

ZERO DEFECTS Manufacturing Platform

ZDMP

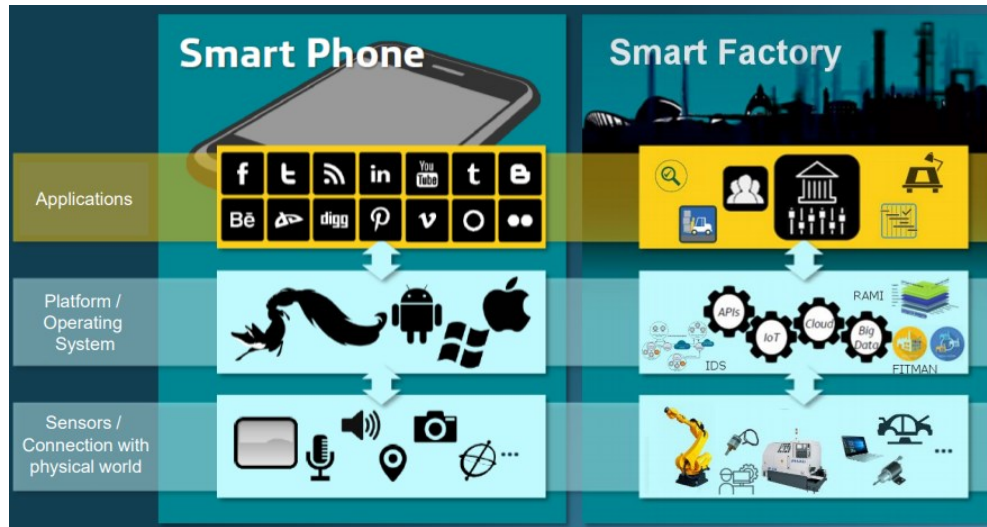
ZDMP Industry with Zero Defects

João Sousa

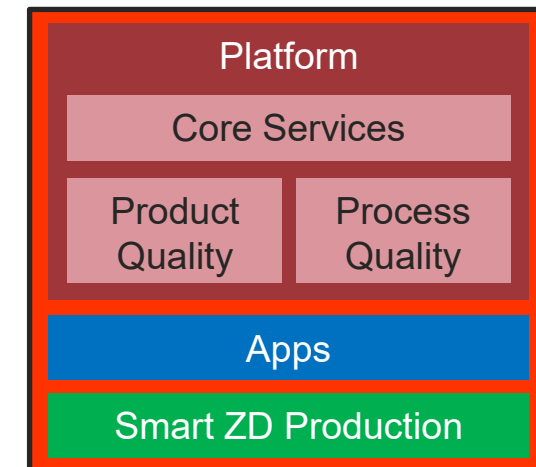
08/07/2021



The goal of ZDMP is to develop and establish a **digital platform for connected smart factories** for achieving excellence in manufacturing through **zero defect processes and products** thanks to the use of **zero-defect core services for developing Apps**



Smart Phone Analogy



Smart Zero Defects

Big Picture



- 4 Years
- 19M€ Cost
- 16.5M€ Funding
- 3.2M€ For Calls – Start 2021-March
- 30 Partners + 1 Linked Third Party
- 4 Domain and 1 Cross Domain demonstrator
- DT-ICT-07-2018-2019

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- info@zdmp.eu

- PM: stuart.campbell@informationcatalyst.com

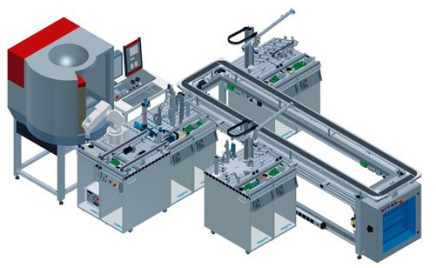
- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none"> ○ Coordinator:
UNINOVA ○ Project Manager:
ICE – Information Catalyst ○ ITI – Instituto Tecnológico de Informática ○ Information Catalyst for Enterprise Limited ○ Ford España ○ Martinrea Honsel Spain | <ul style="list-style-type: none"> ○ Mondragon Assembly ○ HSD ○ FIDIA ○ Formplast-Svoboda ○ Consulgal ○ PT MILLS ○ Flexefelina ○ CEI ○ Continental Automotive Romania | <ul style="list-style-type: none"> ○ Software AG ○ DIN ○ Ceteck Tecnológica ○ Video Systems ○ Ascora ○ Profactor ○ Softeco Sismat ○ Etxe-Tar ○ Along | <ul style="list-style-type: none"> ○ ROOTER ANALYSIS ○ UPV – Universitat Politècnica de València ○ IKERLAN ○ University of Southampton ○ AlfaTest ○ Siveco ○ Tampere University |
|---|--|---|--|

Use Cases

 **2** Supply Chains

 **5** Industrial Domains

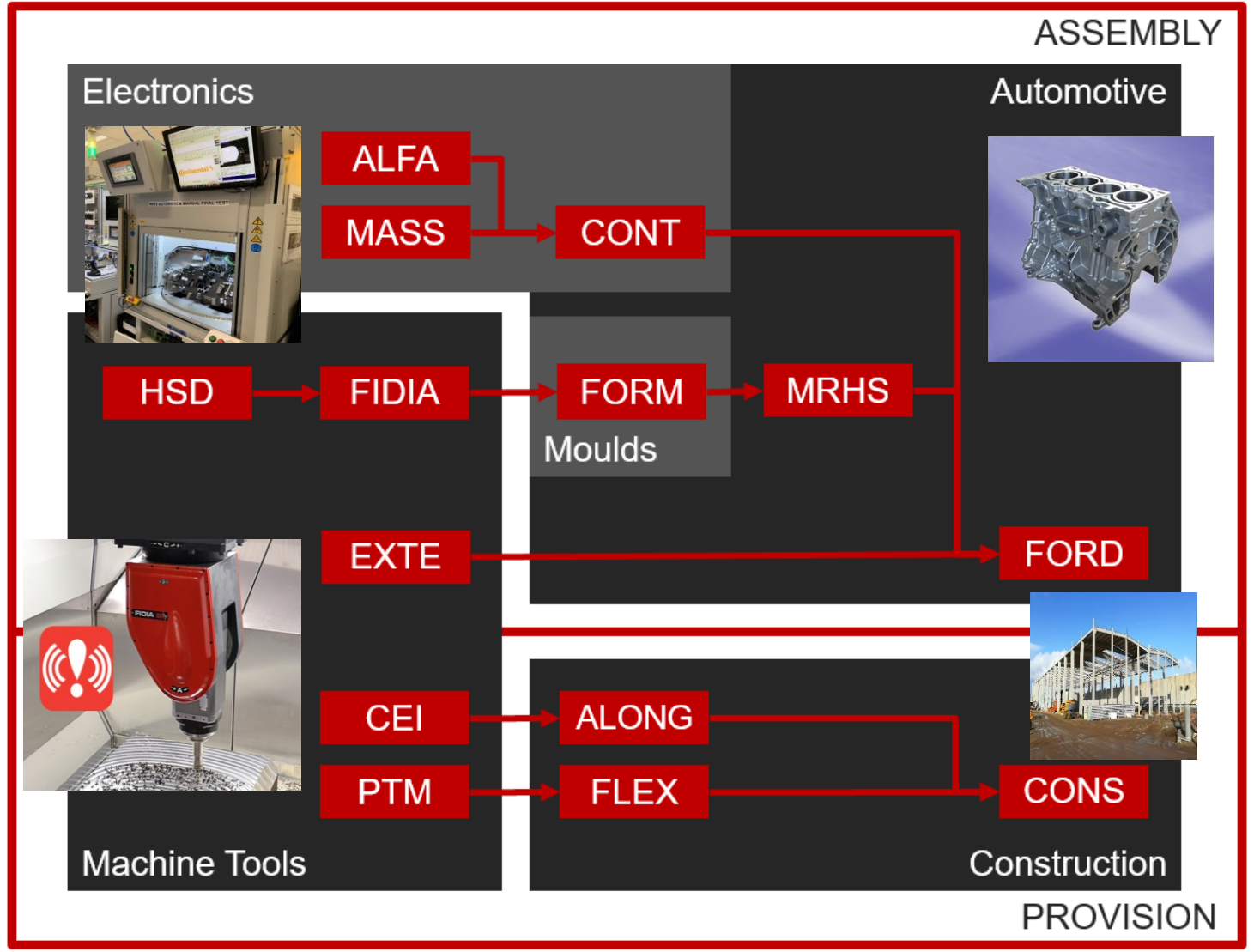
 **14** Manufacturing
Companies



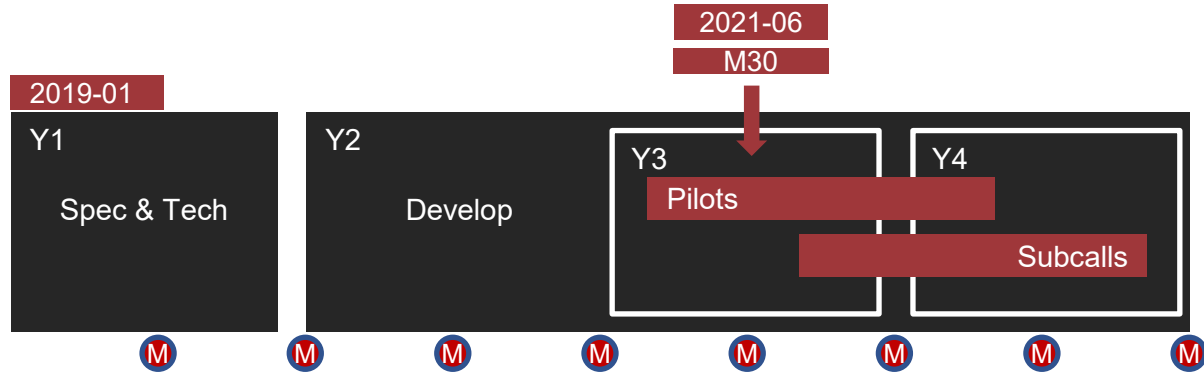
Experimentation
Facility



Reference
Implementation



Project Status

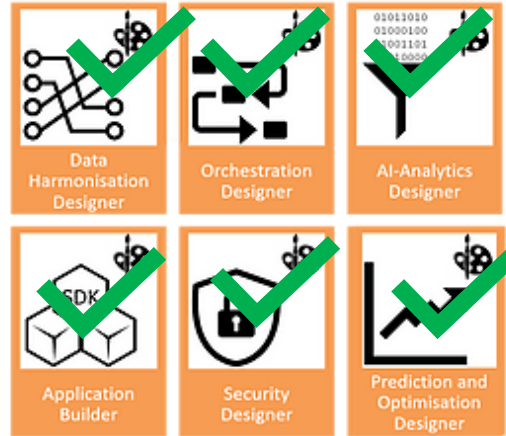


Milestone

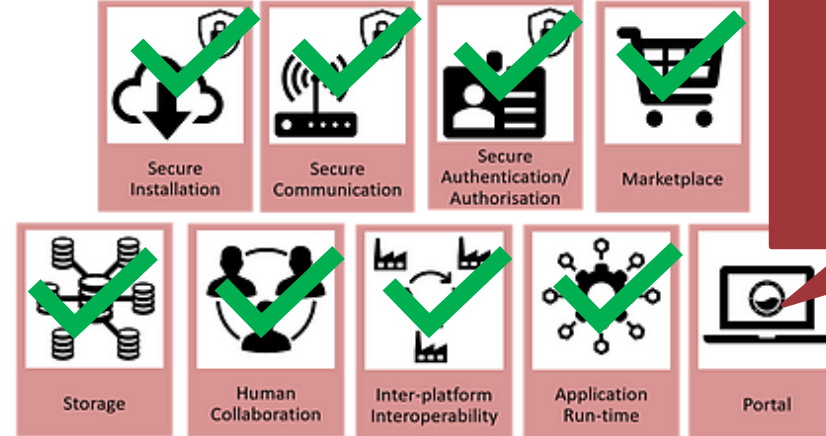
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|---|--|-------------|---|
| 1 | | Initiated | Vision, Use Cases, Requirements, Reference Model Market Analysis, Societal Analysis, Exploitation and Dissemination Strategy/Plans |
| 2 | | Prepared | Architecture, Functional and Technical Specifications, Standardisation strategy plan |
| 3 | | Developed | First zComponent prototypes + IPR, Subcall Strategy, User implementation Plans, Exploitation Updates |
| 4 | | Refined | Integration of zComponents, Inclusion of i4FS in to consortium |
| 5 | | Established | Platform + zComponent Integration, Build of First zApps + IPR, Call 1 Conducted, Business Simulation, Experimentation/Reference Facility Setup |
| 6 | | Ripe | Upgrade of zComponents, More zApps + zApp Piloting. Call 2 conducted, Subcalls 1 and 2 In operation, Experimentation/Reference Facility Setup in action, Workshop |
| 7 | | Matured | More zApps + zApp Piloting, Call 1 results, Hackathon |
| 8 | | Fermented | Call 2 Results + Wrap up activity, Exploitation activity, Hackathon, Workshop |

- ✓ At M30 Components are ready, integrated, and available to subcalls

Developer Tier (Design Time)

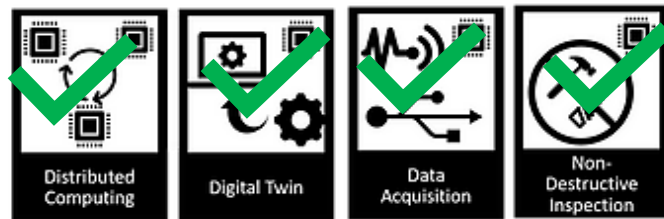


Enterprise Tier (Use-time)

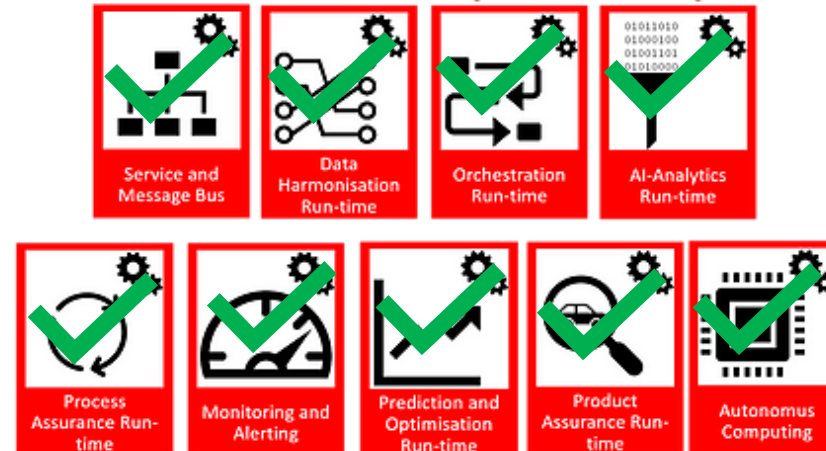


Version 1 - For
Subcall 1 Winners

Edge Tier (Run-time)



Platform Tier (Run-time)



<https://www.zdmp.eu/documentation>

Key Results/Outcomes

- ✓ At M30 Components are ready, integrated, and available to subcalls
- ✓ Solid Technical Approach – Around 1000 pages of architecture/Functional and Technical Specs as part of Hybrid Agile Methodology
- ✓ M18 and now M30 significant pro documentation – Videos, How Tos etc, Code online AND useable

Search this site...

Documentation

Overview

Components

Developer Tier

- AI Analytics Designer
- Application Builder
- Data Harmonisation Designer and Runtime
- Orchestration Designer and Runtime
- Prediction and Optimisation Designer
- Security Designer

Edge Tier

Data Acquisition

- Digital Twin
- Distributed Computing
- Non-Destructive Inspection

Enterprise Tier

- Application Run-time
- Human Collaboration Environment
- Inter-platform Interoperability
- Marketplace
- Portal

[Documentation](#) / [Components](#) / [Edge Tier](#) / [Data Acquisition](#)

Data Acquisition



General Description

As a prerequisite for data access, exchange, and analytics within ZDMP, the Data Acquisition component implements a framework for the handling of data from IoT sensors and other sources. It allows the connection to different kind of data sources: IIoT physical devices such as industrial automation devices (PLCs, smart sensors, RFID readers, etc), ERP systems, SCADA/MES systems/data, and existing databases. It provides a collection of functionalities among which functionalities to collect data from and to send commands to such systems.

The Data Acquisition component, in the context of ZDMP, contains gateways to various data sources (physical devices and other sources of data). It provides a flexible and modular approach to interact with the data sources through their specific interfaces and communication protocols, hiding the complexity of communicating with a wide range of sources by providing a common interface to the rest of the ZDMP system. In this sense, data sources are treated as software black boxes where implementers are free to make implementation decisions, if they provide the interfaces required by ZDMP components..

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- ✓ Successful subcalls – around 60 applicants and 10 winners, various KPIs near achieved and subcall 2 opening on track in august and will be successful

ZDMP Open Call Overview

There are two Open Calls with a total value of **€3.2million**.

	Open Call 1	Open Call 2
Opens	1 st March 2021	2nd August 2021
Closes	31st April 2021 - 17:00, CET	30th Sept 2021 17:00, CET
Funding split	1M€	2.2M€
Funding range (per sub-project)	€50-150K	€50-150K
Sub-project start	August 2021	January 2022
Project duration	9 months (fixed)	9 months (fixed)
Expected awards	10	20

Find out more details about the ZDMP Open Calls on
<https://www.zdmp.eu/calls>

Open Call 2 Activities

Proposals should focus directly on a single area of activity :

Activity	Open Call 2
Activity 1 Create	Create new zero-defect orientated zApps or solutions for the ZDMP platform. Create new components or solutions for the ZDMP platform, which may be useful for future zApps and/or supporting zero-defect solutions. (Must be different from those developed within the ZDMP project)
Activity 2 Integrate	Integrate existing tools/services with the ZDMP platform, which may have application to tangible Zero-Defect manufacturing scenarios
Activity 3 Validate	Validate zApps in a zero-defect orientated manufacturing scenario Validate ZDMP components in a manufacturing scenario

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- ✓ Successful subcalls – around 60 applicants and 10 winners, various KPIs near achieved and subcall 2 opening on track in august and will be successful
- ✓ Set up formal company i4FS (Industry 4 Factory Solutions) to exploit project results. i4FS now acceded to other projects well

Exploitation Company Formed



CERTIFICATE OF INCORPORATION
OF A
PRIVATE LIMITED COMPANY

Company Number 12235902

The Registrar of Companies for England and Wales, hereby certifies that
I4 FACTORY SOLUTIONS LIMITED

is this day incorporated under the Companies Act 2006 as a private company, that the company is limited by shares, and the situation of its registered office is in England and Wales.

Given at Companies House, Cardiff, on 1st October 2019.

The above information was communicated by electronic means and authenticated by the Registrar of Companies under section 1115 of the Companies Act 2006



SHARE CERTIFICATE		
Certificate No 2	Class Ordinary Shares £1	No of Shares 142
Company Name: I4 Factory Solutions Limited		
Company Number: 12235902		
This is to certify that		
Ascora GmbH		
of		
Birkenallee 43, 27777 Ganderkesee, Germany		
is the registered holder of 142 Ordinary shares of £1 each in the above named company subject to the memorandum and articles of association of the company		
This certificate was authorised by:		
Directors: Stuart Campbell, Managing Director; Date: 2019-10-30		

Example



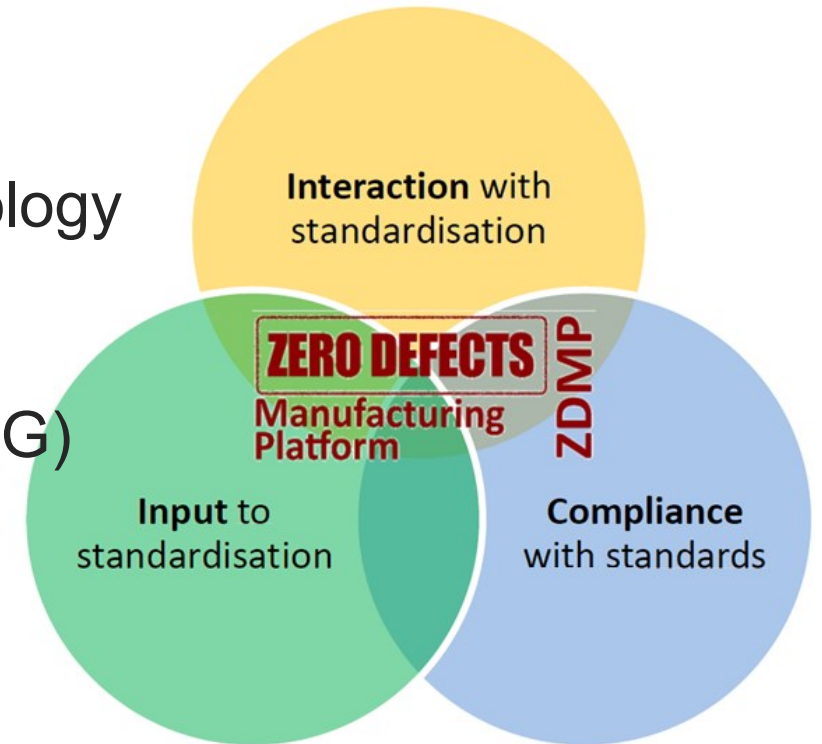
Tony Velin
Managing Director

- A partnership company legally established in the project, which has now joined the project in its own right.
- Between several ZDMP beneficiaries and also some non-project partners to provide joint exploitation
- Will run the post-project Platform, Marketplace, continue building components

Standardization Goals

Main initiatives:

- CEN/CENELEC Workshop Agreement (CWA):
 - **Objective:** Definition of ZDM concept and terminology
 - **Status:** Elaboration of a draft CWA
- Industrial Ontologies Foundry Working Group (IOF WG)
 - **Objective:** Definition of ZDM ontologies
 - **Status:** Working group establishment



Core members:



Projects:



ZERO DEFECTS
**Manufacturing
Platform**

ZDMP

Thank you!

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