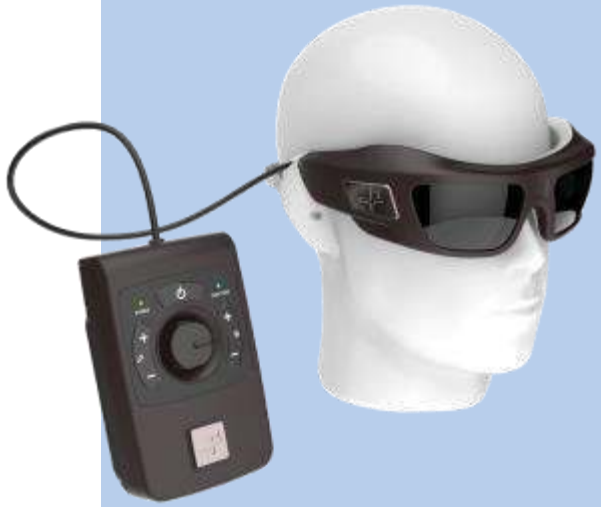


Pixium vision

REGAINING VISION, REGAINING LIFE

*Rodman & Renshaw conference*
*New York : 9 – 10 September 2015*

# Disclaimer

This document contains information on Pixium Vision's markets and competitive position, and more specifically, on the size of its markets. This information has been drawn from various sources or from the companies own estimates. Investors should not base their investment decision on this information. This document also contains certain forward-looking statements. These statements are not guarantees of the Company's future performance. These forward-looking statements relate to the Company's future prospects, developments and marketing strategy and are based on analyses of earnings forecasts and estimates of amounts not yet determinable. Forward-looking statements are subject to a variety of risks and uncertainties as they relate to future events and are dependent on circumstances that may or may not materialize in the future. Pixium Vision draws your attention to the fact that as forward-looking statements cannot under any circumstance be construed as a guarantee of the Company's future performance and that the Company's actual financial position, results and cash flow, as well as the trends in the sector in which the Company operate may differ materially from those proposed or reflected in the forward-looking statements contained in this document. Furthermore, even if Pixium Vision's financial position, results, cash-flows and developments in the sector in which the Company operates were to conform to the forward-looking statements contained in this document, such results or developments cannot be construed as a reliable indication of the Company's future results or developments. The Company does not undertake any obligation to update or to confirm projections or estimates made by analysts or to make public any correction to any prospective information in order to reflect an event or circumstance that may occur after the date of this presentation. A description of those events that may have a material adverse effect on the business, financial position or results of Pixium Vision, or on its ability to meet its targets, appears in the sections "Risk Factors" of its "Document de Base" filed with the French Autorité des Marchés Financiers. By attending this presentation or accepting this document, you agree to be bound by the foregoing restrictions set out above.

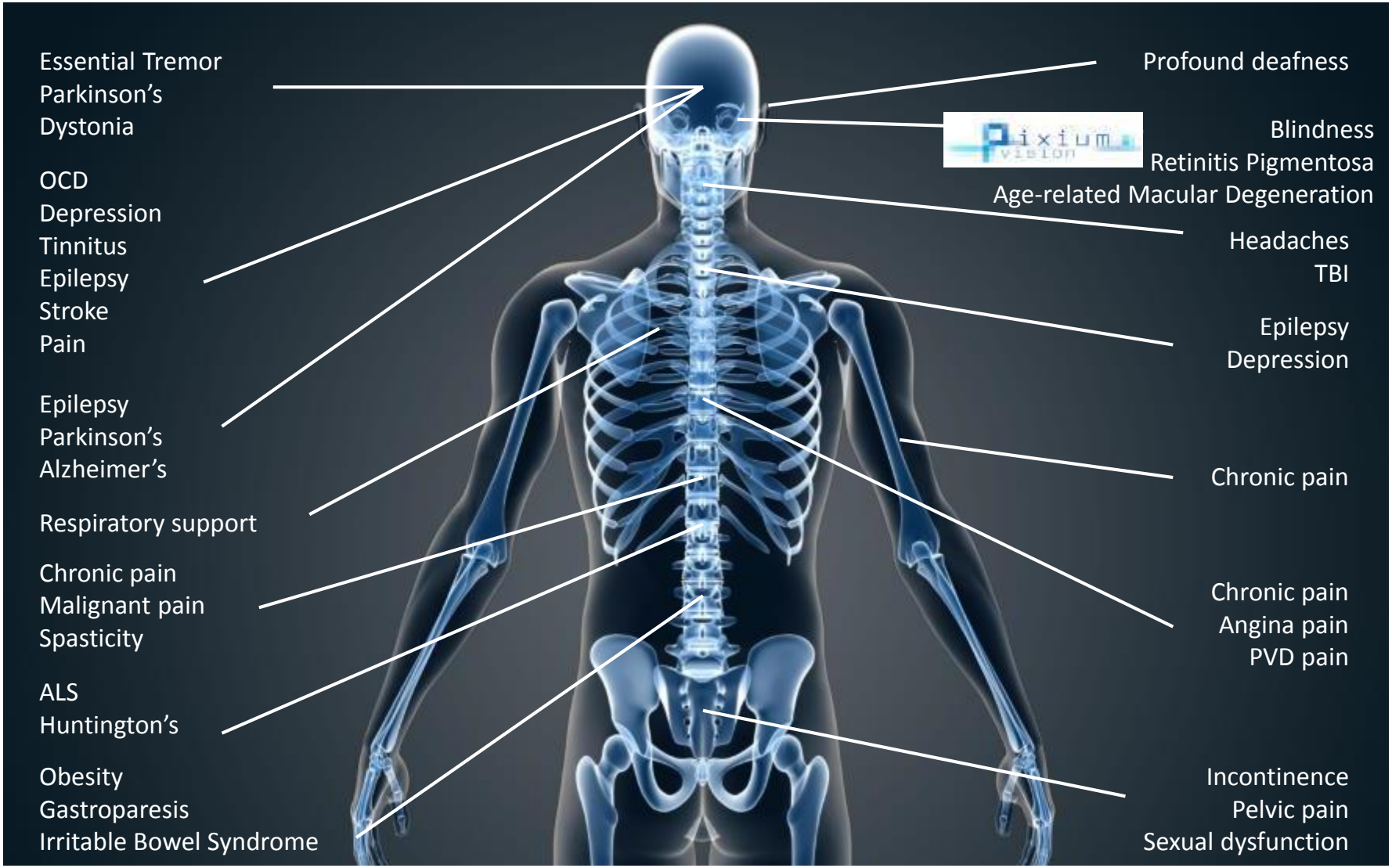
# Pixium Vision: our mission


To provide the best-in-class vision restoration systems enabling the blind to regain greater autonomy



Pixium vision

# Pixium Vision, pushing new frontier of “neuro-ophthal-modulation”




Induction of biological responses from electrical stimulation on nerves or zone where nerve activity is affected

# An experienced management team

**Bernard Gilly,** *Chairman*

- 20+ years experience in the lifesciences sector
- Fovea Pharma (2005-2009) Chairman & CEO - sold to Sanofi
- Sofinnova (2000-2005) - Managing Partner
- Transgene (1992-2000) - Chairman & CEO

**Khalid Ishaque,** *CEO*

- 20+ years experience in the medtech industry in neuromodulation
- Boston Scientific (1997-2014) - General Manager Neuromodulation International

**Pierre Kemula,** *CFO*

- 14 years experience in Corporate Finance / Financial Markets
- Ipsen - VP IR, Finance & Treasury
- Strategy Consulting (Bossard; Roland Berger)

**Guillaume Buc,** *CTO*

**Robert Hill,** *COO*

**Sylvie Murgo,** *IP Director*

# Pixium Vision

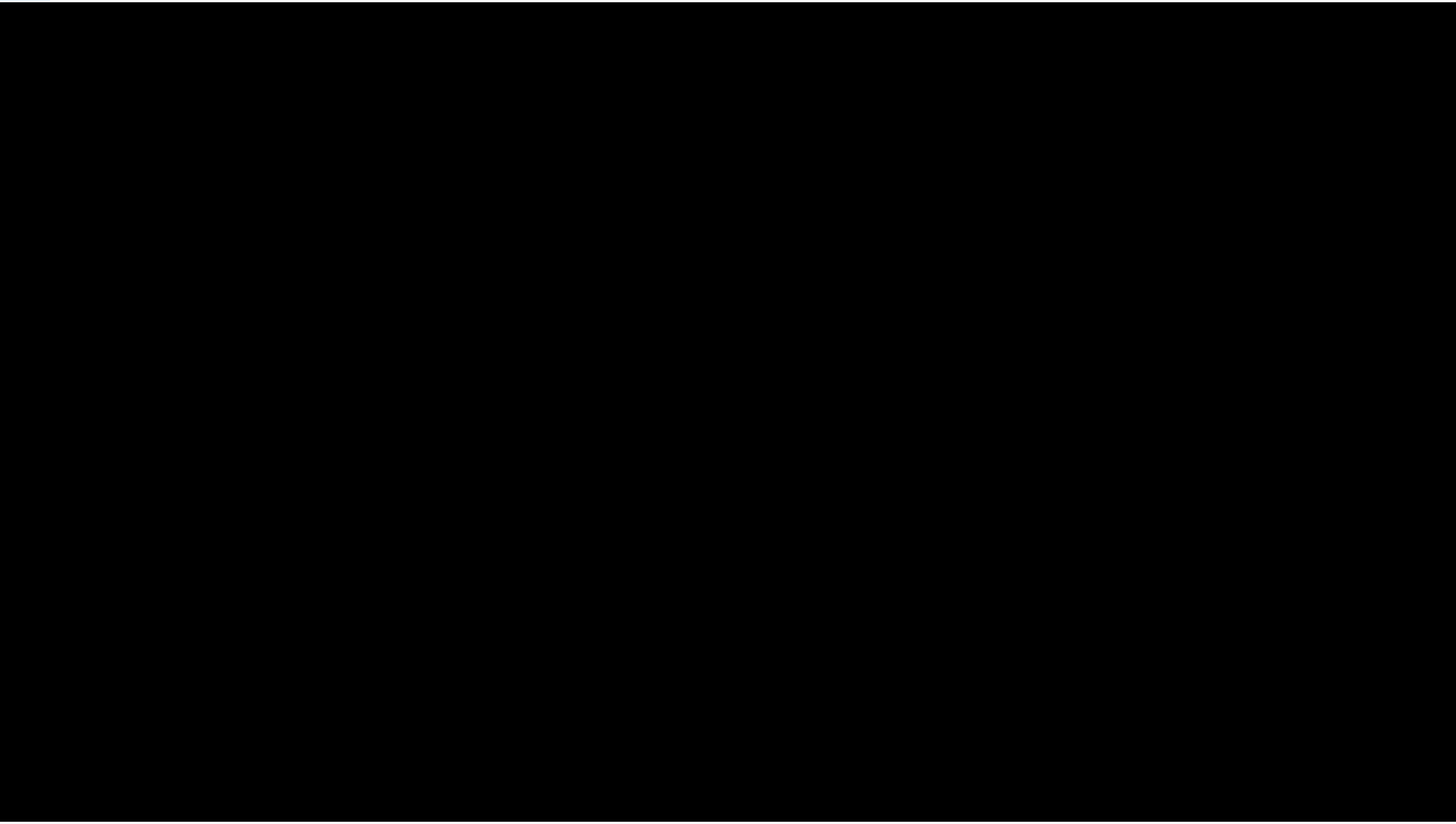
1. The only company with 2 proprietary retinal implant systems
   - An eco-system of global scientific & technological excellence
   - Intellectual Property & Know-How : Over 250 patents
2. Attractive adressable >1 Billion Euro + market opportunity*
3. Two differentiated systems:
   - IRIS® system close to commercialization for Retinitis Pigmentosa (RP)
   - PRIMA to expand the market opportunity with AMD
4. Experienced and dedicated management executing the strategy

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

* Company Estimate

Imagine how much blind people miss out on…

# Progress 15-17 months Observations



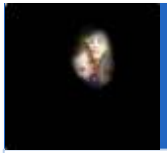
# Blindness

*Costs and target pathologies*

# Solving blindness from macular degeneration: a major market opportunity

## Blindness epidemiology

- 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



## Retinitis Pigmentosa (RP)

- Genetic disease ~ 1/4000
- 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

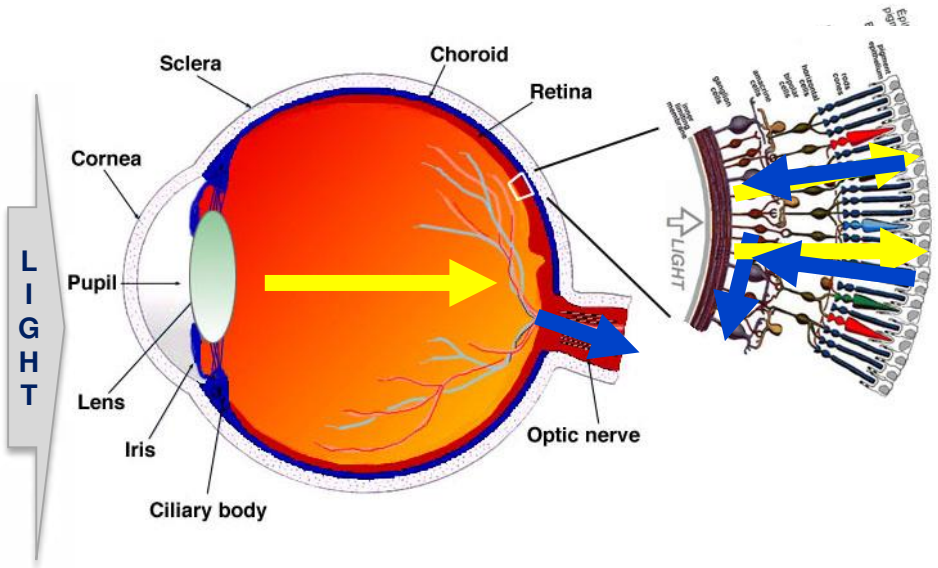
**Retinitis Pigmentosa is Pixium Vision's initial target market**

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)

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

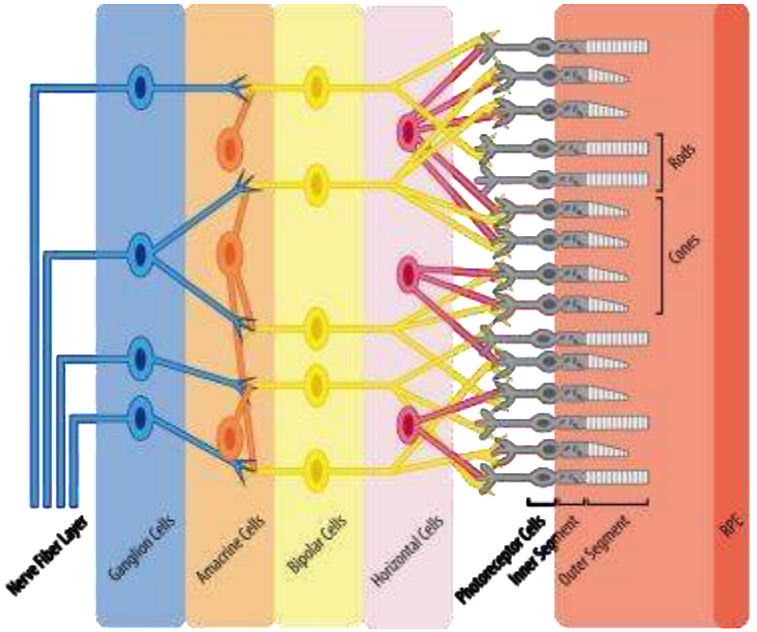
# The loss of the photoreceptor function is a major cause of blindness

## The eye transforms light into electric signals




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

## Photoreceptor degeneration does not affect the rest of the retina




- 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**

## Pixium Vision

*The convergence of excellence providing a solid intellectual property*

# Pixium Vision systems are supported by global expertise, resulting in a strong patent position

| | | |
|---|---|---|
| Optics<br>Image Capture | • Physics | INSTITUT DE LA VISION |
| Image Processing<br>Algorithms | • Mathematics / Robotics<br>• Neuro-physics | UPMC SORBONNE UNIVERSITÉS |
| Visual Processing | • Ophthalmology<br>• Electrophysiology | cnrs, Inserm, QUINZE-VINGTS |
| Micro-engineering and Micro-electronics | • Optronic | SALK INSTITUTE Where cures begin. |
| Ocular Surgery | • Retinal Surgery | Fondation Ophtalmologique Adolphe de Rothschild |
| Rehabilitation | • Neuronal computation | STREETlab |

Pixium Vision

**Pixium Vision has built a strong Intellectual Property & Know-How with more than 250 patents**

# Pixium continues to strengthen its IP position

## New initiatives

- **7** patents granted with IRIS® since January 2015
- **5** new patent applications filed on both IRIS® and PRIMA further strengthen the portfolio

## Defensive

The company strives to protect its competitive patent position with:

- **1** patent maintained in Europe following opposition claim by a competitor
- **2** US competitor European patents revoked following successful oppositions led by Pixium Vision

**Supporting the technology development and industrialization**

Pixium vision

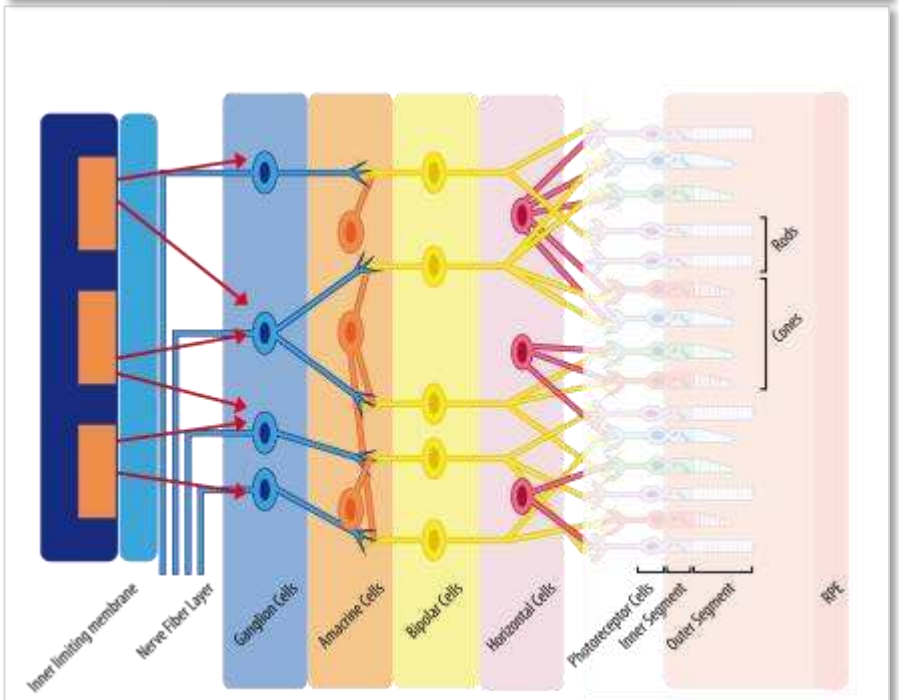
pixium vision

# IRIS®

*A state of the art Vision Restoration System*

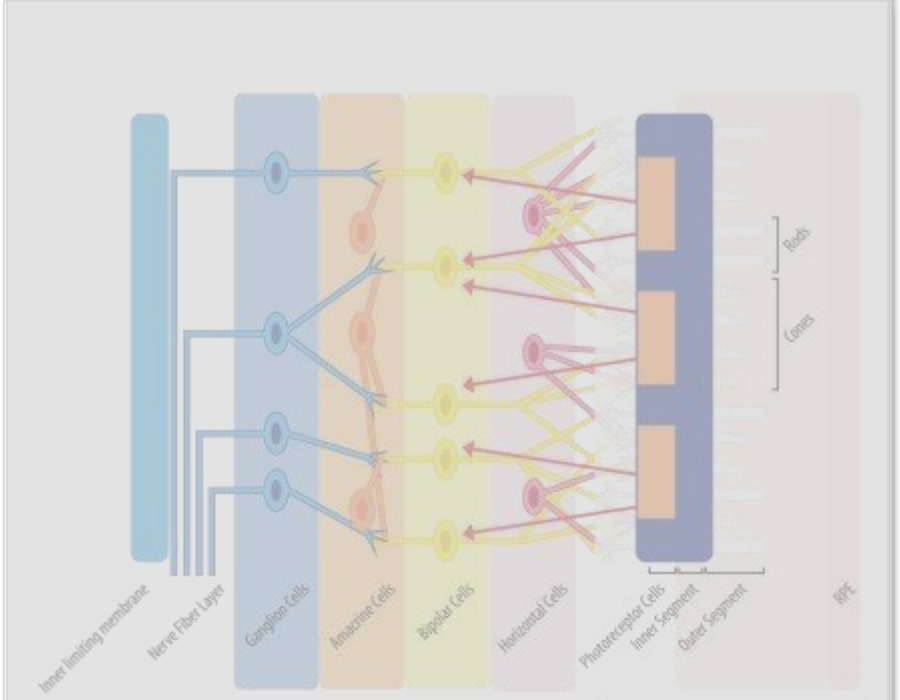
# Pixium Vision, the only company to develop two proprietary retinal implant systems

## EPI-RETINAL STIMULATION



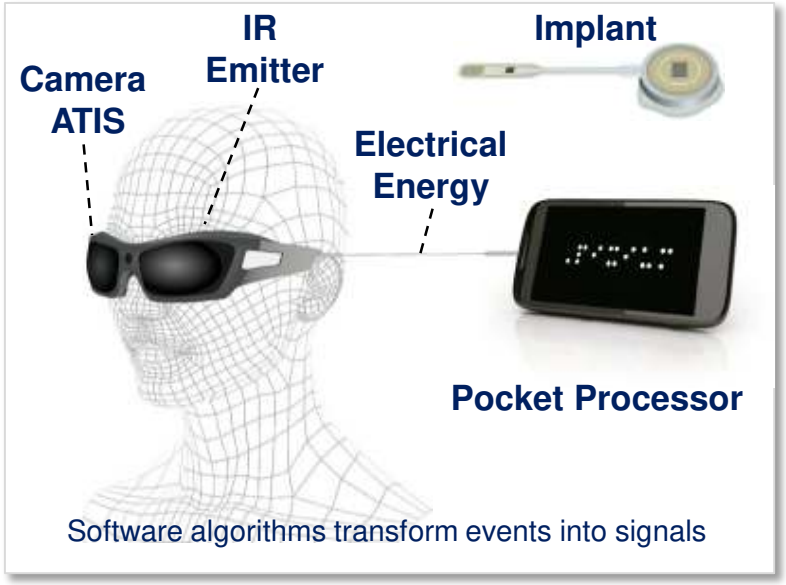

**IRIS®**

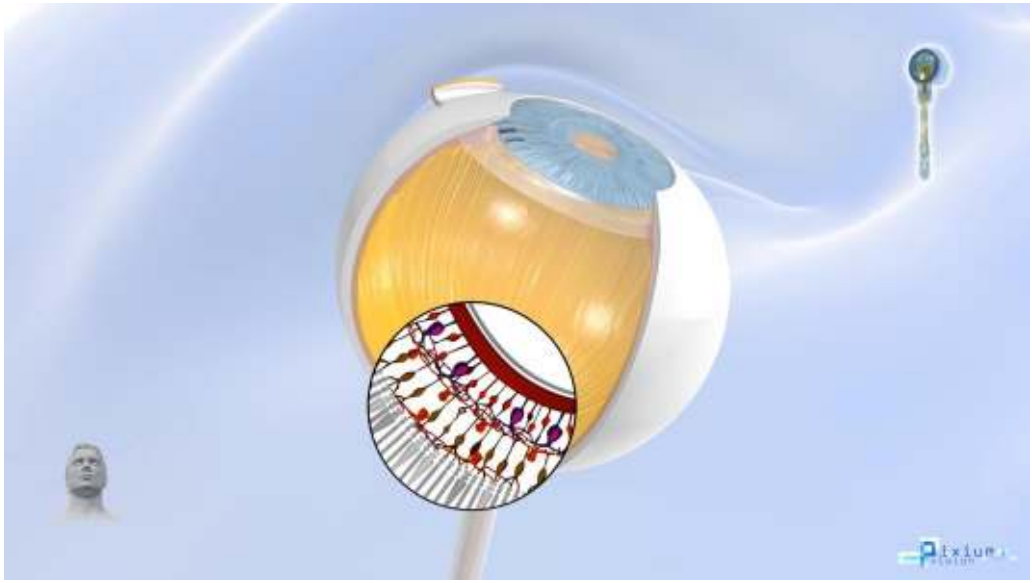
## SUB-RETINAL STIMULATION



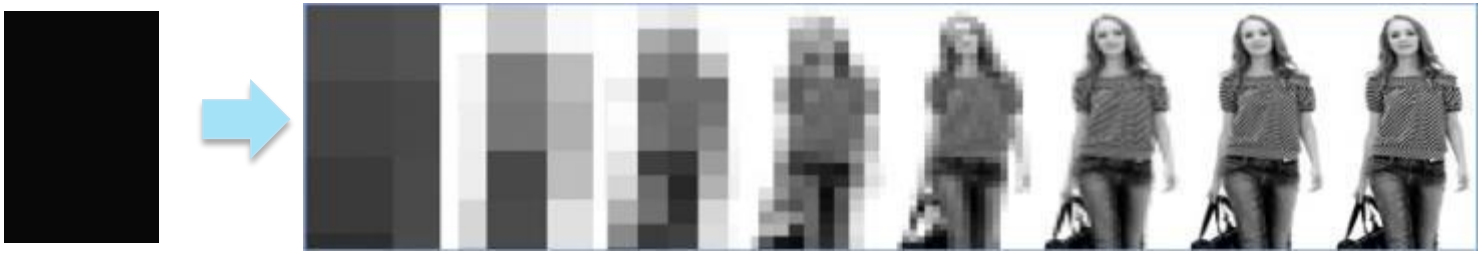

**PRIMA**

# IRIS®, a technically advanced system targeting Retinitis Pigmentosa



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



# IRIS® : A technically advanced and differentiated VRS

| | Device Features | IRIS® | Main Competitor | IRIS® Advantage |
|---|---|---|---|---|
| Technology | Camera | Neuromorphic Event Based  | Frame Based | How the human brain works |
| | Patient Programming - Tuneability | Yes | No | All patients respond and learn differently; IRIS is flexible to patient needs |
| | Number of Electrodes | 150 electrodes | 60 electrodes | Allow smarter stimulation combinations |
| Surgery | Surgical Procedure | 2.5 hours | Up to 4 hours | Easier to implant; |
| | Explant and Replacement | Yes | Replacement not proven | Technology is always evolving and improving; patients need the option of upgrading to new technologies in the future |

# IRIS®, illustration of smart design

| Pixium Vision | Competitor |
| --- | --- |
| Proprietary epi-retinal tack that allows release of implant on the retina i.e. explantation | Illustration of proprietary epi-retinal tack that ***does not*** allow explantation |

Silicon ring (not fitted here) allows release of intra-ocular implant section

Spring does not allow for release of intra-ocular implant section

**Patented : a key feature alloying patients to replace / upgrade**

# IRIS®: A clear path to market

*Aiming for a leading market position*

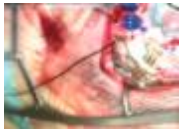
# IRIS® : Continue to build evidence for CE Mark

## 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

**Implantation Surgery** → **Implant Activation (after 4 weeks)** → **Rehabilitation Program** → **CE Mark filing Q4 2015**



CE

## Clinical Centers

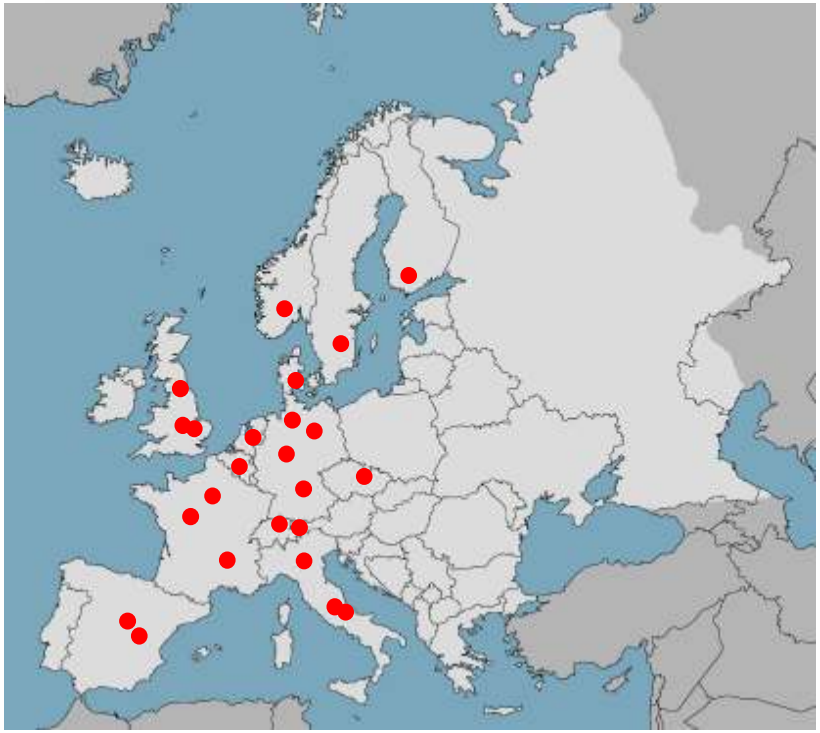
- **Paris & Nantes**
- **Graz**
- **Hamburg & Bonn**

## 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

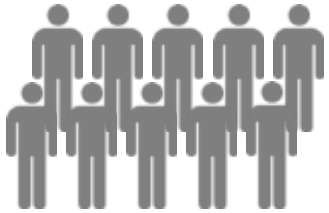
**Sales team to reach a peak of 2 to 3 team members per country & sales admin employees**

* Company Estimate

# IRIS® path to the US market

**1**

## Gather results from European clinical trial



**2**

## File an Investigational Device Exemption (IDE)

- Pre IDE planed for 2015
- IDE for 2016
- 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 2019

# IRIS® pricing and reimbursement drivers

**Cost of blindness**

**Competitor reimbursement benchmark**

 €78,000

 €100,000

 €96,000

 $144,000

 Approved & reimbursed

**Quality of clinical data**

**Comparative MedTech therapies**

**and software improvement**

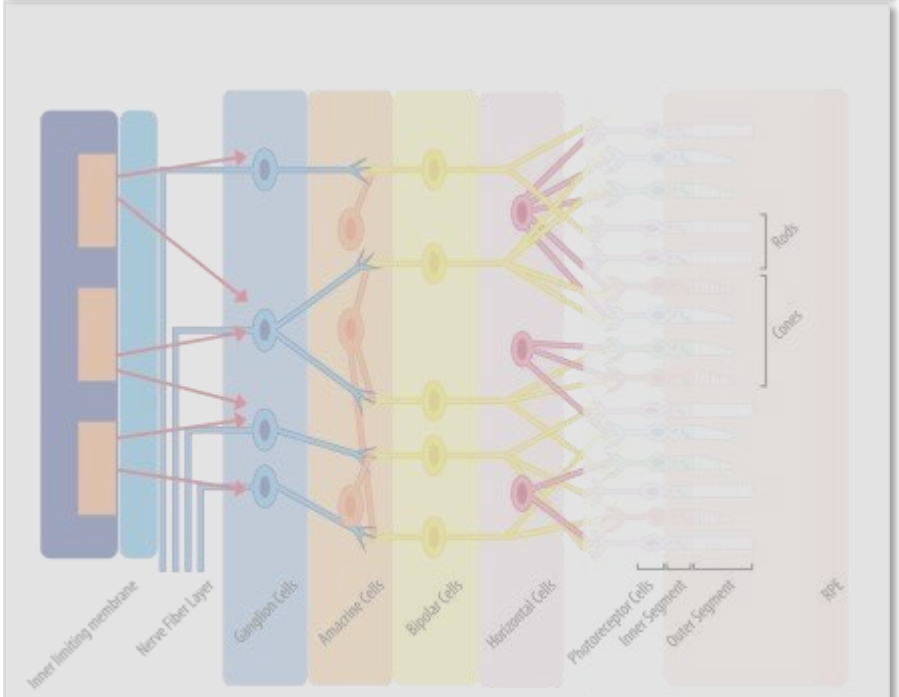
**Pricing & Reimbursement Drivers**

# PRIMA Vision Restoration System

*Building on IRIS® leading market position*

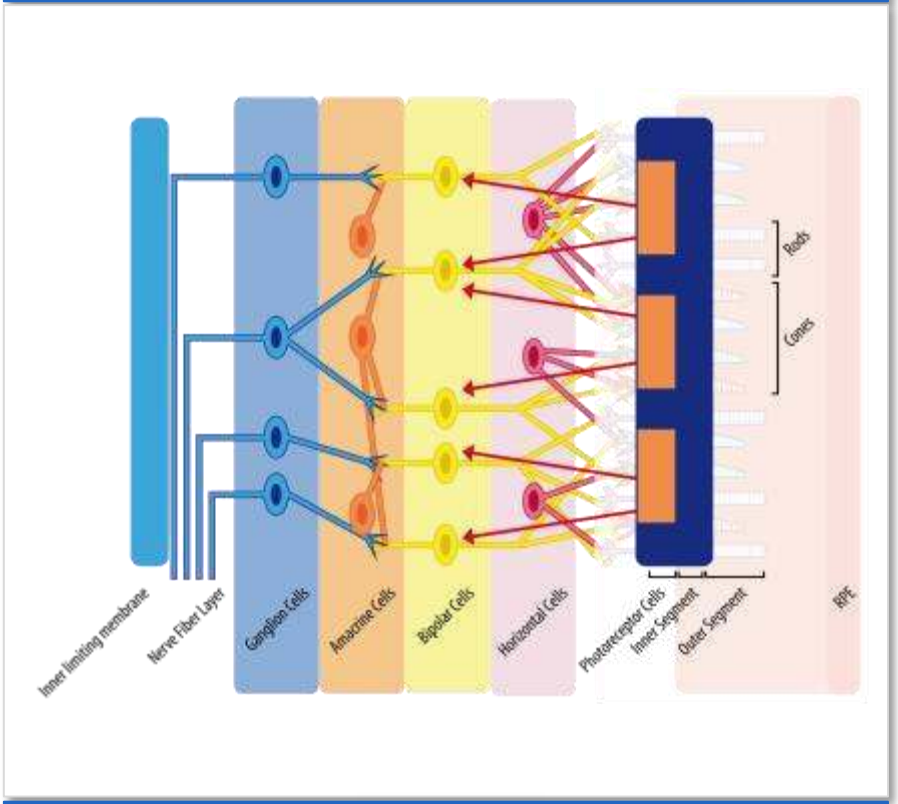
# Pixium Vision, the only company to develop two proprietary retinal implant systems

## EPI-RETINAL STIMULATION




**IRIS®**

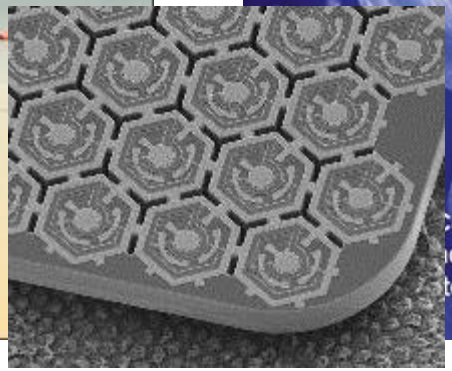
## SUB-RETINAL STIMULATION

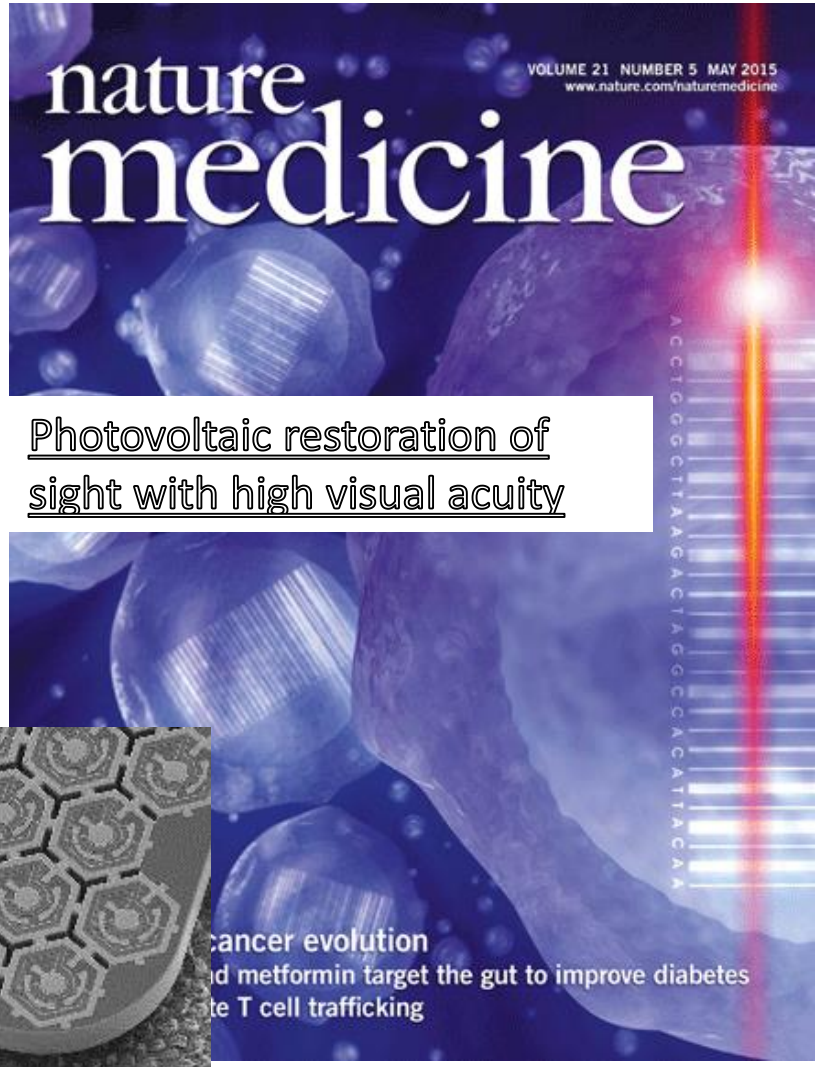



**PRIMA**

# Treating Macular Degeneration AMD :

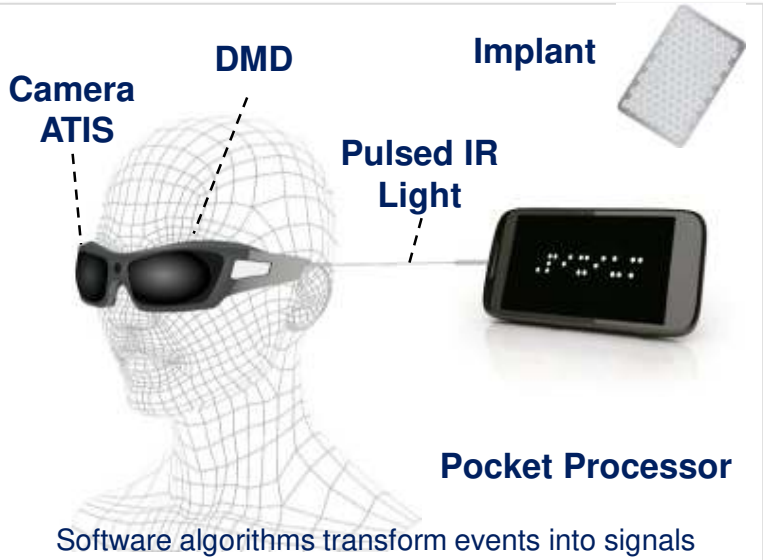
***"Tiny implantable solar panels could help the blind see one day"***

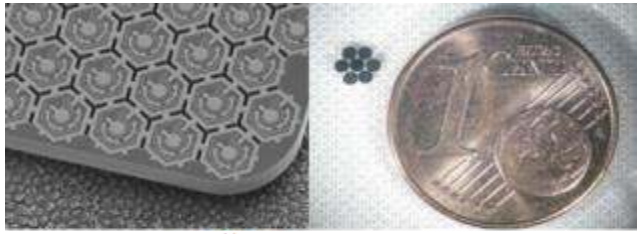


# The PRIMA System, more optimal approach for AMD

A technically advanced system designed to deliver further clinical benefits

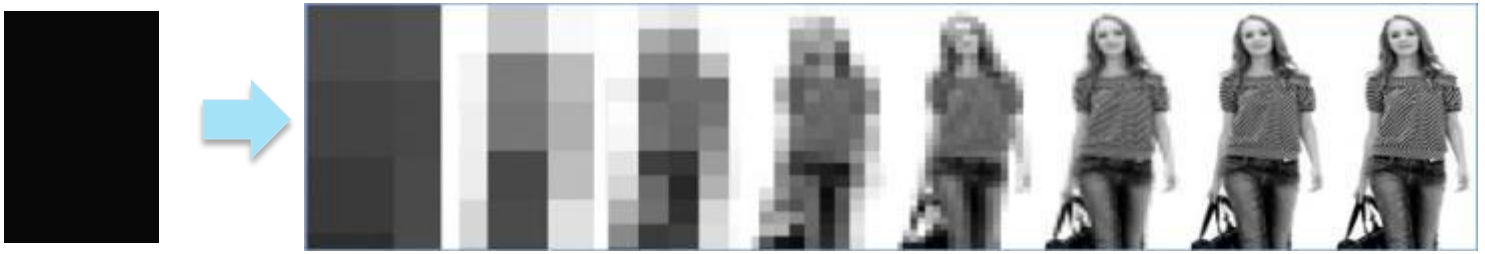



Software algorithms transform events into signals



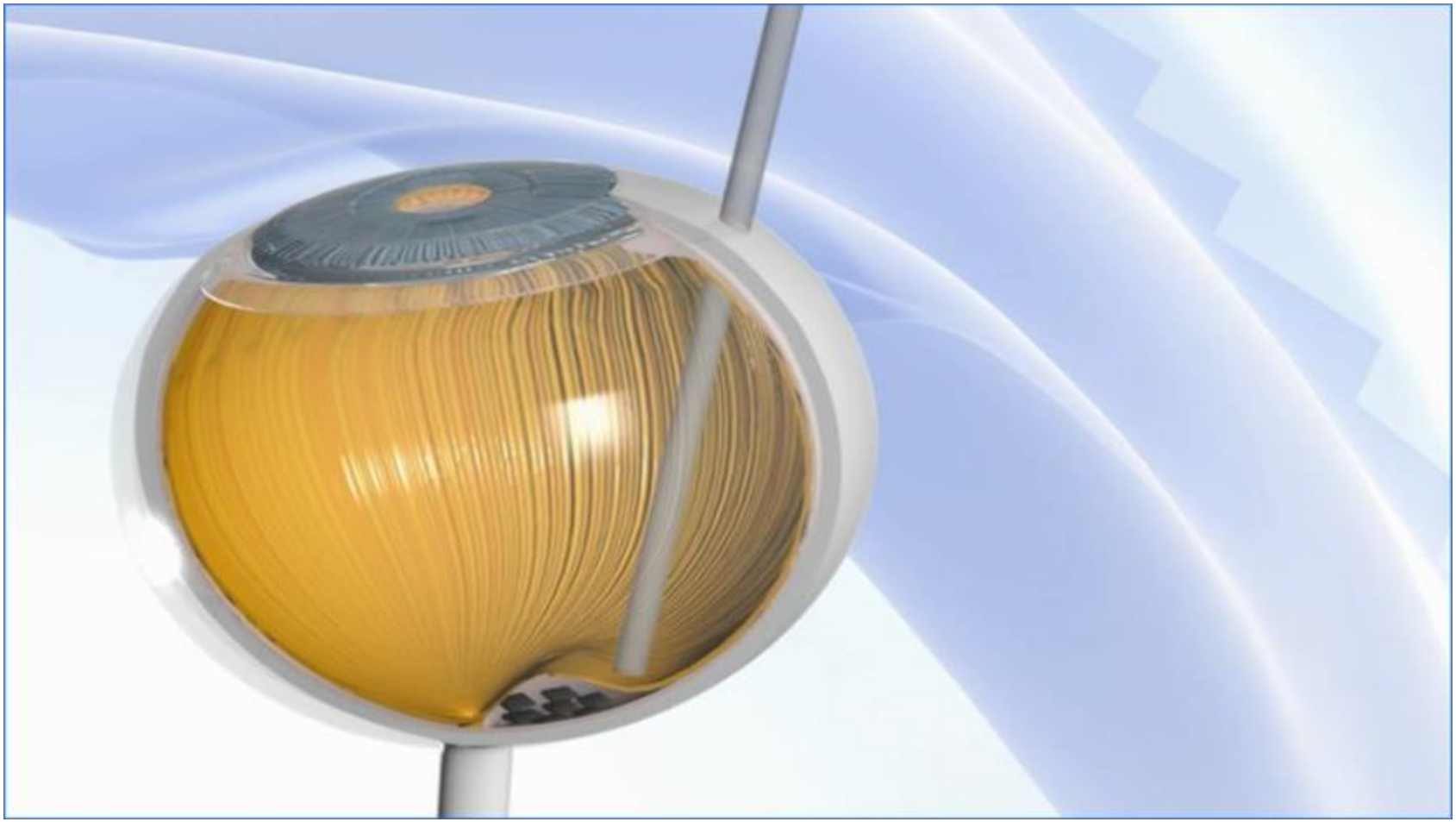

- Physiological signal processing
- Simpler and shorter surgical procedure
- Retinal chips in modules up to several 1000 electrodes
- Advanced processing algorithms
- Reduced energy requirements enabling miniaturization of components

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

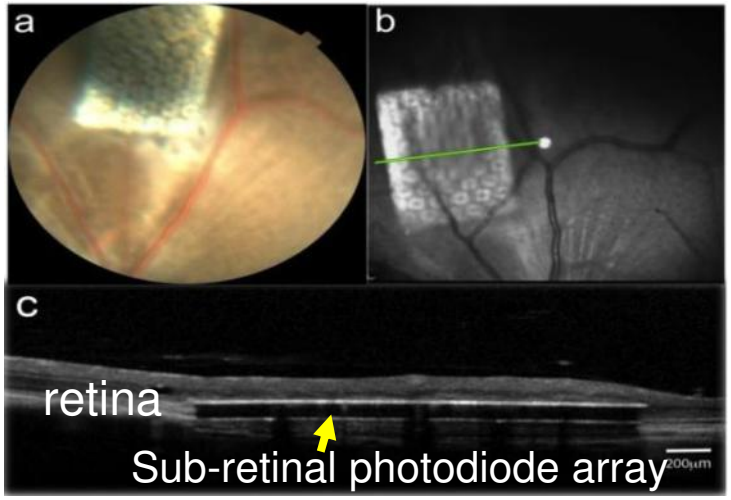


# PRIMA, a sub-retinal implant

Prima to directly stimulate the retinal cells that were directly connected to the photoreceptors

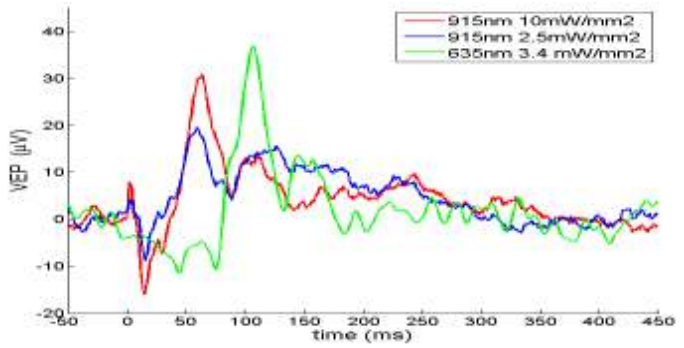


# PRIMA: Validated in pre-clinical models

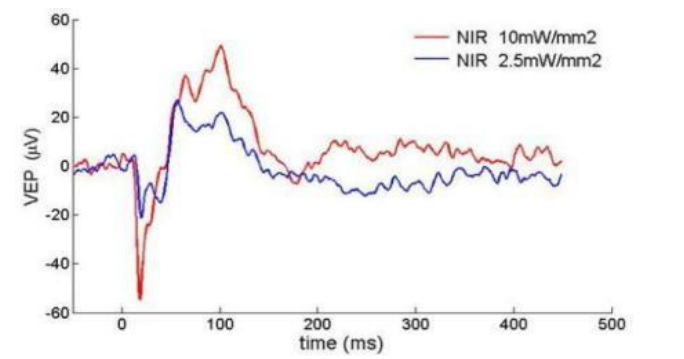



- Proof of concept achieved in rats
- Safety demonstrated in rats and pigs
- Scale-up of manufacturing process ongoing
- First in man expected in 2016

**Visual Evoked Potential: Normal rats ***



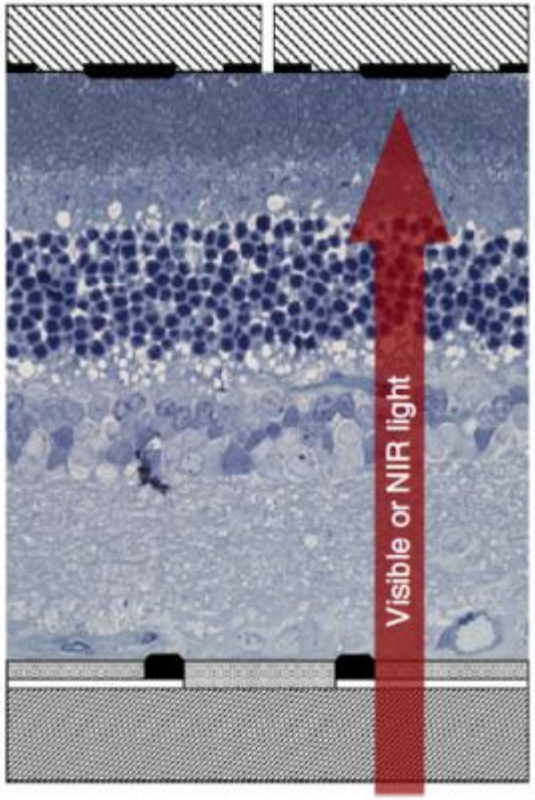

**Visual Evoked Potential: Blind rats ***




- Ref: *J. Neural. Eng* 9: 046014(2012)
- IEEE EMBS Neural Engineering Conference 22 April 2015
- Nature Medicine (2015) doi:10.1038/nm.3851 http://www.nature.com/nm/journal/vaop/ncurrent/full/nm.3851.html

# PRIMA rat data, published in Nature Medicine, show restoration of half of normal visual acuity

- 70 μ m-wide pixels provide **highly localized stimulation** of retinal neurons in rats
- Electrical receptive fields recorded in retinal ganglion cells were **similar in size to the natural visual receptive fields**
- Similarly to normal vision, the retinal response to prosthetic stimulation exhibited:
  - flicker fusion at high frequencies
  - adaptation to static images
  - nonlinear spatial summation



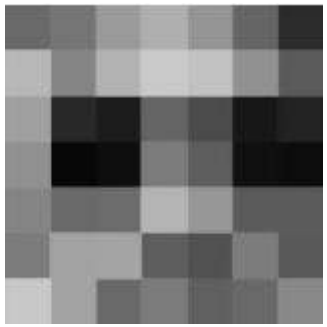

**Healthy rat retina sandwiched between a transparent MEA which records electrical field at the ganglion cell layer (GCL) level**

In rats with retinal degeneration, PRIMA elicited retinal responses with a spatial resolution of 64 ± 11 mm, corresponding to ***half of the normal visual acuity in healthy rats***

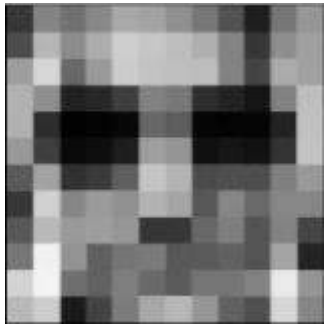
# In short

# Pixium Vision Creating a world of Bionic Vision

IRIS 50



IRIS 150



PRIMA 1 chip
400 electrodes

PRIMA 4 chips
1600 electrodes

***Today IRIS***

- Epi-retinal implant in clinical with novel proprietary Neuromorphic sensor
- Toward Higher Resolution 150 electrodes

***Commercial Launch : 2016 in EU***

***Tomorrow PRIMA***

- Sub-retinal implant with proprietary passive wireless microphotodiodes
- Toward Facial Recognition

***First in man : 2016***

Pixium vision

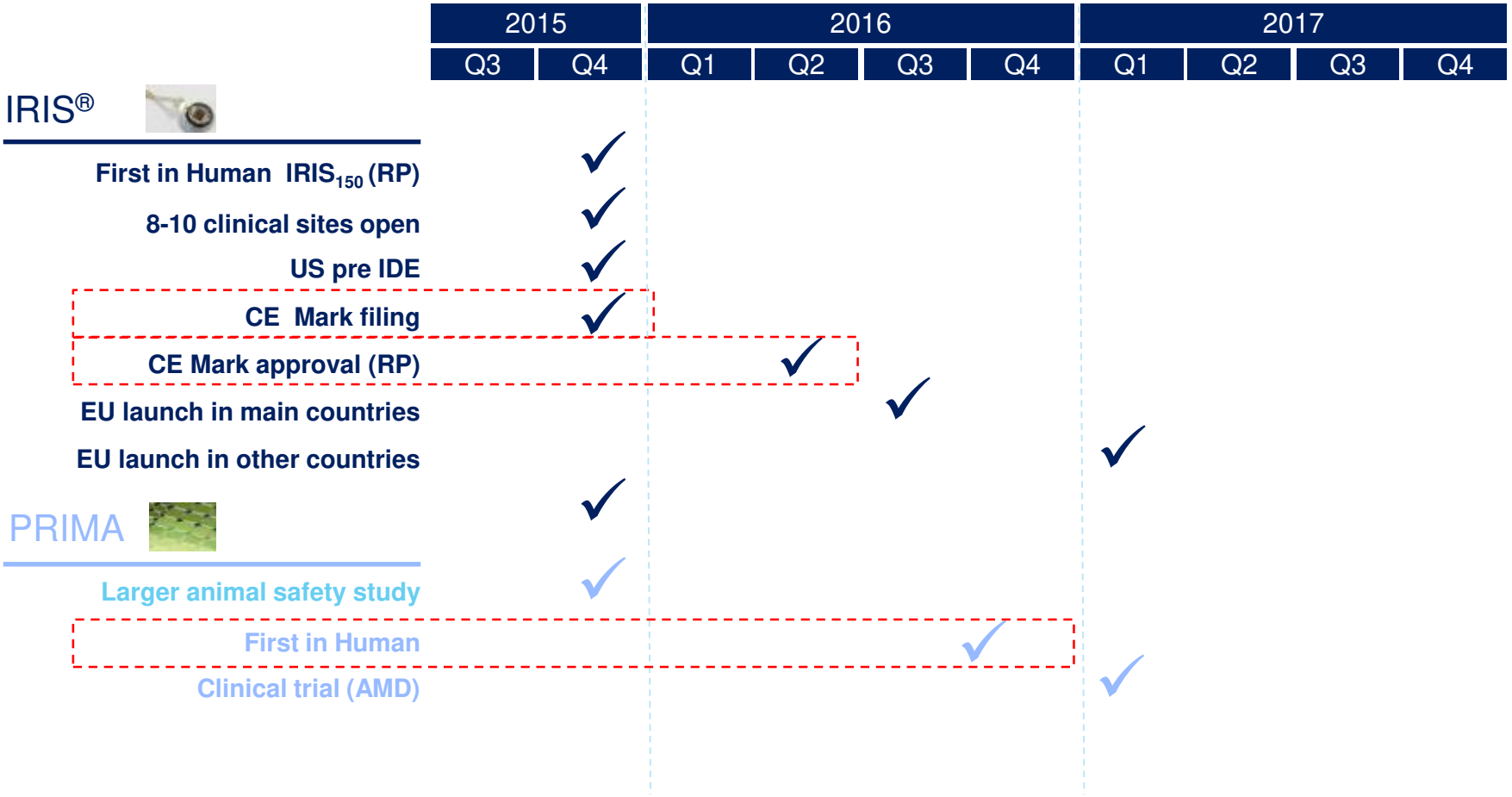
# Giving sight, giving life : making an impact in lives of people who have lost their sight

# Continuing to move forward, more to come

# Focus on project execution

| IRIS® | PRIMA | Pixium Vision |
|---|---|---|
| ✓ Iris® $_{150}$ manufactured and being validated | ✓ Technology transfer complete | ✓ Management team complete |
| ✓ Simpler design | ✓ Animal data published in Nature Medicine April 2015 | ✓ ISO 13485 approved |
| ✓ Additional clinical sites recruiting | ✓ Tests started on larger animals | ✓ Moved to new premises |
| ✓ Patent opposition wins | ✓ On track for first-in-man in 2016 | |
| ✓ Externals industrialization | | |
| ✓ Pre IDE preparation | | |

# Pixium to file IRIS® CE mark in Q4 2015; Prima first in Human in 2016




**Multiple major value-creation milestones anticipated in the coming months**

# 1H 2015 - Update

# Strong cash position with €31m in cash at June 30, 2015

***P&L summary***

| *in thousand euros* | **H1 2015** | **H1 2014** |
|---|---|---|
| Operating income / other income | 1 737.7 | 1 104.1 |
| Research and Development | (7 999.1) | (4 510.6) |
| General and Administrative | (1 766.5) | (930.1) |
| Operating income | (8 027.9) | (4 336.5) |
| Net profit | (7 953.8) | (4 325.7) |
| *Earnings per share* | *(0.63) €* | *€ (0.62)* |

***Cash flow statement summary***

| *in thousand euros* | ***H1 2015*** | ***H1 2014*** |
|---|---|---|
| *Opening cash and cash equivalents* | *42 131.7* | *9 420.2* |
| *(Decrease) / Increase in cash position* | *(11 050.6)* | *32 383.4* |
| *O/W net cash flows from operating activities* | *(9 504.2)* | *(4 530.1)* |
| *O/W net cash flows from investing activities* | *(1 571.6)* | *(1 629.1)* |
| Closing cash and cash equivalents | 31 081.2 | 41 803.6 |

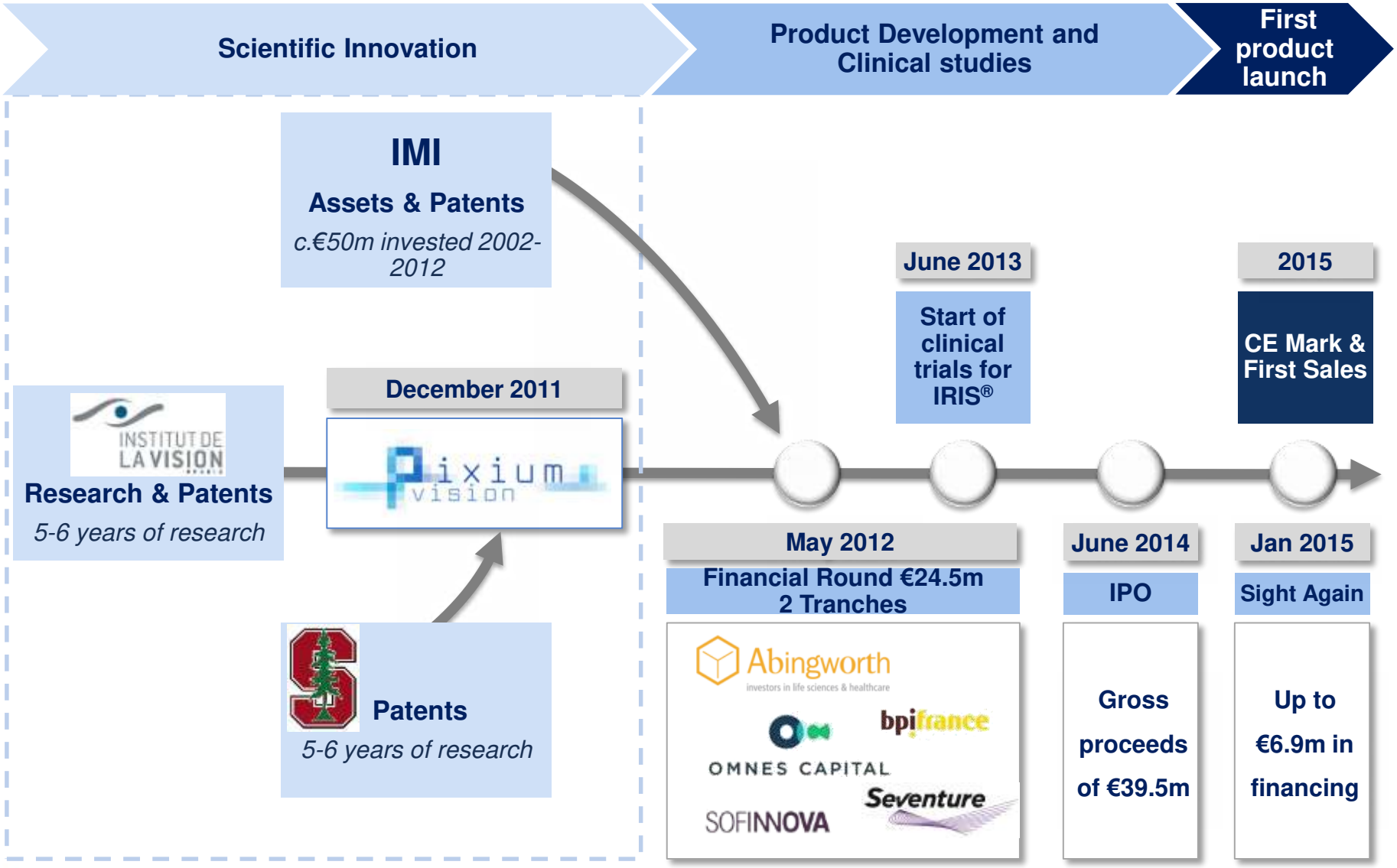
# Thank You

www.pixium-vision.com

**@PixiumVision**

**#PixiumVision**

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



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

**What is Neuromodulation?**

- Induction of biological responses from electrical stimulation on nerves or zone where nerve activity is affected
- $5Bn+ market by 2018 implying a high double digit growth rate (around 15%)

| Pathology/ Indication | Neuromodulation Technique | US *net** prevalence |
|---|---|---|
| **Deafness** | Cochlear Implants | 1,000,000 |
| **Parkinson's Disease** | Deep Brain Stimulation | 216,000 |
| **Depression** | Vagas Nerve Stimulation<br>Deep Brain Stimulation | 775,000 |
| **Blindness** | Vision Restoration Systems | ~175,000 RP<br>~ 200,000 AMD |

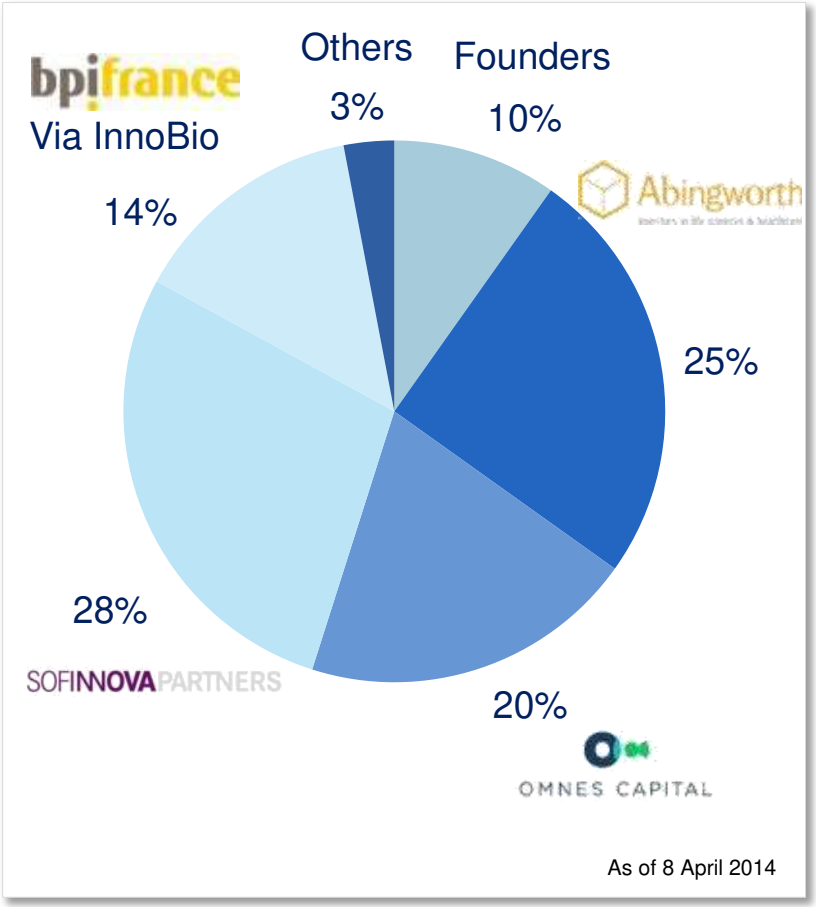
Source: NIH US Net prevalence patient data
US net* prevalence : patients eligible to implants

**Existing therapies**
**Emerging therapies**

# Shareholder structure

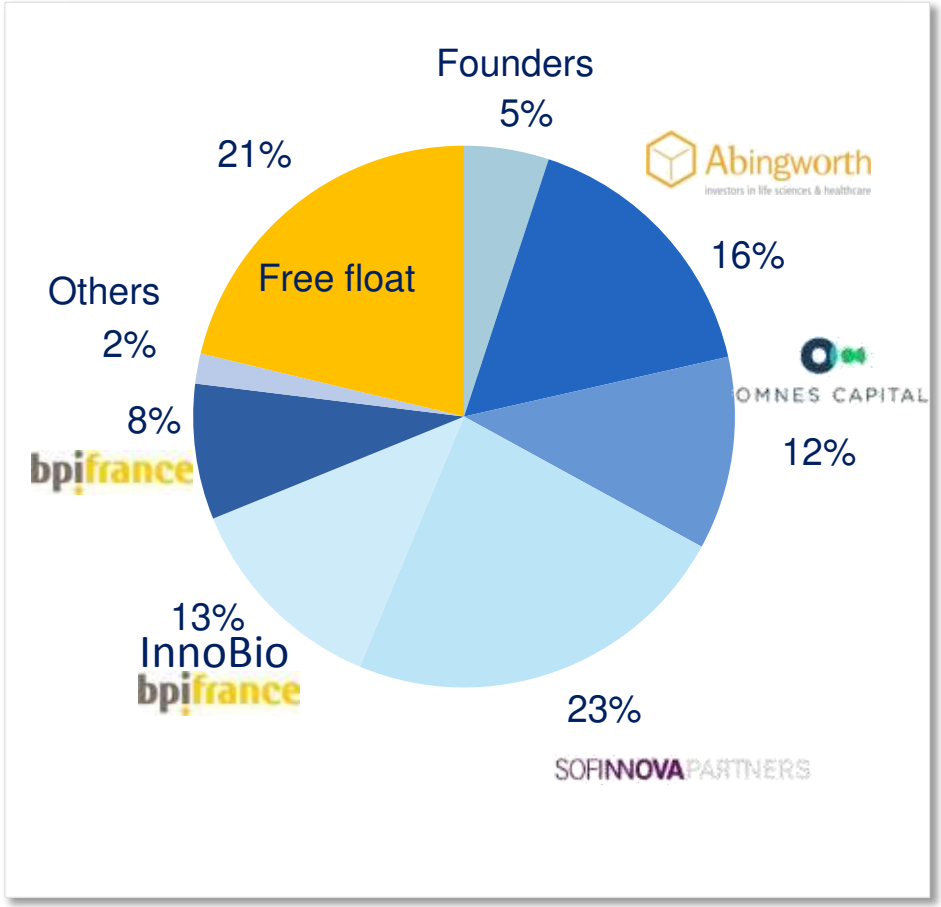
## Pre-IPO shareholder structure

*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 |
|---|---|---|---|---|---|
| Pixium Vision | • IRIS® : 50 to 150<br>• PRIMA : up to 5000 | • IRIS®: Epi-Retinal<br>• PRIMA: Sub-retinal | • 2h surgery<br>• Explantable<br>• Neuromorphic Camera<br>• Tunable software | • Short term study on 19 patients<br>• 10 Patients CE mark study ongoing | • CE Mark filing end of 2014 |
| Second Sight | • Argus II : 60 electrodes | • Epi-retinal | • CMOS camera | • Argus I: 6 patients<br>• Argus II: IDE on 30 patients | • Argus-II CE Mark Feb 2011<br>• FDA HDE Feb 2013 |
| retina implant | • Alpha IMS | • Sub-Retinal | • Visual field of 12°<br>• Non explantable | • 11 patients from 2005 to 2009<br>• 30 patients CE mark | • CE Mark July 2013 |
| NanoRetina | • 500 electrodes | • Insufficient data | • No camera | • Launch scheduled for 2016 | • Pre-clinical phase |