Digital Manufacturing Platforms for Connected Smart Factories

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Technologies & Systems for Digitising Industry
Partnerships
Digital Value Chain

Micro-electronics
Robotics
5G
Cloud computing
Artificial Intelligence
Big Data
Smart Factory
Healthy aging
Autonomous driving
Digital Industrial Platforms
What do we mean?

✗ A place or opportunity for public discussion
   e.g. European Platform of National Initiatives; Plattform Industrie 4.0

✓ An operating system that integrates different technologies and various
   applications and services

✗ Online platforms in the consumer world
   e.g. Facebook, Nest, Android

✓ Industrial platforms in the business world
Digital Industrial Platforms

Roles

- Explicit connections between users
- Network is key value
- Complementary applications
- Development platforms
- Unlock data
- Integration

Different platforms fill in roles in different ways and to varying degrees

"Marketplace"

"Operating system"

"Middleware"

Adapted from http://platformed.info/platform-stack/
Digital Industrial Platforms
Smartphone analogy

Smart Phone

- Applications
- Platform / Operating System
- Sensors / Connection with physical world

Smart Factory

- APIs
- IoT
- Cloud
- Big Data
- FITMAN
- RAMI
- IDS
Digital Industrial Platforms

**Examples**

Community-led sector-specific (vertical)

**IDS**

**ISOBUS**

Community-led cross-sector (horizontal)

**S3P**

**FITMAN**

Commercial with open interfaces

**MindSphere**

**FITMAN**

**European Commission | Communications Networks, Content & Technology**
Digital Industrial Platforms
Alignment of R&I efforts

EU actors join forces along common interests
Future global standards & platforms driven by interests of EU actors

Focus investments on:

- Integration of key digital technologies
- Digital industrial platforms, reference architectures, ...
- Reference implementations, large-scale piloting, experimentation environments
- Ecosystem building and standardisation
Digital Industrial Platforms
Cooperation with other initiatives

- Development and integration of platforms, reference architectures, ...
- Close-to-reality experimentation in xxx model factory
- Large scale experimentation in yyy lab
- SME testing facility at zyx digital innovation hub
- Real production OEM x with supply chain
- Best practice Experimentation in zzz lab
- Best practice Experimentation in xyz lab

Regional Investments
Member States / Associated Countries Investments
EU Investments FoF/SPIRE/ECSEL / ...
WP 2018-2020
Topics pan-European platform-building and piloting

Cross-cutting issues, IoT, Big Data, Security...

- 2018: Agile Value Networks: Lot-size One
- 2018: Zero-defect Processes and Products
- 2019: Machines & Human Competences
- 2019: Sustainable Value Networks
  2018: 48 M€
  2019: 47 M€

DT-ICT-08-2019: Agricultural Digital Integration Platforms
  30 M€

DT-ICT-09-2020: Digital Service Platforms for Rural Economies
  30 M€

DT-ICT-12-2020: Smart Hospital of the Future
  25 M€

DT-TDS-01-2019: Smart and Healthy Living at Home
  60 M€

DT-ICT-10-2018-2019: Interoperable and Smart Homes and Grids
  30 M€

DT-ICT-11-2019: Big Data Solutions for Energy
  30 M€

DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities, 4 M€
Including Preparation of a digital industrial platform for the construction sector, 1 M€
Specific Challenge
• Increasing role digital manufacturing platforms
• Advances needed in integration different technologies, making data accessible, and allowing complementary applications
• Challenge to exploit new concepts and technologies

Nota bene
• Part of Focus Area "Digitising and transforming European industry and services: digital innovation hubs and platforms"
• Introductory texts "Platforms and Pilots" are applicable, in addition to specific topic texts
• See also Digitising European Industry WG2, https://ec.europa.eu/futurium/en/dei-implementation
Scope Innovation Actions:

- **Develop platforms for connected smart production facilities**
  - Driven by EU actors and safeguarding European interest
  - Two industrial sectors
- **Target at least one ‘grand challenge’ *:**
  - Agile Value Networks: lot-size one (2018 call)
  - Human factor: human competences and technological progress (2019 call)
  - Sustainable Value Networks: manufacturing in circular economy (2019)
- Reference implementations preferably in open-source
- Max 20% financial support to third parties (typically 50-150 k€)

* See document "Factories 4.0 and Beyond" on http://www.effra.eu/
Digital Manufacturing Platforms
DT-ICT-07-2018-2019

Expected impact:
• Significant increase options SMEs/mid-caps to integrate technologies, unlock value data, deploy complementary applications, and become responsive links in supply and value networks
• Strengthened competitive position European platform providers
• (Increased cooperation industrial and academic communities)

From introductory texts:
• Increased prospects future digital industrial platforms
• Strengthened links with other programmes and initiatives
• Increased number of services/applications by European companies
• Significant, measureable contribution to standards
• Increased number of platforms, applications, business processes and innovative business models validated via large-scale piloting
• Emergence sustainable ecosystems around digital platforms

IA: 48 M€ (2018), 45 M€ (2019), up to 16 M€ would be appropriate, at least one per 'grand challenge'

2018
Open: 31 Oct 2017
Close: 17 Apr 2018

2019
Open: 16 Oct 2018
Close: 02 Apr 2019
For more information

- **Pre-publication** LEIT-ICT Work Programme 2018-20
- Digitising European Industry **WG2 report**
- Industrial Innovation **Information Days**
  - Brussels, 3-4 Oct 2017
- ICT **Proposers' Day** 2017
  - Budapest, 9-10 Nov 2017
- ConnectedFactories event
  - Brussels, 5-6 Feb 2018
- Digitising European Industry
  - @DigIndEU