ECSEL Pilot Lines Success Stories & Impact

Patrick Abraham
Public and Private Partnership Manager
Patrick.abraham@lynred.com
High volume / low cost thermal IR sensor ($\lambda=8$-12µm) for advanced presence detection (consumer market and automotive)
POLIS Goals

- **Access to standard CMOS production line for above IC µbolometer process**
  - Mineral µbolometer (BO-M) technology development
  - Mineral sacrificial layer and vapor etching
  - Validation with 80x80 25µm pixels FPA
  - 12 µm pitch ROIC design (LYNRED)

- **Collective (wafer-level) vacuum packaging**
  - Compliant with high volume production (> M of units/year)
  - Hermetic sealing under vacuum
  - Compatibility with ST H9A-ROIC CMOS, with LYNRED existing µbolometer and with new BO-M technology

- **Low-cost / high volume infrared optics**
  - Wafer-level technologies
  - 2 solutions studied: UMICORE Gasir lens and LETI Silicon lens
Key Pilot line expected benefits

Speed-up development through
• Partnership and access to new technical expertise
• Sub-contracting part of the process

« Pilot lines » added value
• Access to more mature manufacturing line (higher yield, lower cost)
• Ready for ramp-up
Main Results

1. 12 µm pixel pitch
   - Successful adaptation of the ST H9A CMOS technology to ULIS above-IC process,
   - Design and supply of a new 12µm pixel pitch ROIC,
   - First ULIS 12µm pitch products

2. WLP pilot line
   - Technology maturity improved from TRL4 to TRL6

3. POC of the BoM technology
   - Validation of the 25µm pitch BoM technology
   - Successful adaptation of the WLP process to BoM technology
   - TRL4 achieved, paving the way to the ULIS next technology

Atto320
12µm pitch
320x240 – 640x480

Atto640

DEM 2.1 with WLP packaging

Lynred
BY SOFRADIR & ULIS

Strengthen the European supply chain of Electronic Components and Systems
LYNRED next generation technologies for "no compromise" applications
(high performance, high volume, low cost)
THANK YOU
FOR YOUR ATTENTION

“All rights reserved. Contents are LYNRED property and can be changed by LYNRED at any time. The information contained herein is confidential and intended solely for the person to which it is addressed. Any copy or dissemination of the information contained herein is prohibited.”

WWW.LYNRED.COM