Identification of the installation/facility :

Country: UK
Location (city): Ansty Park
Name of the facility: Manufacturing Technology Centre
Date of construction or of acquisition or of main refurbishment: 2011
Owner: Manufacturing Technology Centre Limited
Contact point: +44 844 477 6355

Internet site: www.the-mtc.org

Technical characteristics:

1 - Type of infrastructure

Wind tunnel	☐
Propulsion bench	☐
Structures facility	☐
Material facility	☐
Simulator (ex. Flight simulator, tower, …)	☐
Flight test bed (aircraft, embedded facilities, …)	☐
Supercomputers	☐
Other	☒

2 - Main technical characteristics

3 - Research domains which can be addressed (refer to ACARE taxonomy http://www.acare4europe.com/docs/ASD-Annex-final-211004-out-asd.pdf)

Assembly, Fabrication & Joining

- High Integrity fabrication
- Net Shape Manufacturing
- Advanced Tooling & Fixturing
- Intelligent Automation

High Integrity fabrication

- Rotary and linear friction welding, laser welding, EB processing, high accuracy arc welding, and electronics assembly/fabrication processes
- Equipment and process proving and optimisation for demanding joining tasks
- Process analysis & modelling to develop robust industrial joining processes and procedures
- Use of automation to achieve quality and productivity targets
- Pre-production runs to demonstrate process capability prior to full scale deployment
- Implementation support and technology transfer to end user

Net shape manufacture

- Net Shape Hot Isostatic Pressing
- Direct Laser Fabrication using blown powder
- Direct Laser Deposition using powder bed

Advanced tooling and fixturing

- Implementation of novel, reconfigurable tooling methods & solutions

- Modelling and simulation of part-fixture-tool behaviour
- Understanding input and variation to fixture & tooling design
- Development of reconfigurable jigs for different variant usage
- Definition of verification methodologies
- Development of adaptive, active and self-learning fixtures and tooling
- Metrology-guided self-aligning fixtures
- Self-healing tooling

Intelligent automation systems

- Labour intensive and complex manual operations need to be automated to reduce variation, re-work, and costs and improve productivity
- Introduce automation to reduce exposure in hazardous conditions
- Decision tools for an organisation-wide strategy - where best to apply intelligent automation
- Develop standardised methods and practices within a systems integration framework
- Proving out automated solutions given part variations in small volume production
- Knowledge capture and management as a major enabler for intelligent automation systems design, implementation and through life operation

4 - *Main (or specific) associated measurement techniques*

5 - Operational status
- Fully operational in 2011

6 - picture available ?
- if yes add the picture (one or two ;external view and internal view) as an extra file with the filled questionnaire

Financial elements:

Replacement cost (M€uros)

Less than 10	☐
10 to 30	☐
30 to 60	☒
60 to 100	☐
More than 100	☐

Practices concerning:

Access policy -contract
Support - none

Origin of information ('signature'): author and date