Identification of the installation/facility:

Country: France
Location (city): Saclay
Name of the facility: A06
Date of last refurbishment: 1990
Owner: DGA Aero-engine Testing
Contact point: Franky Le Mézo
Internet site: http://www.defense.gouv.fr/dga/la-dga2/expertise-et-essais/dga-essais-propulseurs

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

Internal diameter of the vein: 305 mm
Length of the test assembly (Chamber + rings of interfaces upstream and downstream):
- Maximum 3.53 m
- Minimum 3.31 m

Diameter of the specimen: approximately 1.20 m
Sliding Joint:
- Maximum length: 750 mm
- Minimum length: 530 mm

Tests in sub-atmospheric conditions:
- Minimum Maximum Pressure 15 kPa 95 kPa
- Flow rate 2.3 kg/s for all conditions
- Temperature -35°C +160°C

Tests in pressure conditions:
- Pressure = 140 kPa
- Flow rate = 4.5 kg/s
- Maximum temperature = +160°C

Fuel system:
- Pressure = 40 bars
- Fuel flow = 400 l/h
- Minimum temperature = +37 °C without conditioning and -30 °C with conditioning

The exhaust maximum temperature is ~ 1,500 °C.

3 – Research domains which can be addressed (refer to ACARE taxonomy)

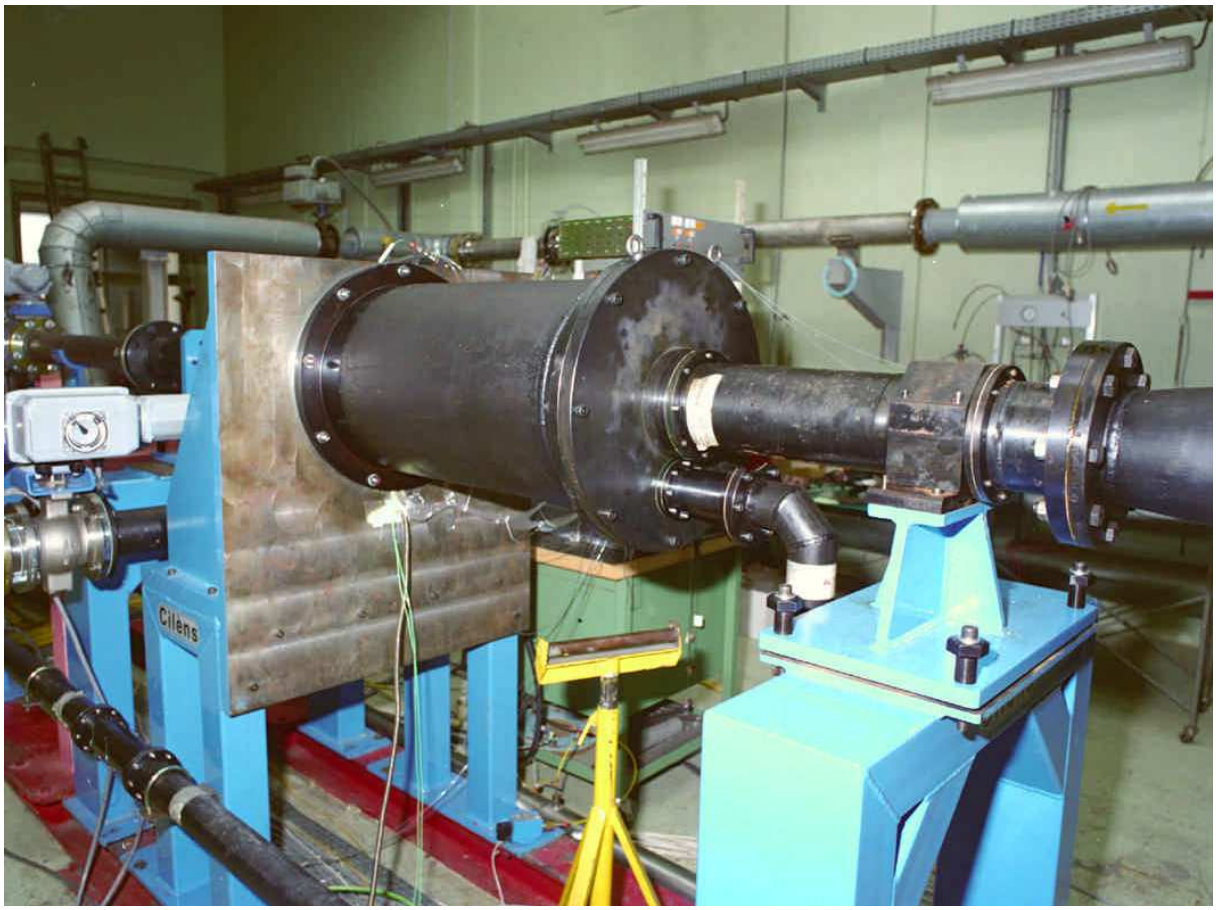
Propulsion – Performance
Propulsion – Combustion
Propulsion – Air-breathing propulsion
Propulsion – Engine controls
Integrated Design & Validation (methods & tools) - Flight/Ground Tests

4 - *Main (or specific) associated measurement techniques*
The measurements capabilities are the following:
- Pressure: 49 channels
- Temperature: 48 by thermocouples, 21 by probes
- Electrical lines: 36 lines

5 - Operational status
Fully operational in 2013

6 – Picture:

External view



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 (regional, national, European, private, …)

Comments:

Combustion test rig fitted with icing capabilities

Origin of information: Franky Le Mézo - Avril 2013