ECSEL in Poland.
Beginnings, opportunities, and challenges

Mateusz Bonecki, Ph.D.
Director R&D at BetterSolutions SA, ARTEMIS-IA Steering Board Member
Pomeranian ICT Cluster, established in 2009. Based in Gdańsk.

Associates 120+ members covering complete technology chain.

Recognized by the central government as “key national cluster”.

Interizon cluster was actively supporting Poland in joining ARTEMIS Joint Undertaking for the call announced in 2012.

In result, several organizations from Poland succeeded and signed JUGAs already in 2013.
Poland’s participation in ECSEL (2014-2017)

Participations per partner type:
- Large enterprise: 7%
- SME: 33%
- Research: 60%

Funding:
- Total cost: 9.4 M€
- Total funding: 8.46 M€
- Industry: 5.23 M€
- SME: 3.23 M€

Data: ECSEL Joint Undertaking
### Importance for Poland (and CEE region)

#### Funding
- **private expenditure on R&D** = 0.47% of GDP
- **GERD (private and public)** = 1% of GDP

#### Cooperation
- **limited R&D cooperation by SMEs**
- **limited private expenditure in co-funding of public R&D**

Data: European Innovation Scoreboard 2017
Importance for SMEs in Poland (and CEE region)

**SMEs in Poland**

- **8.3%** SMEs innovate in-house (product or process innovations deployed)
  - 28.8% EU-28 average

- **3.5%** SMEs involved in innovation activities with external parties
  - 11.2% EU-28 average

**SMEs in ECSEL**

- Getting closer to H2020 target: 20% of budget allocated to SMEs

Data: European Innovation Scoreboard 2017
Data: Interim Evaluation of the ECSEL Joint Undertaking (2014-2016)
Large ecosystem projects and SMEs

SMEs require support in high-risk research and innovation projects.

Development of digital enabling technologies calls for R&I grants: both SME-dedicated instruments and large collaborative projects.

SMEs benefit from cooperation with large enterprises.

SMEs learn about requirements and respond with solutions. They eventually enter LEs value networks as suppliers or end-user application providers.

SMEs need to grow and scale up.

In order to grow, SMEs are trying to access new (larger) markets, looking for public procurement contracts, and using capital for business development.
ECS and ECSEL for SMEs

LEs involved to identify value offered by SMEs, validate it in collaborative projects, enable productization.

Role of LEs and their CVCs to invest in SMEs that fit LEs product portfolio or value network.

Multi-Annual Strategic Plan ("MASP") 2018

“Embedding them in eco-systems of large companies, RTOs and academia, and giving them access to funds is a prerequisite for continuous growth.”

ECSEL JU Strategy and Impact

The role of SMEs and respective support instruments is currently addressed by the “Strategy and Impact” advisory working group to ECSEL.
industry-driven programme

- Electronic Components & Systems Strategic Research Agenda. ECS SRA prepared by the ECS community. Input to ECSEL-JU MASP.

- Focused on relatively mature technologies. H2020 and domestic projects (TRL 2-5) as an input to ECSEL. Targeting TRL 7-8.

- Projects aim for industrial use cases. Defined by the industry. Applied (industrial) research and experimental development.

- Mid- and long-term technology development process
ECS SRA timeframes: pilot lines (TRL6-8) starting close to 2030! Technologies with high impact potential.
Productive 4.0

Electronics and ICT as enabler for digital industry and optimized supply chain management covering the entire product lifecycle

The project receives grants from the European H2020 research and innovation programme, ECSEL Joint Undertaking, and National Funding Authorities from 19 involved countries under Grant Agreement no. 737459.
Productive 4.0

108 consortium members
19 European countries
106 million Euro budget
36 months (2017-2020)

coordinated by Infineon AG
the largest industry 4.0 project in EU programmes
starting point for Industry4.E
ECSEL lighthouse initiative
BetterSolutions SA coordinating Polish sub-consortium

Productive4.0 Kick-Off Conference (Dresden, May 2017)
Prof. Wolf-Dieter Lukas (BMBF), Dr. Max Lemke (DG CONNECT), Laila Gide (ARTEMIS-IA), Knut Hufeld (Infineon, Project Coordinator), Stanislaw Tillich (Prime Minister of Saxony), Dr. Reinhard Ploss (CEO at Infineon)
response to Digitizing European Industry strategy
  - technological platforms
  - large-scale pilots

European industry leaders
  - BMW, Philips, ABB, NXP, Bosch, Thales, Volvo, Danobat, and more

20+ pilot use cases
  - automotive, chemical, energy, semiconductors, consumer goods, aerospace, machine manufacturing, logistics and supply chain

Source: Productiv4.0 contents
unified approach towards industry digitization
- digital production
- product lifecycle management
- supply chain networks

company’s objectives and scope:
- data space architecture and tooling to integrate Product Lifecycle Management and Supply Chain Management
- embedded systems for logistics 4.0 (based on Arrowhead framework) to increase transparency and visibility of supply chain

use case partners
- Thales and Infineon

Arrowhead framework for IIOT automation and Productive4.0 exploitation platform
- BetterSolutions SA as an interface to Polish industry 4.0 ecosystem
3HUB: Pomeranian Digital Innovation Hub

- ten founding parties signed memorandum of cooperation in September 2017
  - BetterSolutions: one of them
- alignment with regional industry clusters
- liaisons with regional smart specialization initiatives
- partnerships with relevant research and technology organizations and academia

Responding to regional needs
- digitization and industry 4.0
- research, technologies, products and services
- energy, maritime, offshore, transportation and logistics domain
ECSEL in Poland.
What is needed to maximize the impact?

National budget increased.
Enable wider participation of Polish organizations in ECSEL JU projects.

Funding instruments for projects recognized at European level.
“Seal of Excellence” for H2020 and ECSEL projects, which scored above the threshold.

Complementary funding programmes to mature ECSEL results in Poland.
Additional national R&D funding mechanisms for ECSEL project participants to enable further development of technology up to TRL 8-9.
Support for investments in productization.

Increased technology uptake and absorption on domestic market.
Development of the market for technologies and products resulting from ECSEL projects.
Access to large enterprises and state-treasury companies to set up demonstrators of operational solutions, in particular – technologies for industry 4.0.
ECSEL in Poland.
Beginnings, opportunities, and challenges

Mateusz Bonecki, Ph.D.
Director R&D at BetterSolutions SA, ARTEMIS-IA Steering Board Member
mateusz.bonecki@bettersolutions.pl

mbonecki

BetterSolutions
for Logistics 4.0