

Satellite Industry

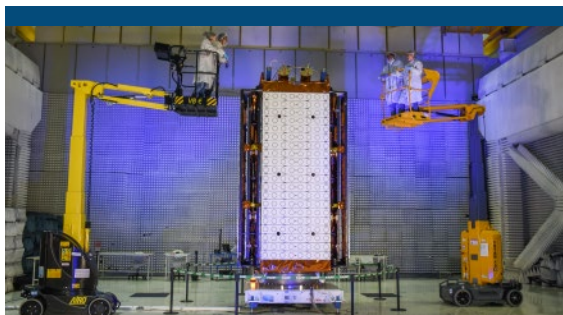


We are an Argentine hi-tech company that provides services of excellence in the evaluation and control of complex systems oriented to the satellite, aeronautics, electronics, automobile, defense, energy and capital goods industries in general.

What do we do?

We seek to satisfy the industry's needs by providing testing, calibration and measurement services for quality control:

- Dimensional controls and alignments during satellite manufacturing, assembly and final testing.
- Mechanical vibration, drop, EMI/EMC, acoustic vibrations and thermo-vacuum testing.
- Sub-systems testing; such as solar panels, electronic boxes, Star Tracker, attitude control systems, solar sensors, secondary mechanical supports and structures.



Some of the projects we worked on:

- ARSAT-1 EQM y PFM (2013-2014)
- ARSAT-2 (2015)
- SAOCOM 1A (2018)
- SAOCOM 1B (2019)

We are currently participating in the controls and tests of SABIA-Mar and ARSAT-SG1.

What are our capabilities?



Mechanical vibrations

We can carry out mechanical vibration tests of system or subsystem, they can be development, qualification and acceptance tests. These can be *Random, Sine, Sine Burst, Dwell, Classical Shock*.

Standards we comply with:

MIL-STD-810H (methods 514, 516, 517, 525 and 528); RTCA/DO-160 (sections 7 and 8); MIL-STD-167-1A; MIL-STD-202G (methods 201, 204, and 214) and MIL-STD-883 (2005.2, 2006.1, 2007.3 and 2026).

Equipment:

- Shaker LDS® V8
- Shaker LDS® V994



Mass properties measurement

We carry out measurements of mass, center of gravity and moments of inertia of tested system or subsystem.

Equipment

- Mass scale that measures up to 3500 kg with an accuracy of 0.2 kg.
- CG WS7 Measuring Device.
- Moment of Inertia Measuring Device M7.
- L adapter L for center of gravity and moment of inertia measurements.



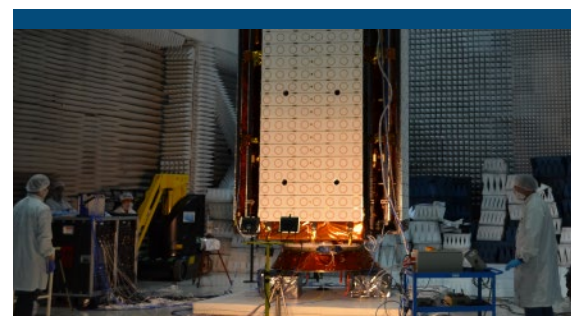
Acoustic vibrations

Tests are performed using the Direct Field Acoustic Testing method (DFAT) of system or subsystem. They can be development, qualification and acceptance tests.

The acoustic environment that the tested equipment will face during all or part of its lifetime is reproduced, generating vibrations in a wide frequency range (spectrum from 25 Hz to 12 kHz, Overall SPL broadband 142 dB). We have an acoustic system that allows a speaker array with a maximum height of 6.4 m and an internal diameter of 6 m.

Equipment:

- Spectral Dynamics JAGUAR 2570
- 15 control microphones + 1 monitoring microphone



Drop Test

We perform drop tests that allow recording signals in a very short acquisition time in order to measure the response to mechanical shock and temporary vibrations.

Equipment:

- Up to 266-channel Jaguar system
- 30-channel Pulse portable system

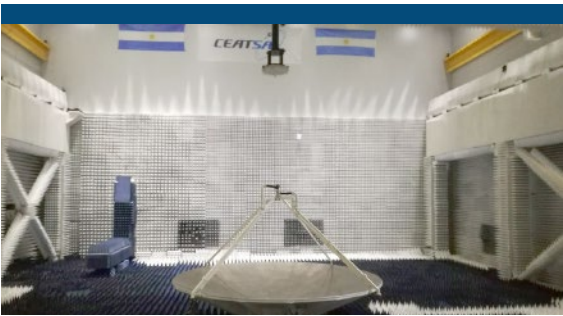


Modal analysis tests

The tested device is subjected to a low-level mechanical excitation at several points of the structure to measure its dynamic response and validate the design data.

Equipment:

- 2 Shakers of 1 kN
- Instrumented hammers
- Force sensors



Antenna performance measurement

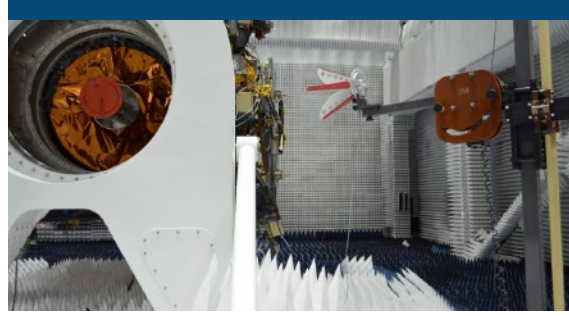
We make spectrum measurements, by means of near field scanners (flat or spherical), for high or low gain and directivity antennas. We perform RF component characterization and antenna calibration.

Standards we comply with:

SAE ARP958 and MIL-STD-461G.

Equipment:

- Planar scanner NSI® 500H – 20 x 16
- Spherical scanner NSI® 700S – 75



Electromagnetic compatibility tests

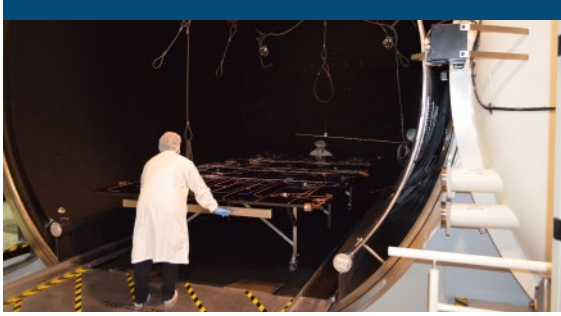
We carry out tests to determine the electromagnetic field generated and the levels of system or subsystem interference or susceptibility. They can be of development, qualification and acceptance test.

Standards we comply with:

MIL-STD-461G (methods CE101, CE102, RE102, CS101, CS114, CS115, CS116 and RS103) and MIL-STD-1541A

Equipment:

- Anechoic chamber of 6.7 m x 4 m x 2.4 m
- Semi-anechoic chamber of 18 m x 21 m x 11 m
- Antennas
- Field sensors
- RF amplifiers and generators
- Spectrum analyzers
- Pulse generators



Thermo-vacuum tests

They can be of system or subsystem development, qualification and acceptance test.

Standards we comply with:

ASTM E2900-12, ECSS-Q-ST-70-02C, ECSS-E-ST-10-03C Rev.1, ECSS-E-ST-10-04C Rev.1 and ECSS-E-ST-31.

Equipment:

Thermo-vacuum chambers: CTVNS (ø4.5 m, length 6 m), CTV1.5 (ø1 m, length 0.8 m), CTV1 (ø0.54 m, length 0.49 m), CTVO (ø4.5 m, length 6 m) and CTVG (ø0.42 m, length 0.25 m).



Environmental tests with and without humidity control

We can perform thermal cycling tests with and without humidity control, at ambient pressures subsystem testing. They can be development, qualification (burn-in test) and acceptance test.

Standards we comply with:

MIL-STD-810H (methods 501.7, 502.7 and 507.6) and MIL-STD-883 (1008.2).

Equipment:

We have several climatic and environmental chambers: HD 527, CE 70-100, DELTA 9076 and 9059, ZSD 608 and ZBD 127.



Calibrations and measurements

We carry out calibration and verification of measuring instruments and equipment, guaranteeing traceability to national and international standards, according to an integrated management system in order to ensure reliability of the measurement results. Our laboratory is able to control the following magnitudes: dimensional, pressure, temperature, humidity, mass, torque, force, vibrations and acceleration.

Besides, we are capable of performing dimensional control of objects and alignment of satellite components, which allows us to meet the challenges of the satellite industry whose standards are increasingly demanding. Controls include the entire production chain, from measurements for reverse engineering, through the control of parts during manufacturing processes, assemblage and alignments between components, to the final control of finished products.

Equipment:

- Laser tracker ION FARO.
- Measurement arm Faro Edge with probes and scanner, and theodolites LEICA TM6100A.



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