



Identification of the installation/facility :

Country: The Netherlands
Location (city): Delft
Name of the facility: SIMONA Research Simulator
Date of construction or of acquisition or of main refurbishment: 2000
Owner: Delft University of Technology
Contact point: ir. Olaf Stroosma (simona-ae@tudelft.nl)
Internet site: www.simona.tudelft.nl

Technical characteristics:

1 - Type of infrastructure

Wind tunnel	<input type="checkbox"/>
Propulsion bench	<input type="checkbox"/>
Structures facility	<input type="checkbox"/>
Material facility	<input type="checkbox"/>
Simulator (ex. Flight simulator, tower, ...)	<input checked="" type="checkbox"/>
Flight test bed (aircraft, embedded facilities, ...)	<input type="checkbox"/>
Supercomputers	<input type="checkbox"/>
Other	<input type="checkbox"/>

2 - Main technical characteristics

Custom-built research flight simulator with high-performance 6-DoF hydraulic motion system, 180x40 degree collimated visual system and generic flight deck. Loaded control column, sidestick, center stick/collective and rudder pedals are available. Flight deck instrumentation can be programmed on LCD displays.

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

1. Aircraft Avionics, Systems & Equipment
Evaluation of new flight deck displays and concepts, as well as new flight control algorithms
2. Flight Mechanics - Performance
Evaluation of new approach procedures (e.g. Continuous Descent, 3-Degree Decelerating)
3. Integrated Design & Validation
Development and evaluation of simulator technology, simulator fidelity, human factors analysis, evaluation of autonomous operations (terrain awareness, airborne separation)
4. Air Traffic Management
Evaluation of new concepts with human-in-the-loop (e.g. 4D Guidance)
5. Human Factors
Pilot workload prediction, pilot modelling
6. Innovative Concepts & Scenarios
Pilot-in-the-loop evaluations of innovative concepts and scenarios

4 - Main (or specific) associated measurement techniques



Simulated aircraft parameters, pilot control inputs, questionnaires, eye-tracking and electromyography are available dependent on research needs.

5 - *Operational status*
Fully operational

6 - *pictures*



Financial elements:

Replacement cost (M€uros)

- | | |
|---------------|-------------------------------------|
| Less than 10 | <input type="checkbox"/> |
| 10 to 30 | <input checked="" type="checkbox"/> |
| 30 to 60 | <input type="checkbox"/> |
| 60 to 100 | <input type="checkbox"/> |
| More than 100 | <input type="checkbox"/> |

Practices concerning:

Access policy is contract access for research and free or contract access for education (MSc or PhD students at TU Delft)

Development supported by national government, operational support by Delft University of Technology. Some research projects are supported by national and European government, as well as by third parties from industry and research organizations.

Origin of information

Olaf Stroosma, February 15 2011