



## **OIDIPUS**

**From an old Greek tragedy  
to a contemporary consortium**

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Stefan Nemeth, Urbain Van Bogget, Bob Grietens**

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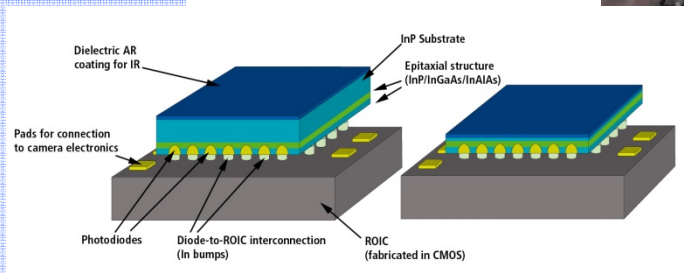
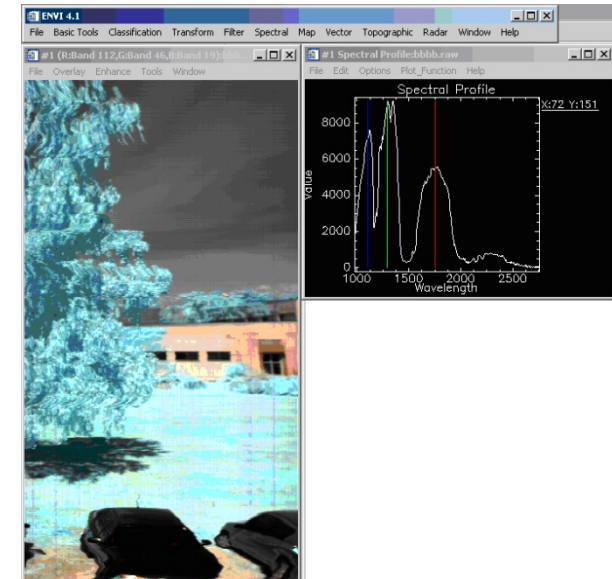
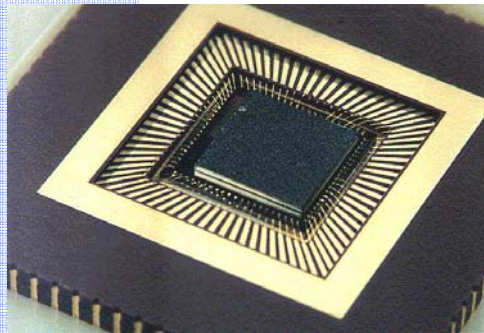
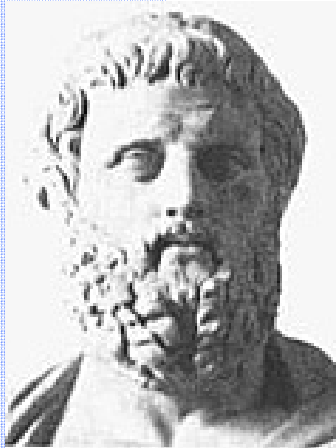
# Outline

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- Project : Goal
- The consortium
- The results
- Example: the Cheetah camera
- Additional business development
- Conclusions

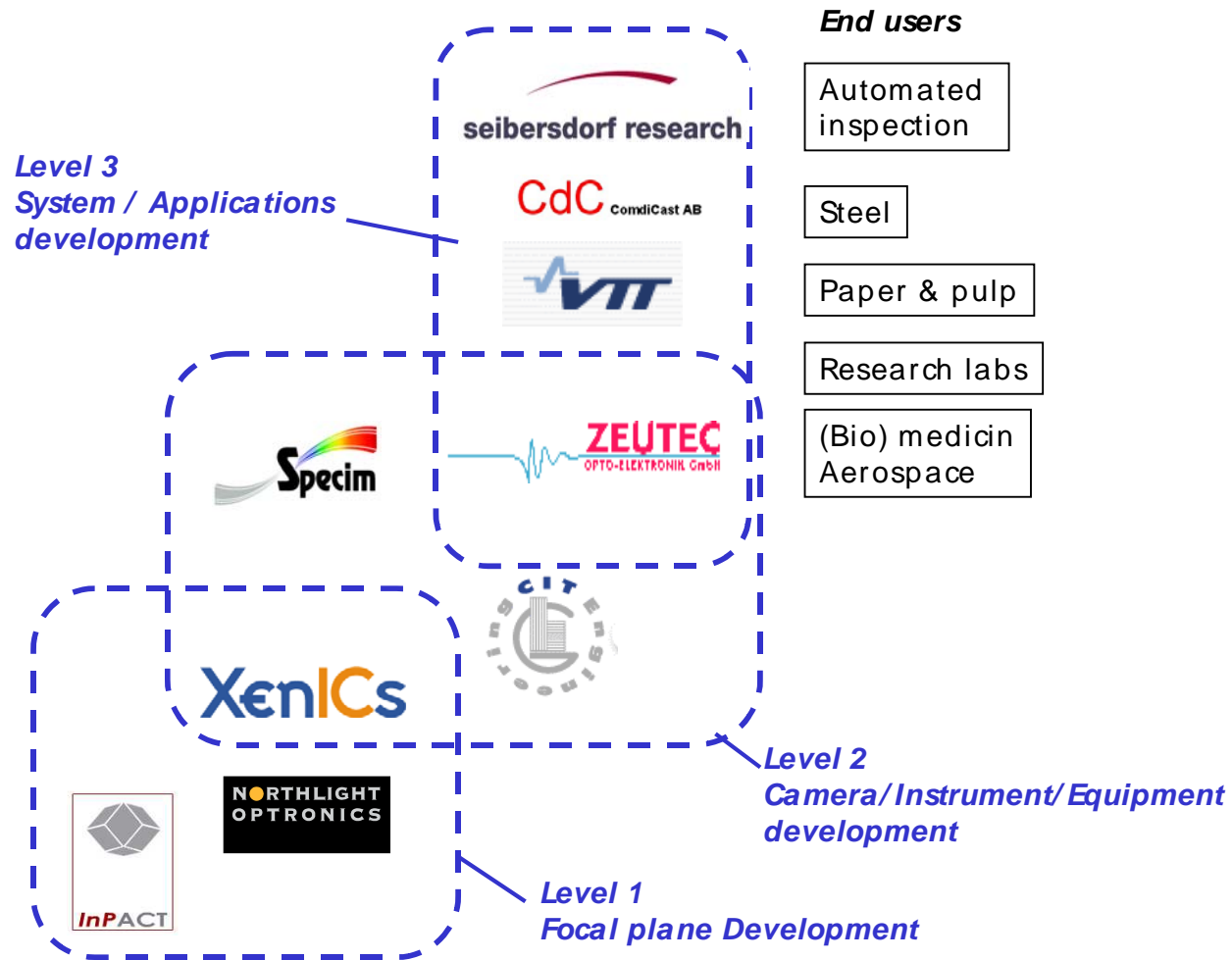
# OIDIPUS

Optimised InGaAs Detectors for Imaging applications and Industrial Spectroscopy



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# The initial consortium



# The final task force

Denied:



TEKES: too applied



No money

VDM-LO (bankrupt)

seibersdorf research

CdC ComdiCast AB



XenICs



vector International



NORHLIGHT  
OPTRONICS



Partners:

IMEC (no upack – roic design collab)

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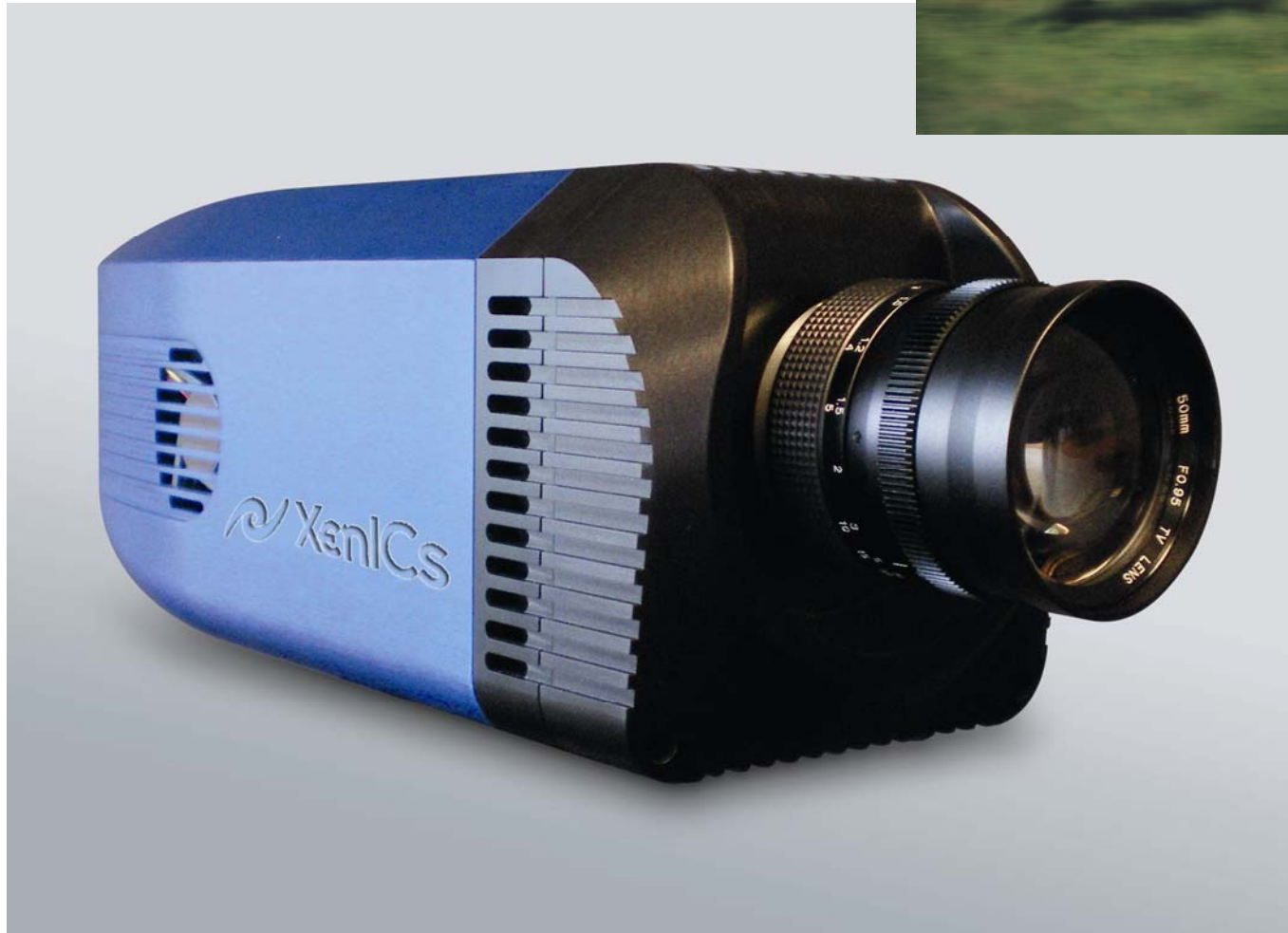
# The results: summary

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Aspect	Result
Improvement in 1.7 $\mu\text{m}$ InGaAs technology	++
Improvement in 2.5 $\mu\text{m}$ technology	0
Improvement in 1.7 $\mu\text{m}$ Focal Planes	++
Improvement in packaging	-/0
Improvement in InGaAs Cameras	++
Extension of imaging spectrometer	++
Application to steel industry	+
Application to sorting industry	++
NEW application development	++

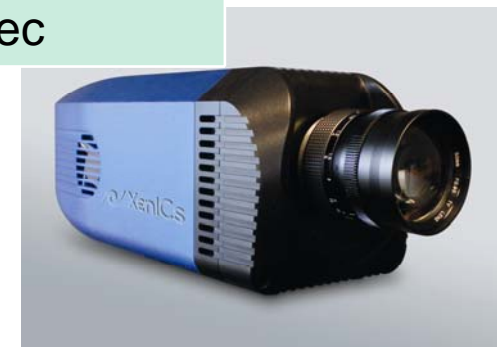
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# Cheetah the final result



# Main camera characteristics

Parameter	Value	Unit
Control and data	Gig-E	
Additional data channel	Cameralink	
Power supply	12	V
Current Incl. cooling	5	A
TEC cooling	➤270	K
Internal Memory	Max. 16	GByte
Recording time	15	sec



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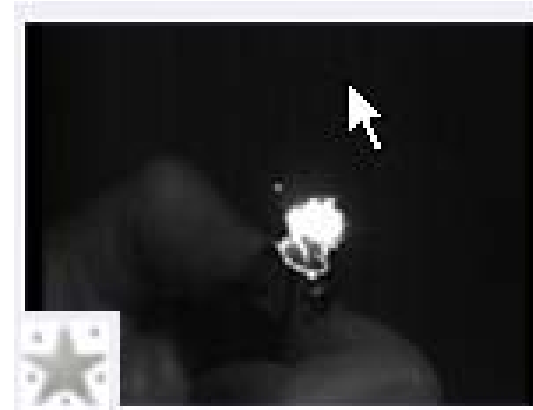
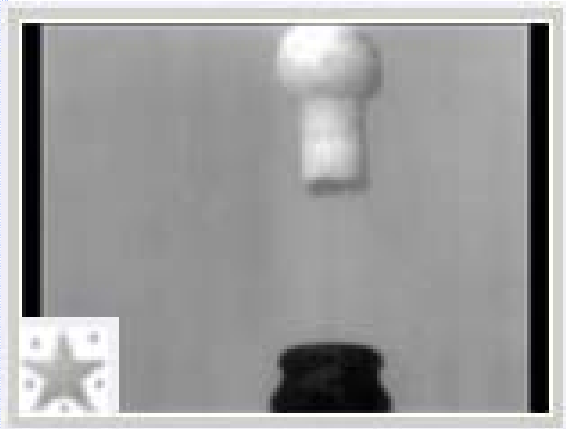
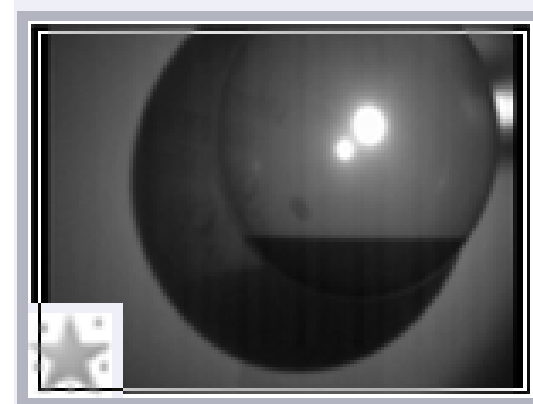
# Design details - FPA

Parameter	Value	Unit
Technology	0.35 $\mu\text{m}$ CMOS	
Vdd	3.3	V
Current 16 / 4 output mode	350 / 190	mA
Total output rate	640 / 160	MHz
Full frame rate 16 output	1740	Hz
Full frame rate 4 lines	200 000	Hz
Saturation charge HG	80 000	$e^-$
Saturation charge LG	1 000 000	$e^-$
Noise HG / LG	192 / 600	$e^-_{\text{rms}}$
Non-linearity	< 2	%



# Some fun images

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# Additional business developments

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Company	Application
Headwall - US	Remote sensing instrumentation
NEO – N	Remote sensing
	Flash detection
	3D imaging
Binder - Ö	Sorting applications
EVK - Ö	Sorting instrumentation
XenICs - B	Fast imaging
Profactor - Ö	Application development
CTR - Ö	Application development

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# Aknowledgements

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- Work performed under OIDIPUS project:
  - EURIMUS project EM-80
  - IWT Funding: 040143

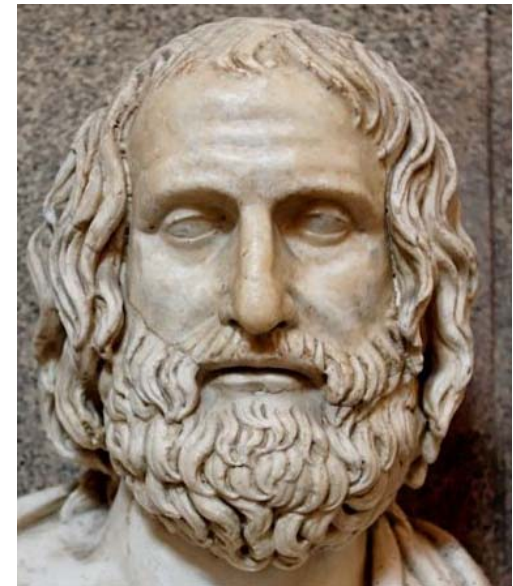
- Many thanks to the following colleagues:

Adil Sabihi, Dirk Uwaerts, Thomas Bocquet, Jonathan Cloots, Peet Verbeke



Oidipus meets Euripides !!!

Questions ???



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