

Digital manufacturing

M⁴ Meggitt Modular Modifiable Manufacturing

June 11th, 2018 – SCiP, WMG Coventry

MEGGITT

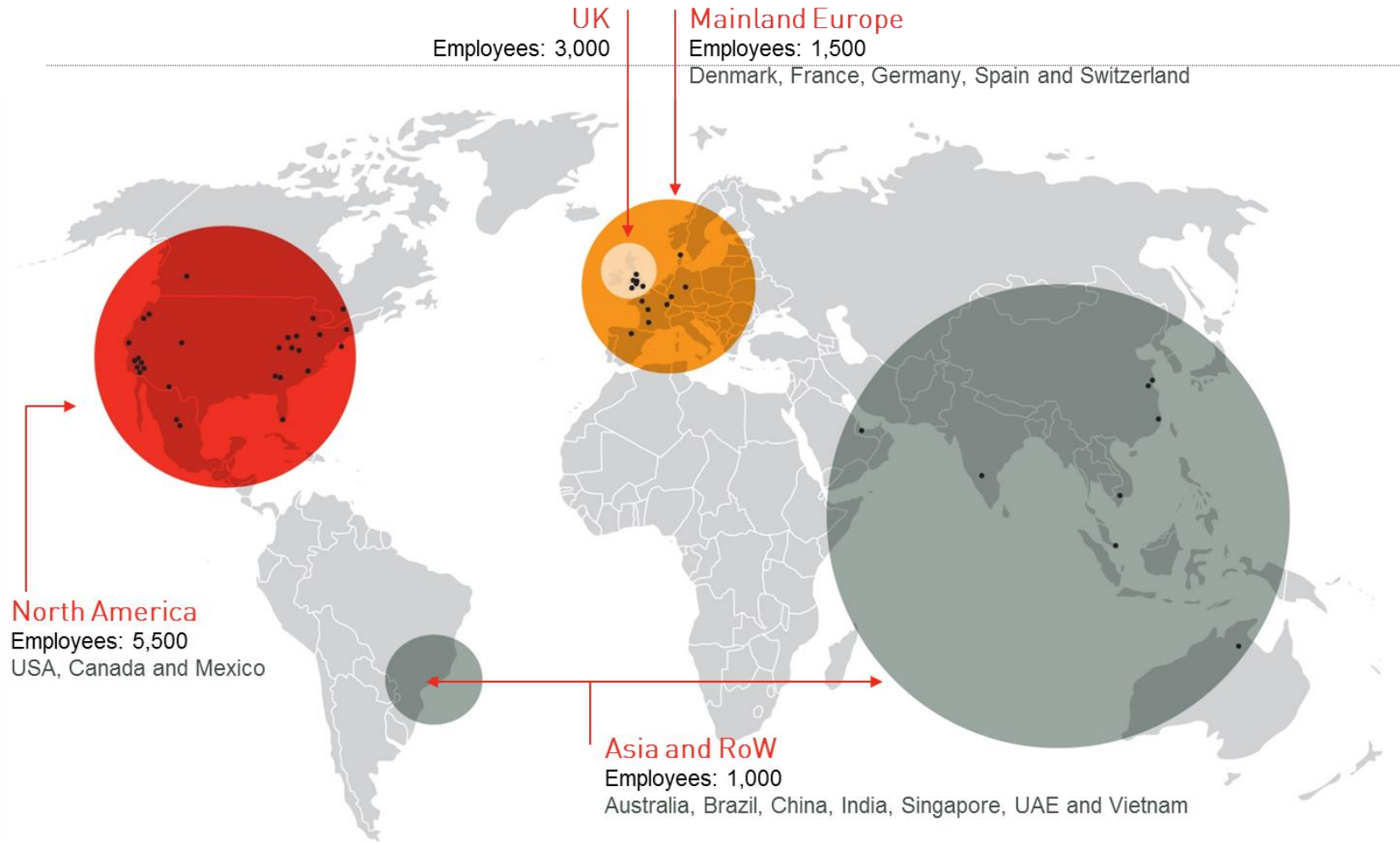
Leading technology positions

Meggitt divisions

Aircraft Braking Systems	Control Systems	Polymers & Composites	Sensing Systems	Equipment Group
<ul style="list-style-type: none">» Wheels» Brakes» Brake control» Landing gear control» Nose wheel steering» Landing systems monitoring	<ul style="list-style-type: none">» Safety systems» Thermal management» Flow and motion control» Industrial controls	<ul style="list-style-type: none">» Sealing solutions» Fuel containment and systems» Complex composite structures» Ice protection» Engine components» Radomes	<ul style="list-style-type: none">» Condition monitoring systems» High performance sensors» Power management» Flight displays	<ul style="list-style-type: none">» Threat simulation» Combat support» Speciality components



Global Footprint



M⁴ Vision

Flexibility, Visibility, Optimisation

A modular and modifiable factory having flexible production lines

with interconnected and monitored assets that is part of a

wider manufacturing network of Meggitt factories.

M⁴ Lab Architecture



Simulation & Optimisation



Digital Picking
Instructions



Digital Twin &
Working Instructions



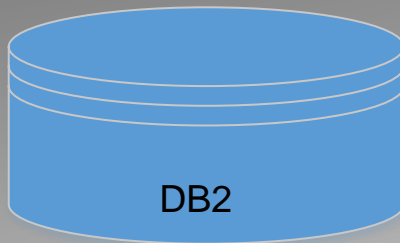
Network
Service Interface



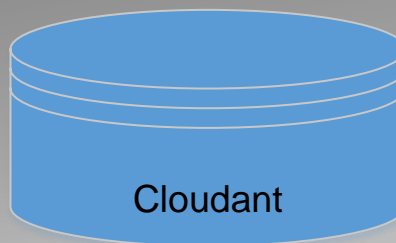
Product / Factory
/SPC Analytics



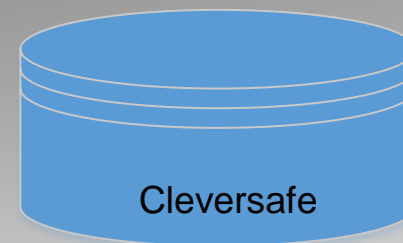
Simulation Analysis



DB2



Cloudfant



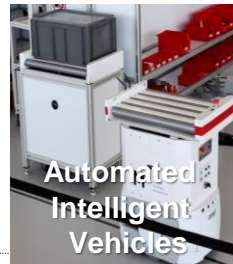
Cleversafe



Intelligent Kitting



Smart-Boxes



Automated
Intelligent
Vehicles



Intelligent Workbench
CLAAWII



German
RepRap
ALM350pro

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M⁴ Lab

Video



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M⁴ People

- » Human factor is essential in our plans
 - Not about screens/displays and UIs
 - Making a system from which we can learn, share and improve

- » Making a start
 - Building a team with the right skills
 - Involve the users (early)
 - Demonstration lab
 - Remove the mystery – explain and trial
 - Problem solving/workshops – make it useful
 - Improve based on feedback
 - Introduce technologies to the shop-floor

M⁴ Next Steps



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M⁴ Thank You

- » Start of a long but valuable journey

- » Thank you to
 - ATI and BEIS
 - IBM
 - Catapults – AMRC and The MTC
 - Cranfield University
 - And mostly, Meggitt production staff