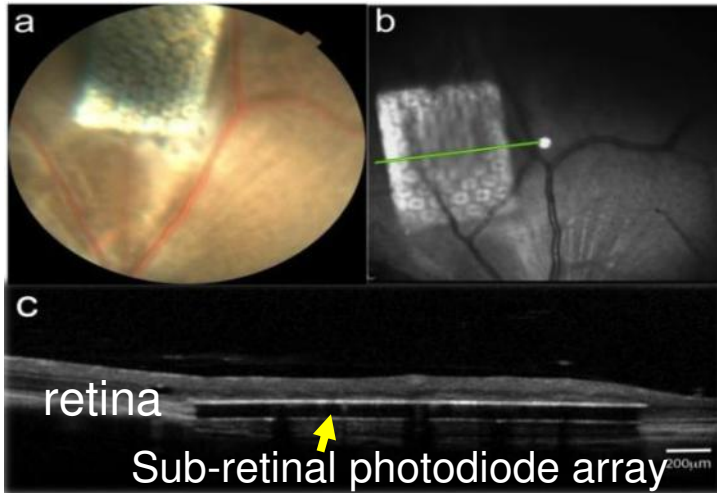


# PRIMA, a sub-retinal implant

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

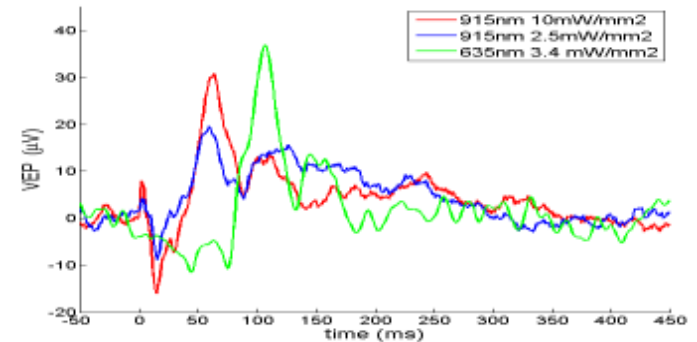


# PRIMA: Validated in pre-clinical models

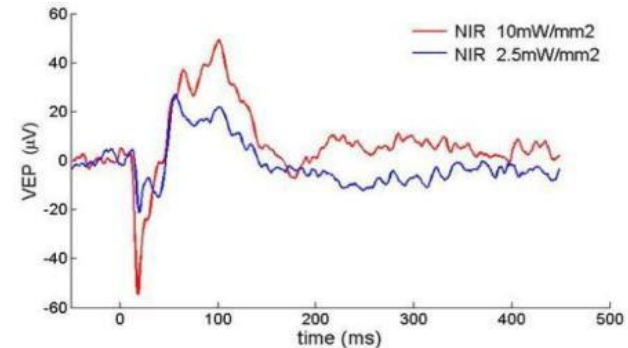


- Proof of concept achieved in rats
- Safety demonstrated in rats and pigs
- Scale-up of manufacturing process ongoing
- First in man expected in 2016

## Visual Evoked Potential: Normal rats \*



## Visual Evoked Potential: Blind rats \*

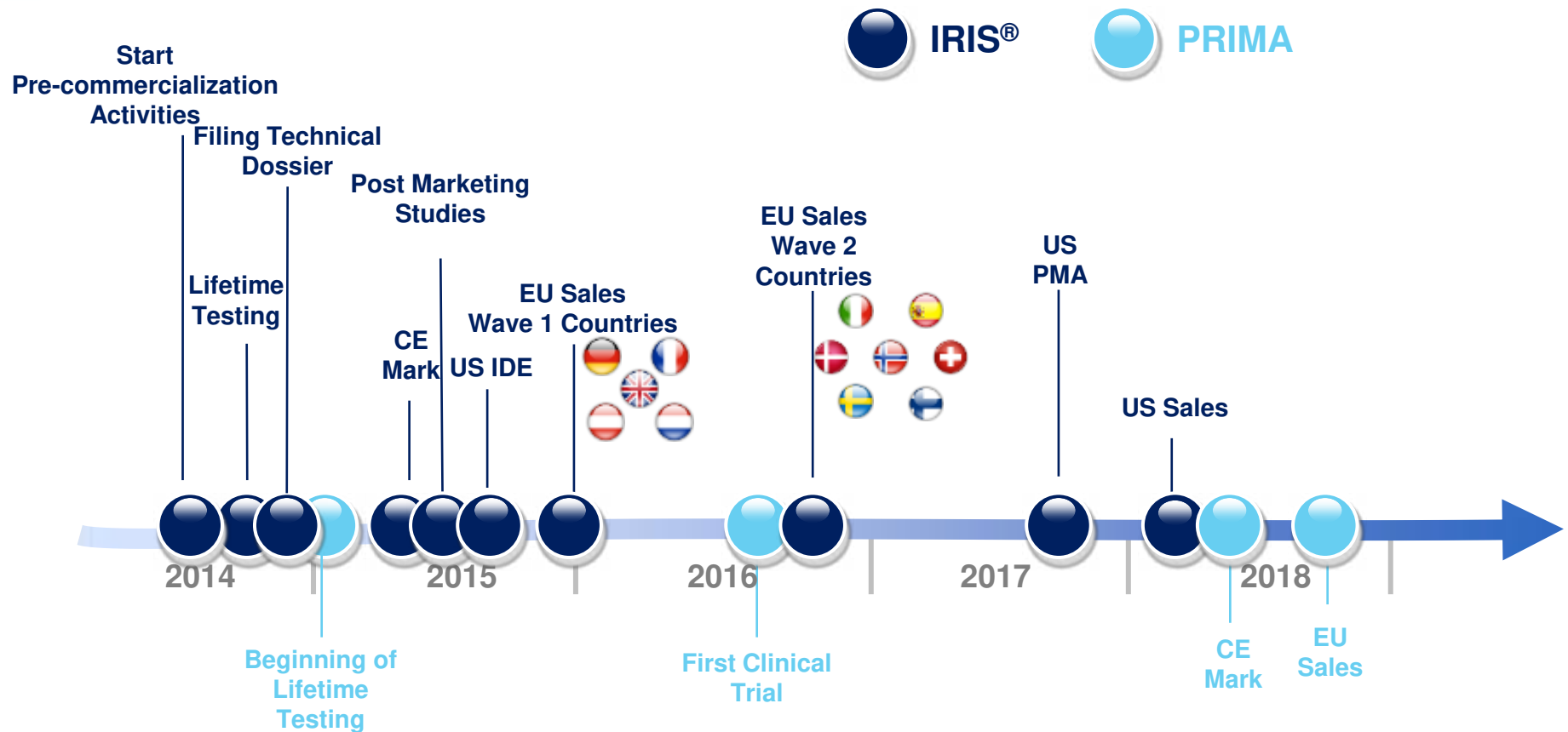


\* Ref: *J. Neural. Eng* 9: 046014(2012)



A rich upcoming newsflow

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



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



## H1 2014 Financials

# Reminder IPO use of proceeds

1

**IRIS®**

Completion of clinical trial and commercialization of IRIS® in Europe

Clinical trial and commercialization of IRIS® in the USA

2

**PRIMA**

Development of PRIMA: from clinical trials to the obtention of regulatory approvals for commercialization in Europe and the US

# Reminder IPO use of proceeds

## ***P&L summary***

<i>in thousand euros</i>	<b>S1 2014</b>	<b>S1 2013</b>
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)

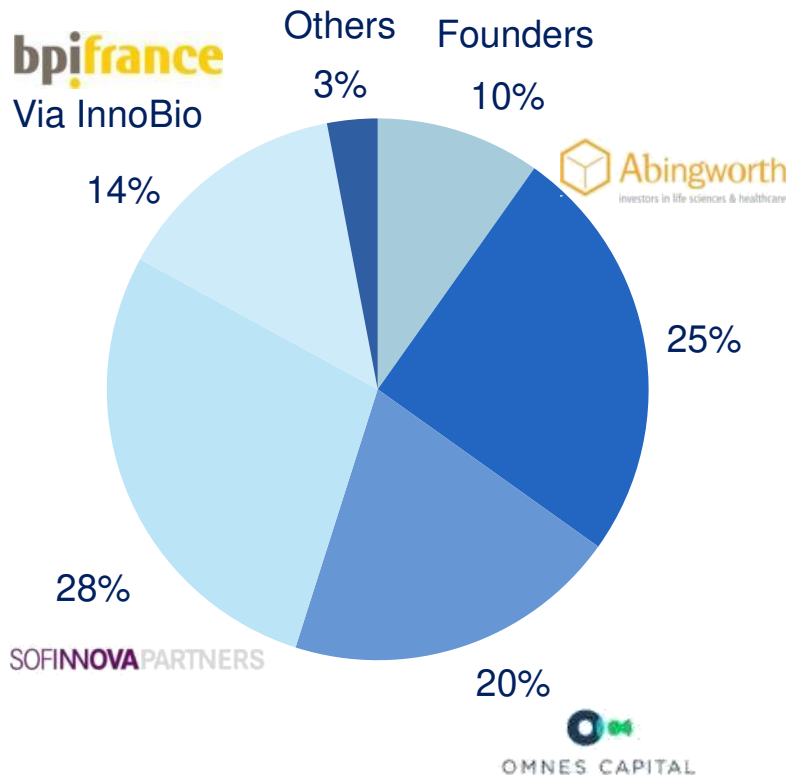
## ***Cash flow statement summary***

<i>in thousand euros</i>	<b>S1 2014</b>	<b>S1 2013</b>
Opening cash and cash equivalents	9 420,2	3 088,6
(Decrease) / Increase in cash position	32 383,4	(217,1)
<i>O/W net cash flows from operating activities</i>	(4 530,1)	(2 618,4)
Closing cash and cash equivalents	41 803,6	2 871,5

# Shareholder structure

## Pre-IPO shareholder structure

*On a non-diluted basis*

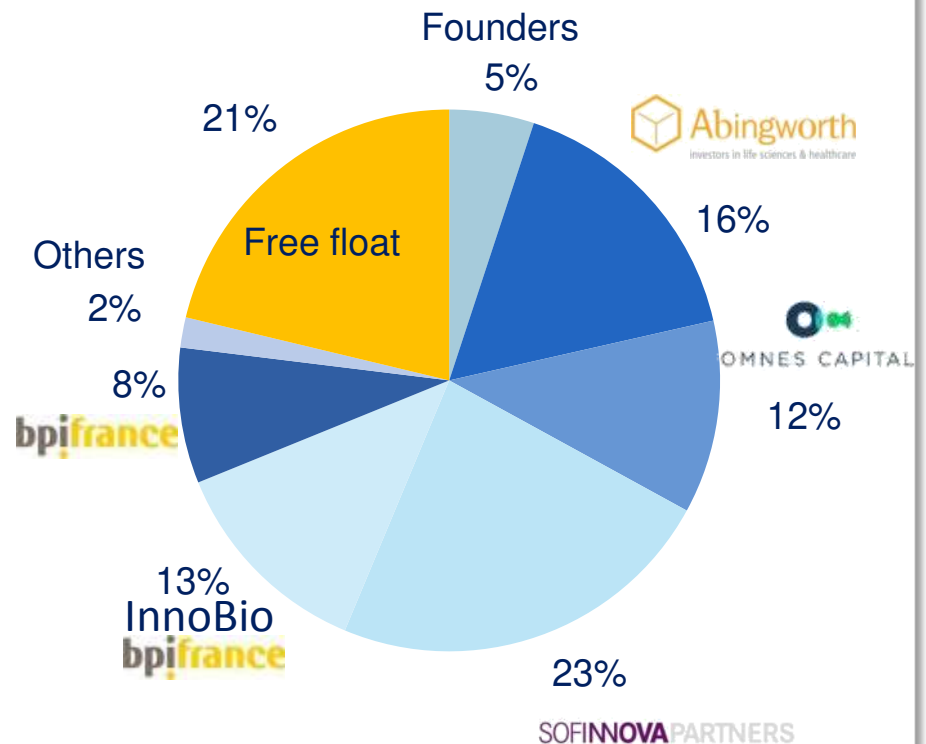


As of 8 April 2014





## 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
	<ul style="list-style-type: none"> <li>IRIS® : 50 to 150</li> <li>PRIMA : up to 5000</li> </ul>	<ul style="list-style-type: none"> <li>IRIS®: Epi-Retinal</li> <li>PRIMA: Sub-retinal</li> </ul>	<ul style="list-style-type: none"> <li>2h surgery</li> <li>Explantable</li> <li>Neuromorphic Camera</li> <li>Tunable software</li> </ul>	<ul style="list-style-type: none"> <li>Short term study on 19 patients</li> <li>10 Patients CE mark study ongoing</li> </ul>	<ul style="list-style-type: none"> <li>CE Mark filing end of 2014</li> </ul>
	<ul style="list-style-type: none"> <li>Argus II : 60 electrodes</li> </ul>	<ul style="list-style-type: none"> <li>Epi-retinal</li> </ul>	<ul style="list-style-type: none"> <li>CMOS camera</li> </ul>	<ul style="list-style-type: none"> <li>Argus I: 6 patients</li> <li>Argus II: IDE on 30 patients</li> </ul>	<ul style="list-style-type: none"> <li>Argus-II CE Mark Feb 2011</li> <li>FDA HDE Feb 2013</li> </ul>
	<ul style="list-style-type: none"> <li>Alpha IMS</li> </ul>	<ul style="list-style-type: none"> <li>Sub-Retinal</li> </ul>	<ul style="list-style-type: none"> <li>Visual field of 12°</li> <li>Non explantable</li> </ul>	<ul style="list-style-type: none"> <li>11 patients from 2005 to 2009</li> <li>30 patients CE mark</li> </ul>	<ul style="list-style-type: none"> <li>CE Mark July 2013</li> </ul>
	<ul style="list-style-type: none"> <li>500 electrodes</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient data</li> </ul>	<ul style="list-style-type: none"> <li>No camera</li> </ul>	<ul style="list-style-type: none"> <li>Launch scheduled for 2016</li> </ul>	<ul style="list-style-type: none"> <li>Pre-clinical phase</li> </ul>