Productive4.0

A Digitalisation Approach for the European Industry

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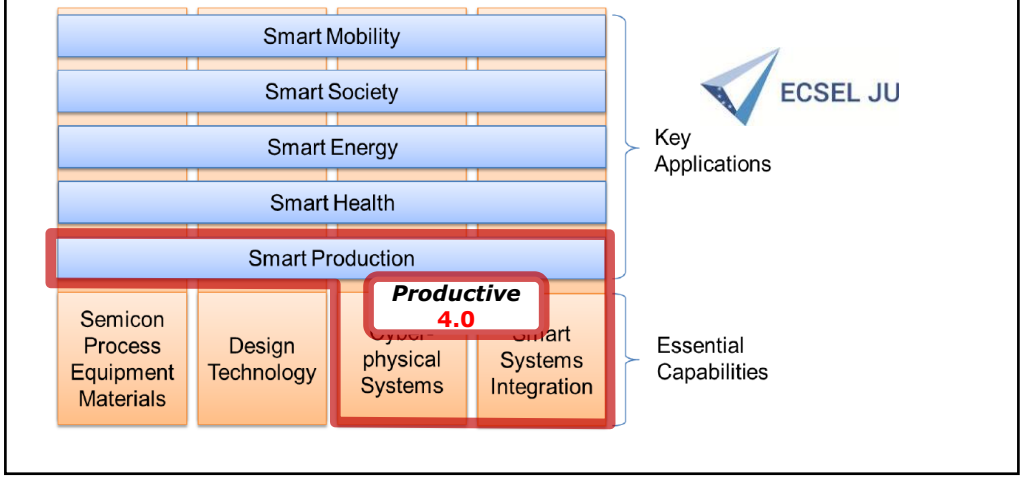
Knut Hufeld
Infineon Technologies AG
+49 89 234 52653 knut.hufeld@infineon.com

Positioning the project

ECSEL JU

EC Horizon2020

ECSEL
Electronic Components and Systems for European Leadership



ECSEL Innovation Action & Lighthouse

Productive4.0 Electronics and ICT as enabler for digital industry and optimized supply chain management covering the entire product lifecycle

Positioning the project

EMC²
ARROWHEAD
SEMI40
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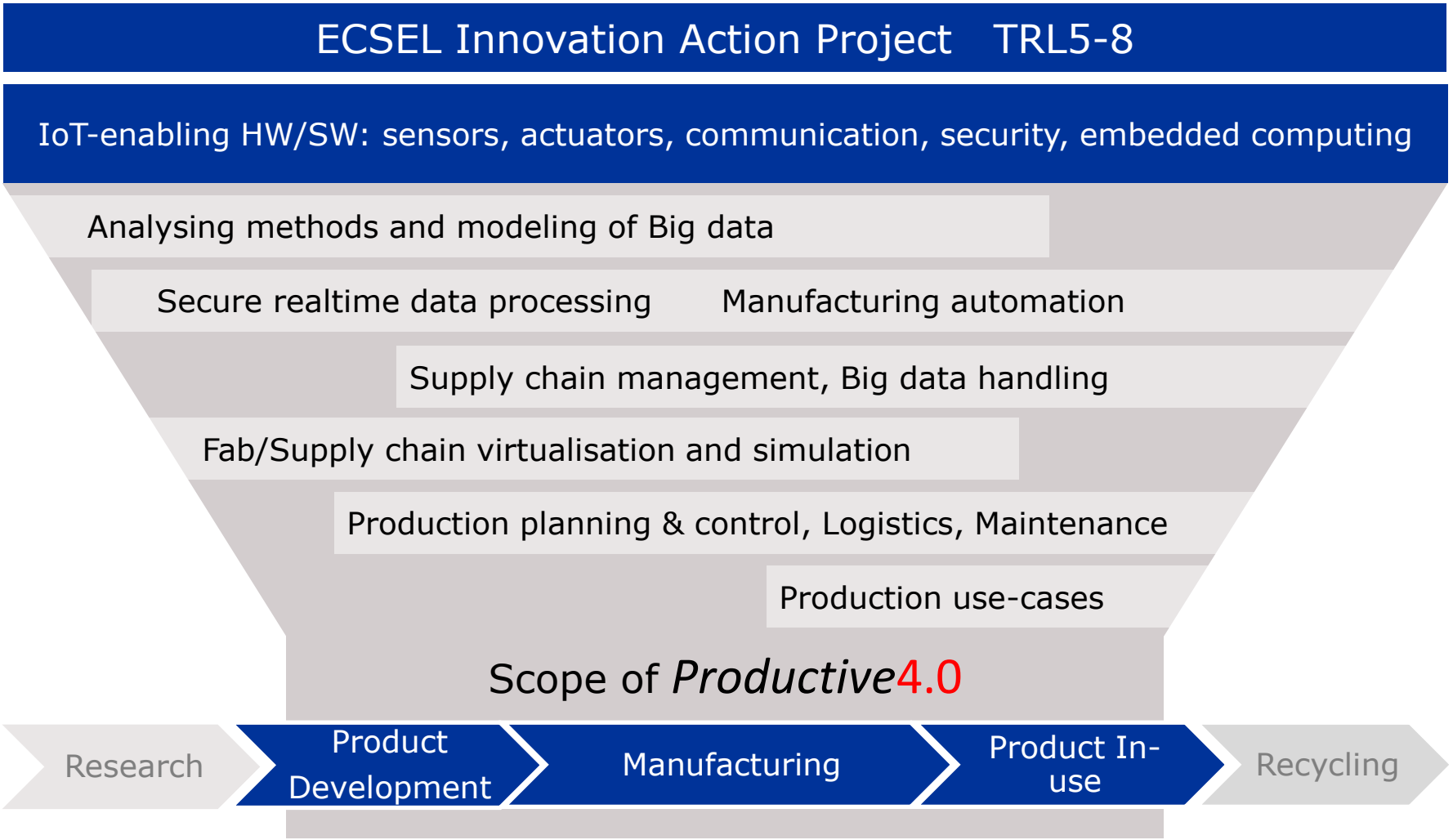
ECSEL Innovation Action & Lighthouse

Productive4.0 Electronics and ICT as enabler for digital industry and optimized supply chain management covering the entire product lifecycle

Scope of the project



Main objective of the project

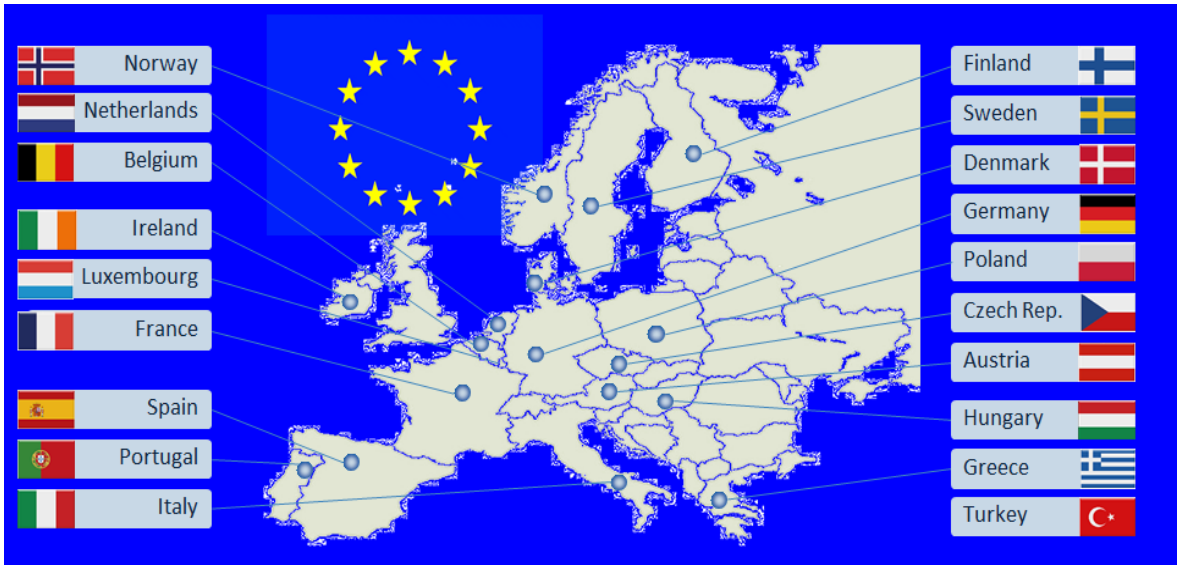
Main objective

Significant improvement in digitalising the European industry by means of electronics and ICT.

- aiming at suitability for everyday application
- various industrial domains with same approach of digitalisation.

..a structured European consortium indeed..

- 112 Partners
- 19 countries
- 65% Industry
- Budget: 115 Mio €
- JU funding: 25 Mio €



- Well balanced across ECSEL communities:
  - 45% AENEAS
  - 30% ARTEMIS-IA
  - 25% EPOSS

***Productive4.0**: ca. 65% HW electronics; 35% system architecture, methods and tools*

- Key partners:

  BMW, Philips, Infineon, ABB, SAP, NXP, STM, BOSCH, Thales, AVL, VOLVO, CEA, BetterSolutions, IMA, KIT, AIT, FhG, Sysgo, DANOBAT, MONDRAGON, ERICSSON, COMBIENT, VTT, SINTEF, LTU, LFOUNDRY ,TNO, TTTech, Siltronic, VIF and many more..

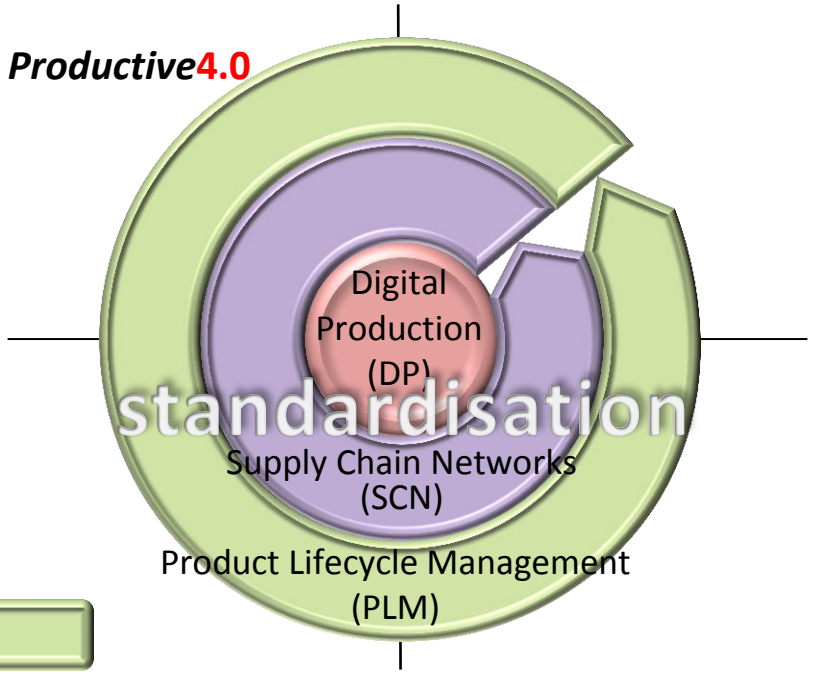
- Key industrial domains:

  Automotive,
  Machinery,
  Semiconductor & Electronics,
  Consumer,
  Automation,
  Logistics

Main idea

***Productive*4.0** will take a major step towards
a hands-on approach of digitalising the European industry
with the focus on the three pillars:

- Digital production (DP)
- Supply Chain Networks (SCN)
- Product Life Cycle Management (PLM)



Project Structure – towards reference implementations

The relevant objectives per work package are:

1) Furnish the Digital Industry with SoS-based architecture platforms

2) Set up a data analytics framework and a secure communication environment

3) Provide the industry with IoT-enabling components

4) Develop complex simulation models for DP, SCN and PLM

5) Create powerful systems for planning, virtualising and controlling

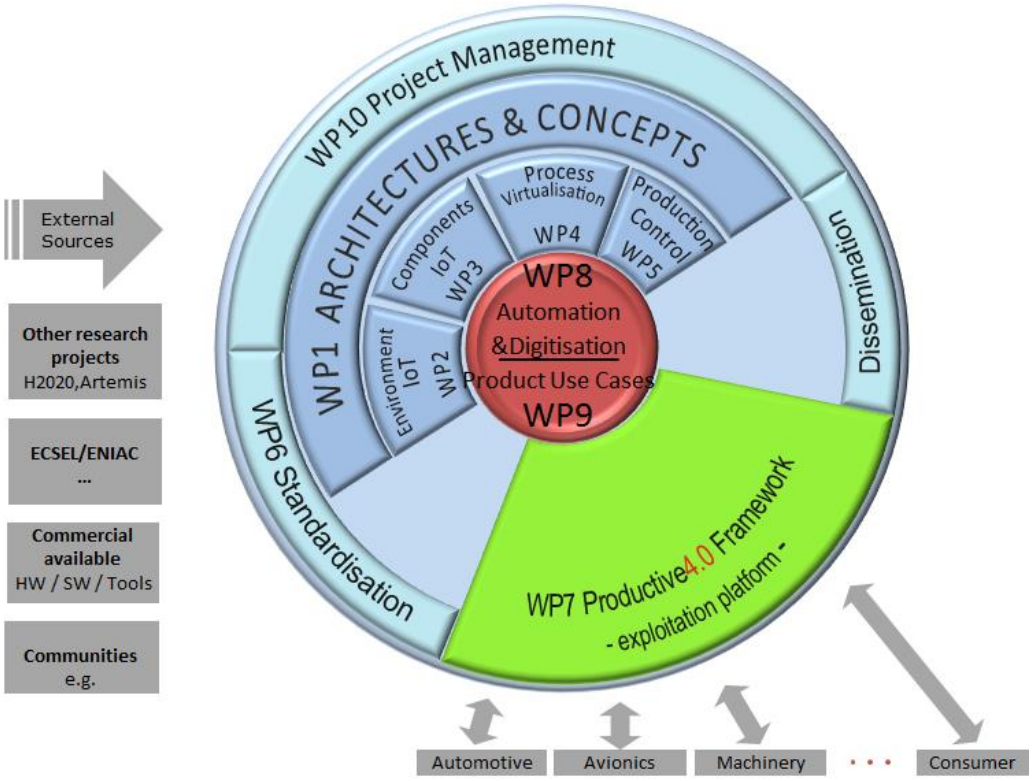
6) Foster relevant standards in the industry

7) Establish the ***Productive4.0*** framework as a cross domain platform for the Digital Industry

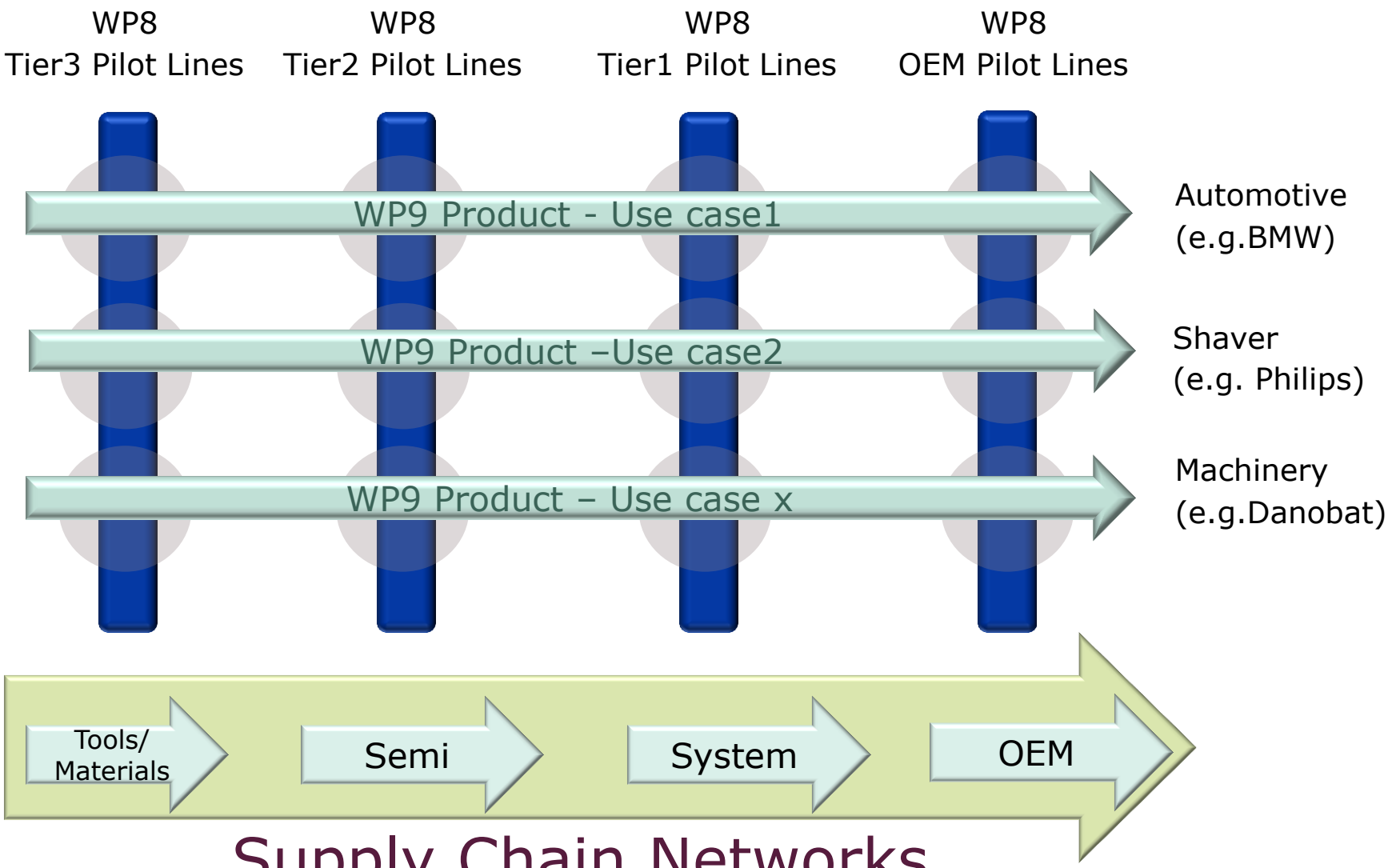
8) Provide for practical solutions and reference implementations for the Digital Industry

9) Implementation of reference product use cases for the different industrial domains

10) Establish an appropriate environment for the ***Productive4.0*** brain pool partners

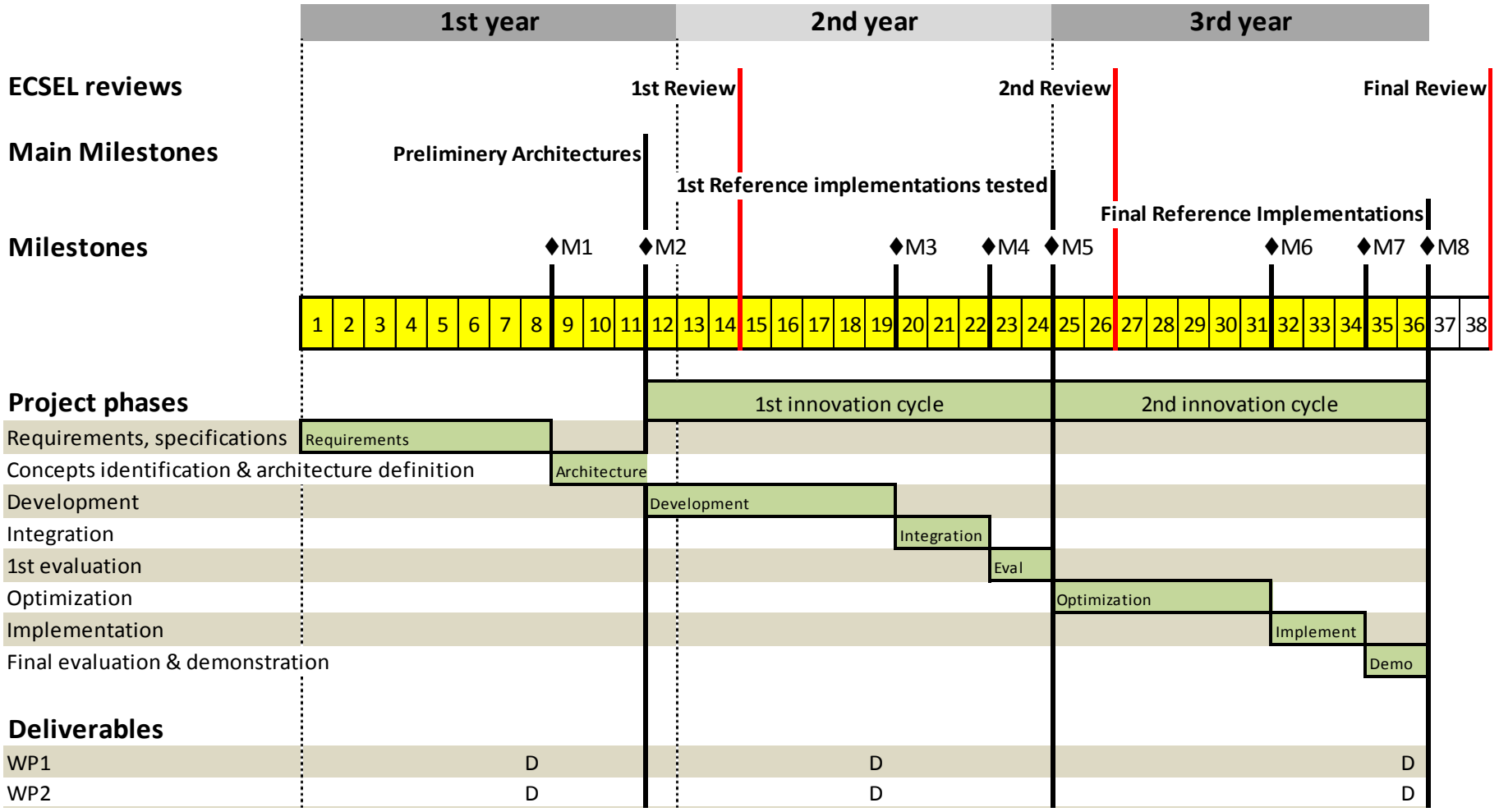


Automation and Digitisation Pilot Lines



Supply Chain Networks

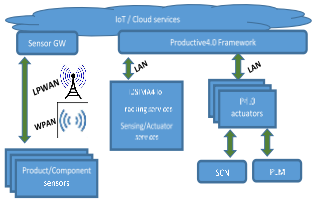
Project phases

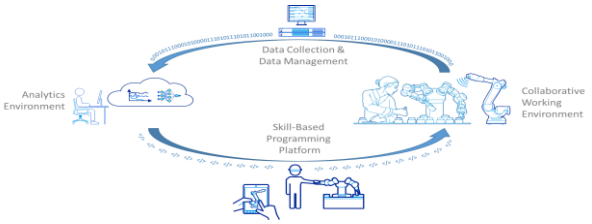


.. the hands-on approach - ***Reference implementations for the Digital Industry*** across various industrial domains and applications..

*examples **OEM use cases**:*

- **Lot size 1**: Vehicle individualization in a highly automated assembling process in the Automotive Industry in the logistics based on Product Lifecycle Management Systems (BMW, EDMS)
- **Flying robots** (BMW, IEMTEC, BAUMUELLER, KINEXON, FAU FAPS)
- **Industrial IoT**/CPS system (VTC, COMBIENT, ERICSSON, LTU, EISTEC, SEB)





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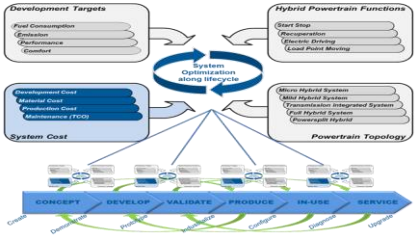
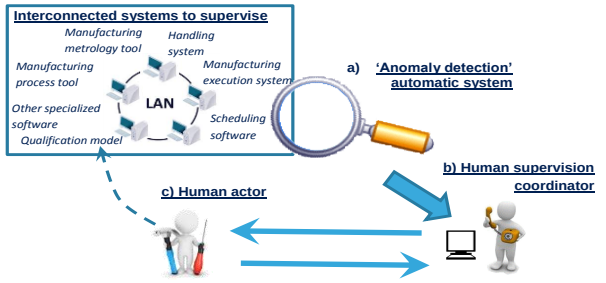
*examples **Tier1 use cases**:*

- Smart services for test equipment (AVL)
- Simultaneous Cost Engineering for powertrain architectures (AVL)
- Smart Services for Trusted Manufacturing Site (ABB)
- Supply chain management for semiconductor manufacturing (BOSCH)
- Smart failure analysis lab (IFAT)





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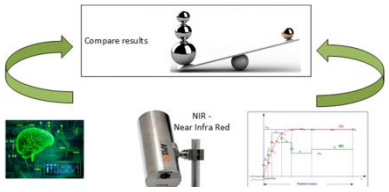
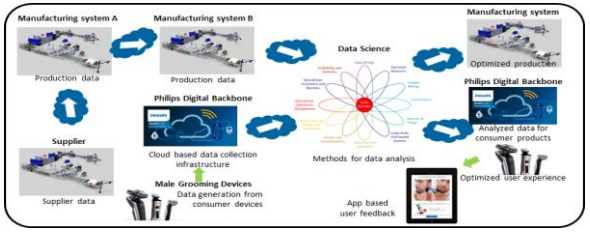
*examples **Tier2 use cases**:*

- High Automation Solution in SC Wafer production line (Siltronic, SYSTEMA)
- Data Analytics, Semiconductor Data Lake (Infineon, SYSTEMA)
- Fab robotization (ST ROUSSET)
- Adaptive mobile robotic systems for smart manufacturing (FH Stralsund, Infineon)
- Flexible Autonomous Robots with Advanced Handling Functionality (RRO, IFD)
- Single device tracking and advanced process control in assembly and packaging for system integration (Infineon)





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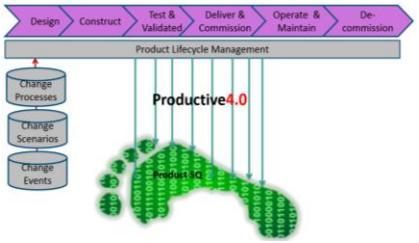
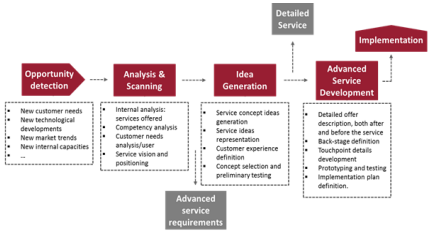
examples ***Product/Application use cases****:*

- Shaver system use case (Philips)
- Extended Product Lifecycle Management (THALES)
- Machinery for railway wheels (DANOBAT, MONDRAGON)
- Chemical production (Unger, Prediktor, HIOF, TellU, SINTEF)
- Machine and fleet management offered as industrial services (VTT, TUT, WAPICE)
- Virtual production planning and control of a semiconductor supply chain (BOSCH, UoC, KIT)





Thank you for your attention!