



Identification of the installation/facility :

Country: Germany
Location (city): Goettingen
Name of the facility: Do 728 cabin test facility
Date of construction or of acquisition or of main refurbishment: June 15,2007
Owner: German Aerospace Center (DLR)
Contact point: Johannes.Bosbach@dlr.de
Internet site: <http://scart.dlr.de/site/test-facilities/do728>

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 type="checkbox"/> |
| Flight test bed (aircraft, embedded facilities, ...) | <input checked="" type="checkbox"/> |
| Supercomputers | <input type="checkbox"/> |
| Other | <input type="checkbox"/> |

2 - Main technical characteristics

The Do 728 cabin test facility is a test bed for aircraft cabin research and predicated on the grounded test aircraft 728 Nr. 1 of Fairchild Dornier. It provides a realistic and sound cabin structure, which can be comparatively easily modified or extended, as the modifications do not require permit to fly.

Cabin:

- „single-aisle“
- 16.9m x 3.25m x 2.15 m (L x W x H)
- 14 seat rows with 5 seats each
- Ventilation systems:
 - mixing ventilation,
 - cabin displacement ventilation and
 - ceiling based cabin displacement ventilation
- to be used solely or combined
- External HVAC-System with controlled volume flow rate, temperature and humidity
- Panel audio system for realistic simulation of aircraft cabin noise
- Computer controlled LED system, enabling advanced illumination scenarios

3 - Research domains which can be addressed

- Environmental Control System
- Human Factors
- Smart Materials and Structures
- Noise Reduction
- Acoustic Measurements and Test Technology
- Passenger (and Freight) Systems



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

- 70 thermal passenger dummies
- Particle Image Velocimetry (several systems, including stereoscopic and large scale options)
- local temperature probes
- humidity sensors
- omnidirectional hot-film and thermistor probes for velocity and temperature measurements
- infrared thermography

5 - *Operational status*: Fully operational (122 / 200 days of operation in 2015)

6 - *Picture*:



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:



AirTN
Air Transport Net



Access policy : via contract

Support: regional, national

Comments:

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

Dr. Johannes Bosbach, 6th September 2016