The CSIR is home to several wind tunnel facilities that form a critical part of the CSIR’s ability to operate as a Defence Evaluation and Research Institute (DERI) in Aeronautics. These facilities are unique in the Southern hemisphere.

Subsonic wind tunnel capability

**Low speed wind tunnel**

**Specifications**
- Mach no. range: M0 to M0.33 (0 to 120m/s)
- Test section: 2.14m x 1.53m x 5.2m
- Continuous, atmospheric tunnel
- Reynolds number: 6.6 x 106/m

**Test Capabilities**
- Force measurement
- Pressure Measurement
- Flow Visualisation (oil flow, mini tufts)

**Seven metre wind tunnel**

**Specifications**
- Speed: 2 to 32m/s
- Test section: 7.5m x 6.5m x 13m
- Continuous, Eiffel

**Test capabilities**
- Force and pressure measurement/
  Flow field mapping
- Rotor test rig (scaled rotor tests)
- Car balance
- Wake measurements
- UAV test rig
- Propeller test rig
Supersonic capabilities

Medium speed wind tunnel

**Specifications**
- Mach no. range: M0.2 to M1.3
- Test section: 1.5m x 1.5m, 4.5m
- Reynolds number: 31x106/m (M0.8)
- Closed circuit, variable pressure, continuous wind tunnel
- Stagnation pressure: 20 to 250kPa

**Test capabilities**
- Captive trajectory (store separation) tests
- High angle of attack tests
- Force and pressure measurement
- Flow visualisation
- Flutter testing
- Dynamic testing capability
- Aerodynamic damping tests

High speed wind tunnel

**Specifications**
- Mach no. range: M0.6 to M4.3
- Test section: 0.45m x 0.45m
- Run time: 10 to 30 seconds
- Reynolds number: 185 to 30 seconds
- Stagnation pressure range: 70 to 1200kPa
- Blow down wind tunnel

**Test capabilities**
- Force measurement
- Pressure measurement
- Inlet flow measurement
- Flow visualisation (colour schlieren)

Inlet tests

- Characterisation of inlet performance – isolated
- Characterisation of installed inlet performance
- Characterisation of airframe performance

Contact details:
John Morgan
e-mail: jmorgan@csir.co.za

Kimal Hiralall
e-mail: khiralall@csir.co.za

www.csir.co.za