MTC & HVM Catapult support for the Robotics sector

Mike Wilson
Chief Automation Officer
• Created in 2011
• Independent Research and Technology Organisation (RTO)
• To bridge the “valley of death” – the gap between academia and industry
• Prove innovative manufacturing concepts
• Manufacturing system solutions
• Apprenticeships & Future Skills
HIGH VALUE MANUFACTURING CATAPULT

NMIS
National Manufacturing Institute Scotland

CPI
Centre for Process Innovation

NAMRC
Nuclear Advanced Manufacturing Research Centre

AMRC
Advanced Manufacturing Research Centre

MTC
Manufacturing Technology Centre

WMG
Warwick Manufacturing Group

NCC
The National Composites Centre
HVM CATAPULT SERVICES

- Performance testing:
  - measuring capability and assessment against specifications
  - tests prior to actual environment testing
- Accelerated life testing
- Advice on safety and standards
- Simulation studies
- Industrialisation
  - Product design advice/consultancy
  - Manufacturability
- Access to membership and wider industry
  - Advice from target markets
  - Real world testing
- Development of training programmes & manuals
- Support for funding applications
- Access to wider automation supply chain
- Promotion & exposure
THE GO TO PLACE FOR AUTOMATION & ROBOTICS

mike.wilson@the-mtc.org  www.the-mtc.org  automation@the-mtc.org
RAS Capabilities

Ben George
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THE CATAPULT TEST CENTRES – A NATIONAL CAPABILITY

- EOWDC (Vattenfall)
- FLOWIC
- LDT - Demonstration Turbine
- DARE Centre
- NOAH
- 5G PORTAL

Full TRL support from concept to commercialisation
DARE – DIGITAL, AUTONOMOUS & ROBOTIC ENGINEERING

- Command and control rooms
- Live asset monitoring systems
- Indoor assembly stations and storage
- Mechanical and electrical workshop

- Dry and wet dock
- Simulation seabed
- Blade sections
- Drone flying zone
5G PORTAL

- Private 5G network deployed across:
  - Operational wind farm
  - Operations and Maintenance port
  - In-field solar-powered research buoy

- Lab space
  - 5G onboarding lab
  - Operational data payload transfer
  - Data analysis and simulation/ modelling

Image credit: Jet Connectivity
OFFSHORE ASSETS

LDT – Demonstration Turbine
- Instrumented, active working demonstration turbine
- Nearshore structure
- Vessel / land access

Lynn & Inner Dowsing – Grimsby
- Collaboration Agreement
- XceCo, GLID
- 54 SGRE 3.6 MW Turbines
- Monopile foundations
- Operated from Grimsby

EOWDC – Aberdeen Bay
- Collaboration Agreement
- Vattenfall, Aberdeen region, EU
- 11 Vestas V164-8.0 MW Turbines
- Suction-bucket jackets
- Distance from shore ~3km

NOAH – Offshore demonstration asset
- Instrumented met mast
- Inspection to foundation structure
- 40 metres depth
FUTURE

Simulation & Digital Twin Environments

• STUDS
  • RTI for RAS development and nested systems

• DOME
  • Common, high fidelity digital twin hosting environment

Offshore Demonstration Area

• 1 km² Ongoing Development
• South of the Blyth NOAH met mast
• Inshore of the existing EDF windfarm
• Will provide representative conditions for testing technology in an offshore environment.
CONTACT US

Email us: info@ore.catapult.org.uk
Visit us: ore.catapult.org.uk

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