Boost 4.0
BIG DATA FOR FACTORIES

20M€ budget | 100M€ of private investment | 50 partners | 16 countries

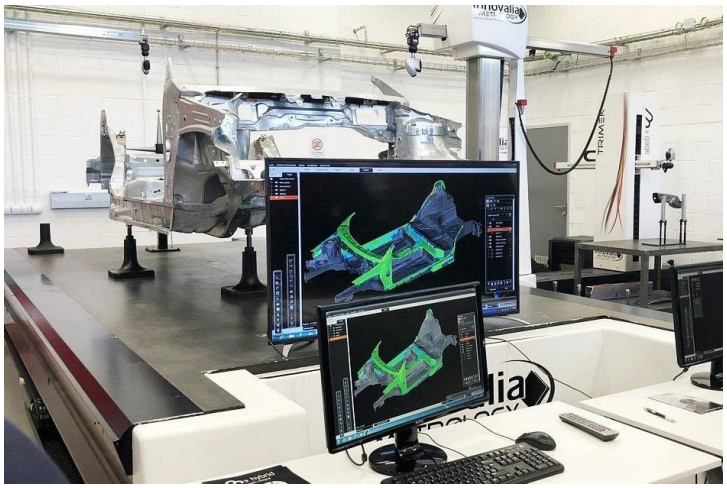
Smart Production

Zero Defect Manufacturing (ZDM) Powered by Massive Metrology

TRIMEK
METROLOGICAL ENGINEERING

CAPTURE MORE | PROCESS FASTER
REUSE ALWAYS | DECIDE BETTER

Future metrology will be used to assess and guarantee the fit, performance and functionality of every part and support the targets of zero waste and carbon neutrality



Data-driven Manufacturing Excellence

Factory 4.0 Big Data Pilot Motivation

- Slow, low productivity part quality analysis and late End of Line (EoL) defect detection
- Low resolution quality control processes (sample-based statistical analysis)
- Expensive, disconnected, rigid, off-line control decision loops performed in metrology rooms

High Density & Virtual Massive metrology Big Data Process

- Rapid processing and high-performance visualisation of massive and multi-sensor 3D point clouds (10-100 million points)
- Multi-purpose QIF-enabled Industrial IoT digital quality control workflows for massive digital thread product and manufacturing process information & trend analytics
- High-speed high resolution texturized colourmaps for high fidelity visual analysis of massive point clouds (30 secs)

Competitive Advantages

- 50% reduction in measurement planning and programming times
- 10% reduction in massive point clouds acquisition & processing
- 5% rejected products reduction
- 5% cost reduction through faster decision-making processes

Big Data Pilot Lifecycle Scope

Digital Engineering	● ○ ○ ○ ○
Production Planning	● ● ○ ○ ○
Smart Operations	● ● ● ○ ○
Smart Production	● ● ● ● ●
Smart Services	○ ○ ○ ○ ○

Big Data Pilot Site

Automotive Smart Factory,
Automotive Intelligence Centre (AIC)
Boroa | Basque Country, Spain

Pilot Partners

TRIMEK METROLOGICAL ENGINEERING
3D Quality Control & Big Data Analytics Platform

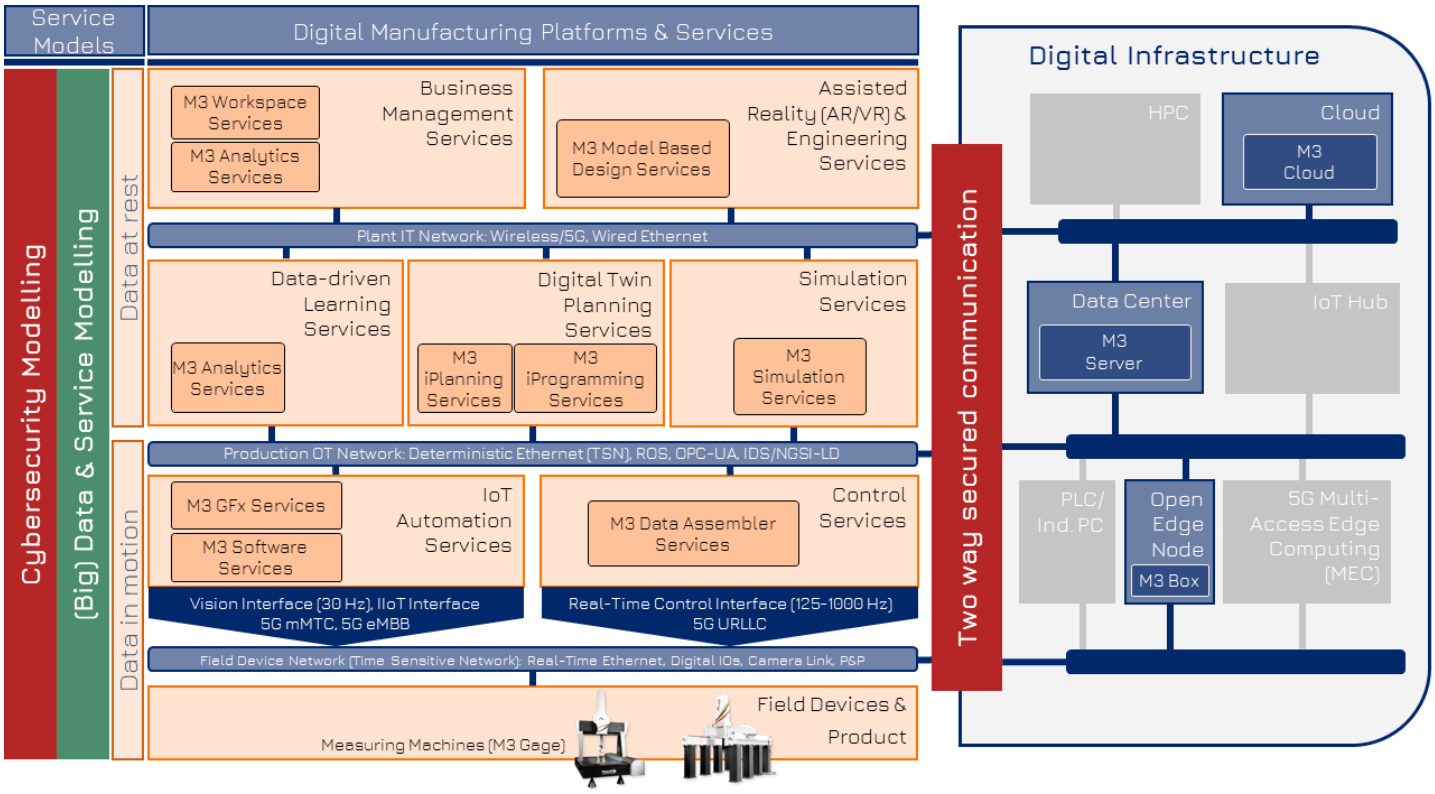
redborder
Industrial Cybersecurity

innovalia ASSOCIATION
IDS/FIWARE

CAPVIDIA
PMI Platform & QIF

Gestamp
Automotive Lighthouse Factory

I4.0 Big Data Pilot Solution Framework



Boost 4.0 big data solution framework leverages on Big Data Europe (BDE) big data pipeline technologies, International Data Spaces Association (IDSA) specifications for data sovereignty, FIWARE NGSI-LD API for open IDS implementation and Hyperledger technologies for transaction traceability. Boost 4.0 big data platforms and technologies align to RAMI 4.0 and are integrated under the Digital Shopfloor Alliance (DSA) autonomous service framework to ensure reduced cost, time and effort in solution deployment and extensibility (https://digitalshopflooralliance.eu/).

I4.0 Big Data Pilot Features

Sector / Product: Automotive

Manufacturing Process: Stamping

Big Data Analytic Techniques:
3D Industrial Data Lake Visual Analytics
& Computational Geometry

Big Data Platforms:
- M3 - m3.innovalia-metrology.com
- CAPVIDIA MBD - www.capvidia.com

IDS-FIWARE Connectors & Standards:
- NIST Quality Information Framework (QIF)
- ETSI Context Information Management (CIM)
- ProStep

Open I4.0 Big Data Pilot Pillars

INTERNATIONAL DATA SPACES ASSOCIATION

IDSA defines a reference architecture and an ecosystem, which supports sovereign exchange and sharing of data between industrial partners.

FI-WARE

FIWARE is a curated framework of open source platform components to accelerate the development of smart solutions for Industry 4.0.

HYPERLEDGER

HYPERLEDGER is an open source collaborative effort created to advance cross-industry blockchain technologies.

BIG DATA EUROPE
Empowering Communities with Data Technologies

The BDE offers an open source platform, allowing to build several Big Data components into a pipeline through a simple graphical UI.