

H2020-FoF-2015.680478 MC-Suite
October 2015 – September 2018



MC-Suite

CxMan Pre-Workshop
World Manufacturing Forum 2016
Barcelona, May 2016

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SINTEF



The University of
Nottingham

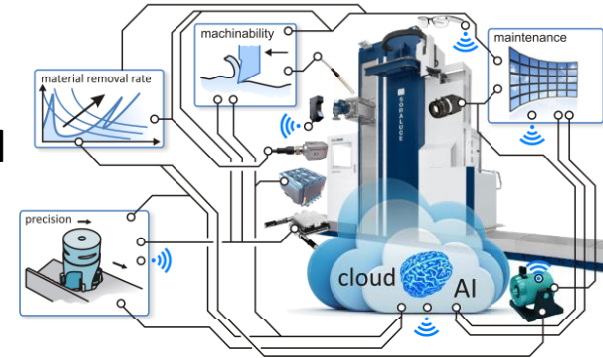


SORALUCE



Objectives of the project

The MC-SUITE project proposes a new generation of **ICT enabled process simulation** and optimization tools **enhanced by physical measurements** and monitoring that can increase the competence of the European manufacturing industry, **reducing the gap between the programmed process and the real part.**



 **MC-Virtual**

Objective 1: obtain the final tool path and the quality of the real part, the cutting force and process stability, overcoming the limits of the actual CAM software.

 **MC-Optim**

Objective 2: optimise the milling process considering multiple objectives including productivity, quality & energy consumption.

 **MC-CyPhy**

Objective 3: include three embedded systems connected to the virtual model and to the monitoring system to increase the productivity.

 **MC-Monitor**

Objective 4: provide a cloud based system able to store heterogeneous data including signal coming from machine internal sensors, from embedded systems and operator authored data.

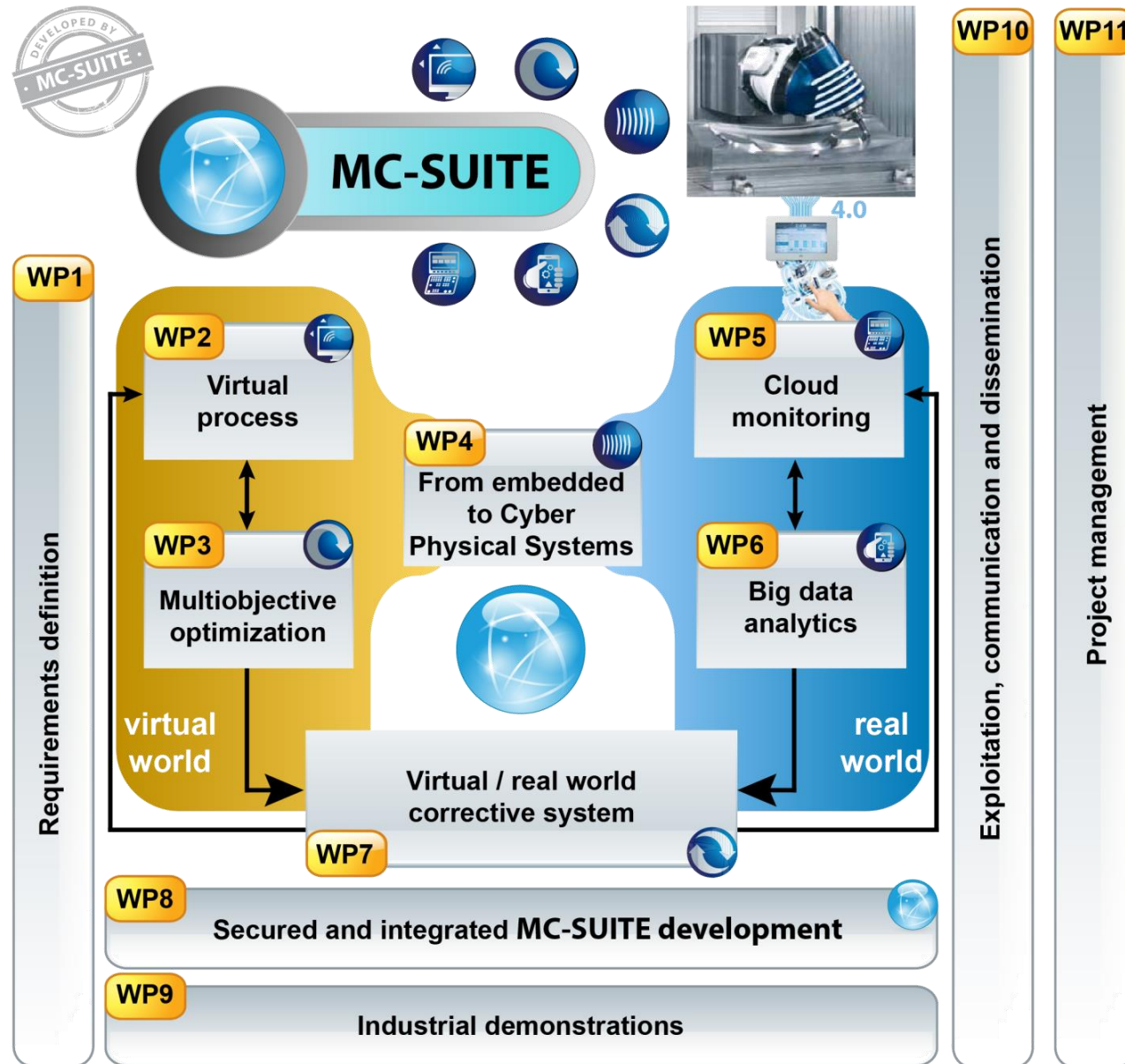
 **MC-Analytics**

Objective 5: realise a platform to treat the information of the cloud for predictive maintenance and productivity improvement.

 **MC-Bridge**

Objective 6: compare the results of the virtual and real modules to realise on-line and off-line optimizations both on the simulations and the machining process.

MC-SUITE concept



MC-SUITE industrial demonstrators

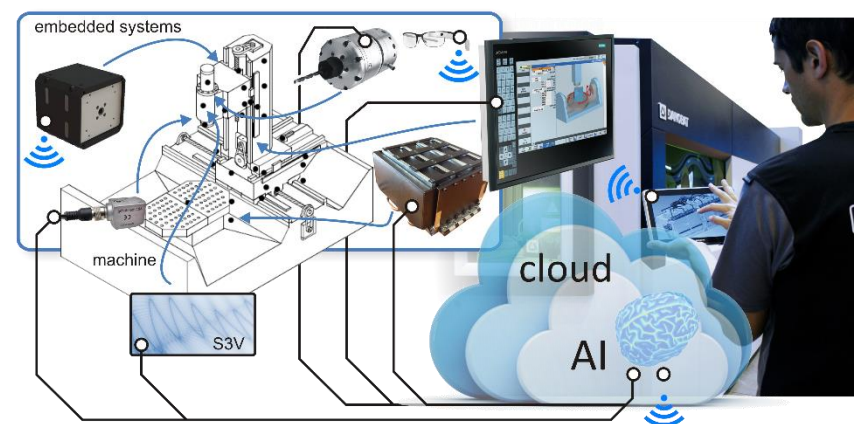
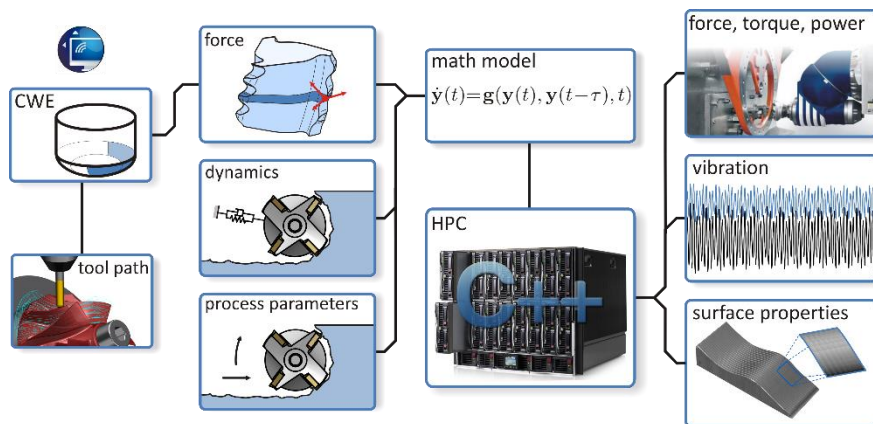
	Demonstrator 1	Demonstrator 2	Demonstrator 3
Sector			
	Automotive	Large parts manufacturing	Aerospace
	TRL 7	TRL 7	TRL 7
Part	Gearbox casing Aluminium (AlSi9)	Machine tool column Cast iron (FG 30)	turbine casing Jetethe (Stainless Steel)
			
	FIDIA VSE1066	SORALUCE FR12000	SORALUCE FL3000
Machine			
	MC-SUITE excluding MC-CyPhy will be demonstrated	Complete MC-SUITE will be demonstrated	Complete MC-SUITE will be demonstrated

Consortium

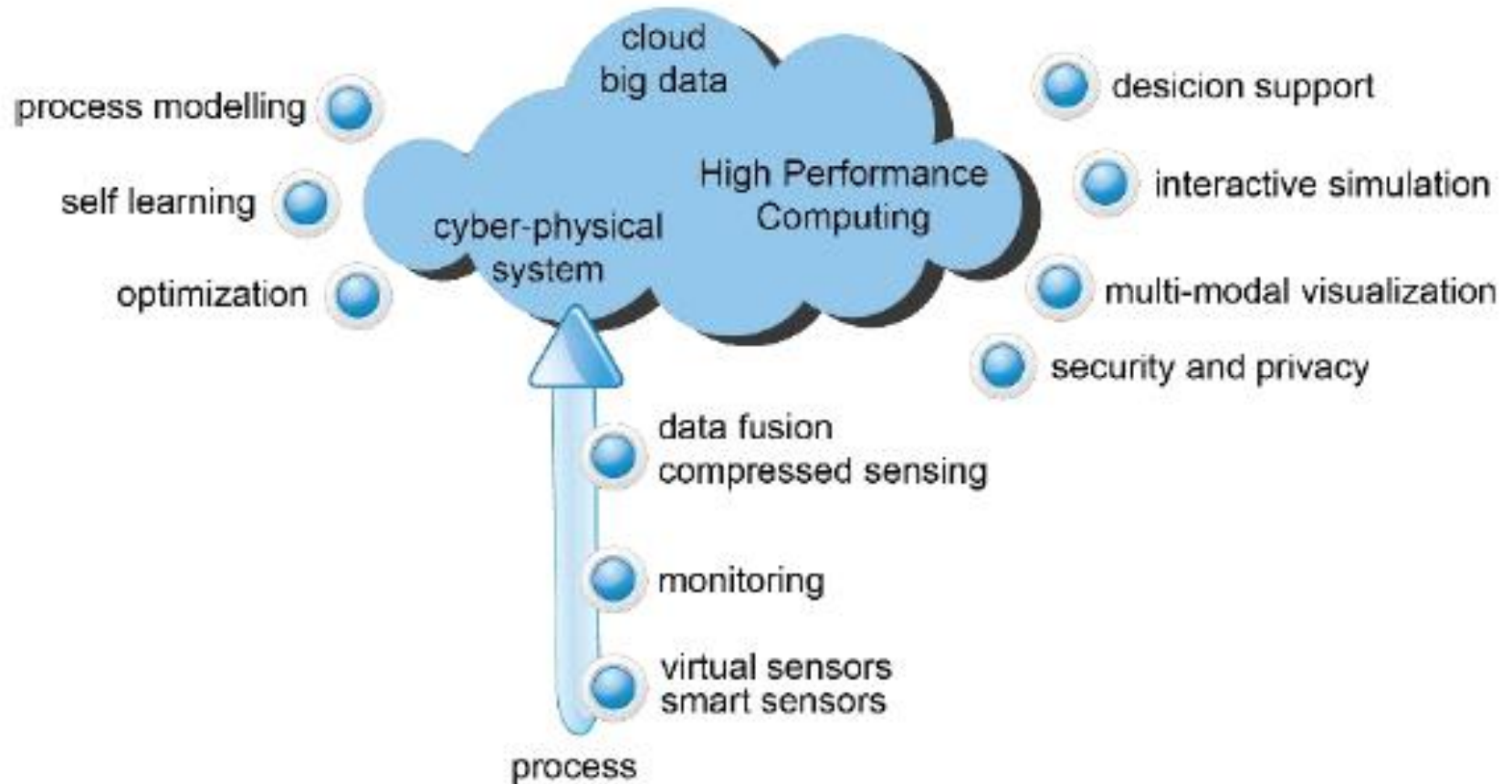
The combination of manufacturing technologies and ICT is at the core of the construction of this consortium resulting in an **exact balance between ICT and manufacturing partners**. The unique combination of skills and expertise required for the project including 6 SMEs, 2 universities, 2 research centres and 2 large companies.



Key words of MC-Suite



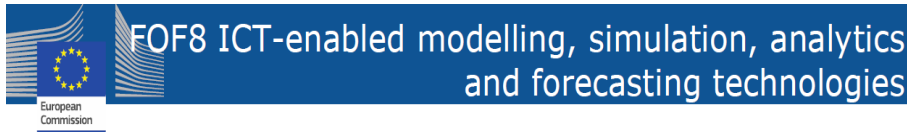
ICT technologies that empower manufacturing process



Partners roles & interdisciplinarity

Partner	Company type	Manufacturing process modelling	Geometric modelling	High performance computing	Advanced visualization	Multiobjective optimization	Monitoring	Cloud infrastructure	Data-mining	Artificial intelligence	Security	Exploitation	Demonstrations
IDK	Research	●	●				●		●	●		●	
CED	SME						●						
TAG	SME								●				
AER	SME												●
GMX	SME		●		●								
ACE	SME			●		●							
DIG	SME											●	●
SOR	Large												●
FID	Large		●										●
MU	Academic	●				●			●		●		
SIN	Research							●			●		
UNO	Academic					●		●	●	●			

Related projects. Clustering opportunities



Retained proposals and reserve list

RIA small

Modelling and simulation *)
involving multiple phenomena

MAYA

MOTOR

SIMUTOOL

Knowledge-based systems
exploiting Big Data/CPS

(MAYA)

IMPROVE

MC-SUITE

RIA large

Integrated information management systems
for product-process-production systems

OPTIMISED

Advanced computer aided technologies
(CAx)

CAXMAN

FOAM

Reserve list

*) 2,5 Mill. C budget have been transferred from FOF9

communication
synergies conflict-avoidance
industrial-audience
teamworking worldwide-scope
EC-aligned market-oriented

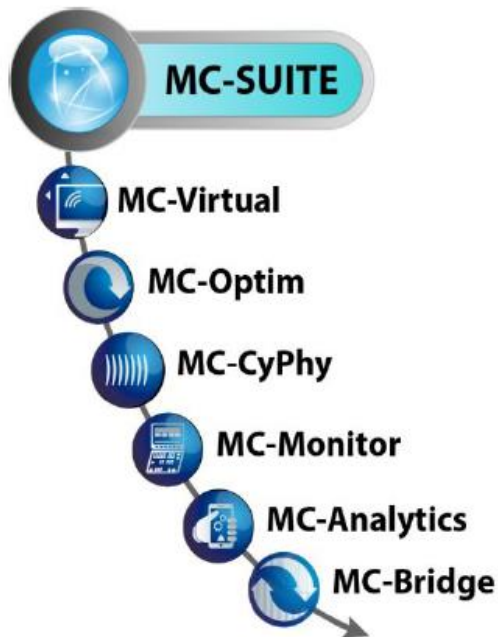
I4MS

Area 1: Cloud services and simulation, Knowledge-based tools and integrated product-process design and simulation

AMEPLM(F), ARUM, LINKEDDESIGN(F), CLOUDFLOW, CLOUDSME, FORTISSIMO, I4MS-GATE, APPS4AME, CAPP-4-SMES, DES-MOLD, DREAM, MUSIC, FORTISSIMO2, MAYA, MC-SUITE, MOTOR, OPTIMISED, TWIN-CONTROL, I4MS-GROWTH

Key Data

HORIZON 2020



- **Project start:** October 2015
- **Project end:** September 2018
- **Nº partners:** 12 from 7 countries
- **EC contribution:** 4M€
- **Project leader:** IK4  IDEKO
Research Alliance
- **Primary coordinator:** Juanan Arrieta
- **Scientific coordinator:** Xavier Beudaert
- **Contact:** jarrieta@ideko.es
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