

Atos

Space & Avionics

11-03-2019

Trusted partner for your Digital Journey

© Atos – Commercial in confidence

Atos

1

Who we are
...Atos group

We are leader in Digital Transformation

We are a leader in digital transformation serving a global client base.

In this fast-changing world, driven increasingly by data, Atos brings together people, business and technology to create the firms of the future.

We are the Worldwide Information Technology Partner for the Olympic & Paralympic Games.

Atos is a Societas europaea (SE) company and we are listed on the Euronext Paris market.

We operate under the main brands Atos, Atos Syntel, Unify and Worldline.



Worldwide digital
leader & **#1**
leader in Europe



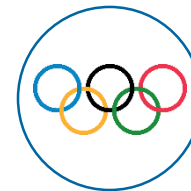
€13 billion
annual revenue



120,000
experts



73 countries



Worldwide IT Partner
of the Olympic and
Paralympic Games

Our expertise to support your digital transformation



Infrastructure & Data Management

We transform today's IT landscapes to future hybrid IT environments.



Business & Platform Solutions

We transform strategic approaches to technology, combining innovative solutions with established ones.



Big Data & Cyber Security

We create competitive advantage for our clients from Big Data, and ensure data is delivered safely and securely to the right parties.



Digital Payments and e-Transactions

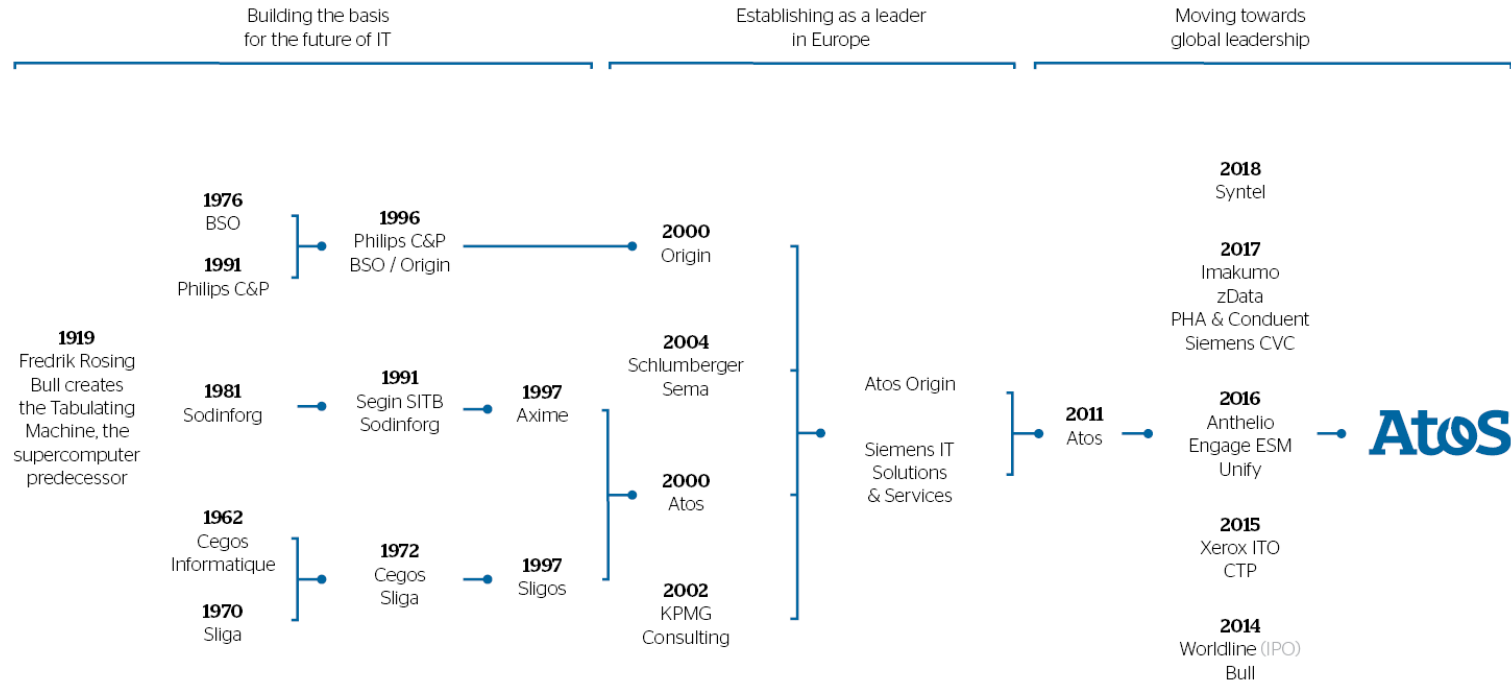
Through Worldline, we provide unrivalled leadership in expert solutions for the fast-changing payment and digital services market.



Unified Communication & Collaboration

With Unify, we combine voice, data and video, to help our customers benefit from a unique collaboration experience.

Serving our customers for over 80 years



2

What we do...
...in the sky and above

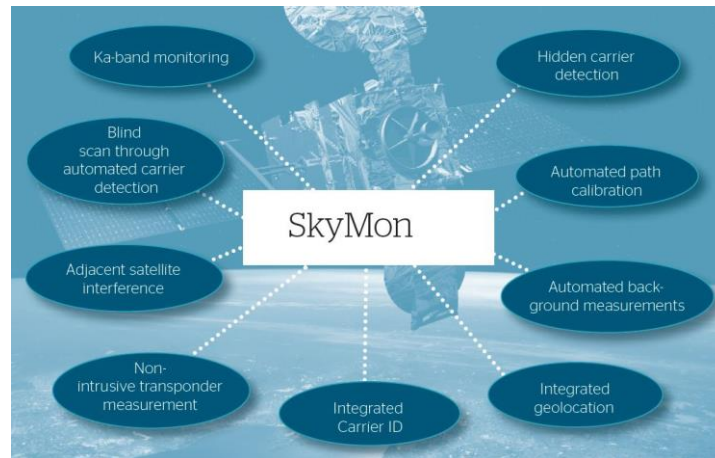
SkyMon – Satellite monitoring and geolocation system

The Challenge



The amount of interferences and anomalies that negatively affect data transmissions increases as a direct side-effect of the growing number of satellites crowding the Earth's orbit. The challenge is to identify and localize these interferences before any serious problems arise.

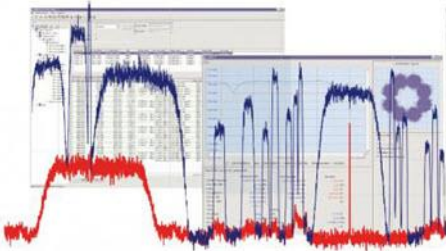
The Solution



SkyMon is a sophisticated automated radio frequency traffic monitoring system that gives you all the necessary tools to continually monitor the links between your satellites and your ground stations from one central hub.

SkyMon applications

Carrier Monitoring



SkyMon ILS



SkyMon ILS ONE



SkyMon VSAT



Satellite Geolocation Service



SkyMon CID

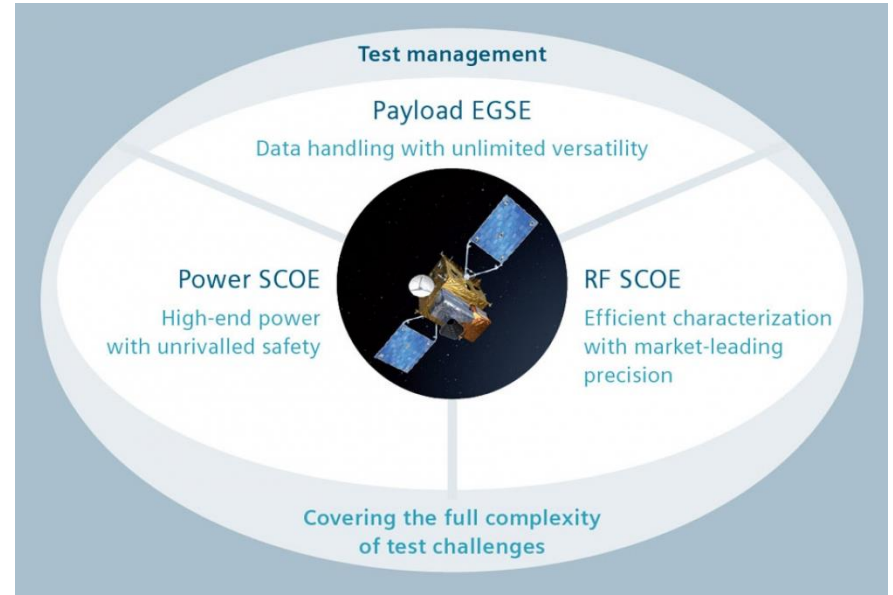


Electrical Ground Support System (EGSE)

Comprehensive Satellite Testing

Atos' Electrical Ground Support Equipment (EGSE) is an integrated suite of electrical satellite testing solutions to make sure that the satellites you are launching work perfectly.

Failure is not an option



EGSE applications

RF SCOE



RF SCOE - tests and calibrates the radio frequency sub-systems with a market-leading degree of precision. The RF SCOE performs fully automated S-, X-, Ku- and Ka-band measurements in the TT&C (Telemetry, Tracking & Command) section of the satellite during assembly of the spacecraft and during space environment testing at the test center facility. It does the same for the mission communication and payload section.

Payload EGSE




Instruments are increasingly sophisticated and hard to test. Utilizing an innovative concept based on the RF SCOE and our Protection Unit for Satellite Testing (ProUST) platform, the Payload EGSE is an extremely flexible solution to reliably test the instruments of navigation, earth observation and telecom satellites.

Power SCOE



The Power SCOE is the reliable solution for powering, monitoring and testing satellite's power subsystem during assembly, integration & test as well as on the launch pad just prior to lift-off. In case of an anomaly, our Protection Unit for Satellite Testing (ProUST) provides an additional protection layer that works independently of the main power supply in order to prevent a single point of failure.

OneWeb



A REVOLUTION IN SATELLITE MANUFACTURING
No one has ever built a satellite in one day... we will build several every day!

TOTAL COVERAGE
Internet to everyone, everywhere on Earth

GLOBAL LOW EARTH ORBIT CONSTELLATION
Providing high-speed internet connectivity equivalent to terrestrial fiber-optic networks



First launch on Feb 28, 2019

2

What we do...
...in the sky and above

Solutions in the sky and above



Ground support

Valorize decades of satellite testing expertise

RF (Radio Frequency) / TT&C (Telecommand, Telemetry and Control) **SCOE (Satellite Check-out Equipment)**

End-to-end solution provider for Payload, Instrument and Power EGSE (Electrical Ground Support Equipment) infrastructures



Quality of service

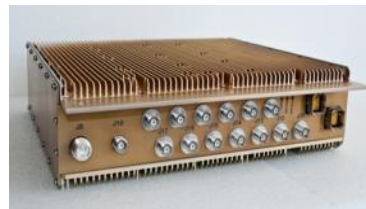
Ensure service quality for satellite communication links

Atos SIECAMs® line

Fully automatic 24x7 RF monitoring.

Integrated geolocation system to quickly resolve interference issues

Increases transponder quality



On-board control

Provide network quality

Mobile network control in aircrafts to ensure terrestrial network quality.



Video protection

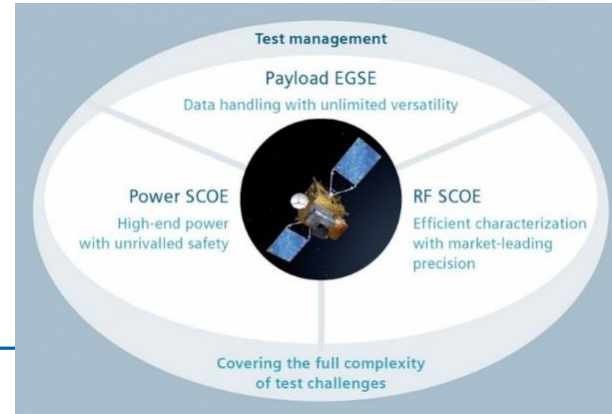
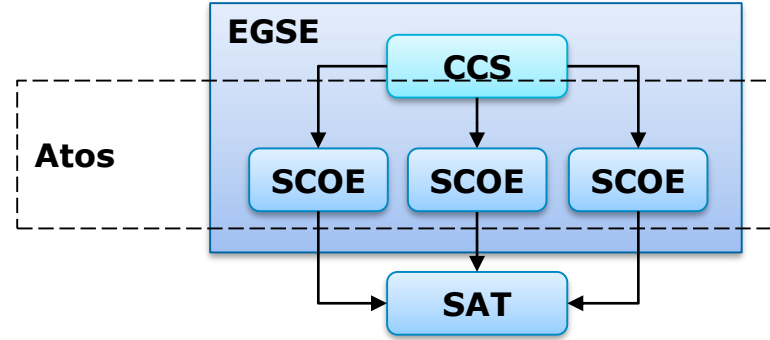
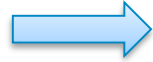
Deliver aircraft security

Video surveillance for aircraft cockpit door and aircraft cabin.

Satellite check-out equipment, satellite communication monitoring
Aircraft network communication unit, video surveillance

Space - EGSE

- ▶ **EGSE** Electrical Ground Support Equipment
Suite of test devices for satellite verification tests
- ▶ **SCOE** Special CheckOut Equipment
Specific test devices
- ▶ **CCS** ... Central Checkout System
- **Power SCOE**
- **Payload & Instruments SCOE**
- **RF & TTC SCOE**
(RF ... Radio Frequency
TTC...Telemetry, Tracking and Command)



Space - Power SCOE

► Power SCOE

- SLP.. Second Level Protection
- SAS.. Solar Array Simulation (**UniverSAS**)
- BS.. Battery Simulation
- BCE.. Battery Conditioning Equipment
- LPS.. Launch Power Supply
- UMB.. Umbilical Power
- Pyro.. Pulse Simulation & Test
- LS... Load Simulation



Space - RF-TTC SCOE

▶ RF-TTC SCOE

- Fully automated tests and calibrations of SAT RF-TTC subsystems
- Used during assembly, integration, verification, checkout
- High precision measurements
- Coverage for UHF-, L-, S-, X-, Ku- up to Ka- frequency bands

▶ RF – suitcase – simulates Sat behavior for ground station tests



Space – Payload – Instruments SCOE



► PL- I SCOE

- Verify data interfaces of onboard equipment in different assembly phases (instruments, board computer etc.)
- Bus communication & simulation (SpaceWire, MilBus,...)
- Discrete and serial interfaces
- Provide payload power
- Sensor data acquisition, simulation & verification
- Actuator monitoring & simulation



3

Who we are
...Croatian team

Atos Croatia



1995 – Within Siemens d.d. existed as business unit known as „CMT“, „SIS SDE“ and PSE established in 1995 in Zagreb. Osijek location opened in 1999 and Split in 2000.

1999 – Location Osijek opened

2000 – Location Split opened

2011 – Atos Croatia established after merger of Atos Origin and Siemens SIS

2013 – Siemens Convergence Creators established

2015 – Acquisition of Bull Croatia

2018 – Acquisition of Siemens Convergence Creators

Atos Croatia managed to develop a network of new local customers, **growing the local business up to 40% of the overall turnover.**

Annual revenue: 20+ million €

Employees: 250+



Who do we have in Space & Avionics



Space & Avionics Team

- ✓ Strong engineering skills; strong PM skills
- ✓ Experience in Power SCOE EGSE product line (ProUST USAS)
- ✓ HW assembly and integration, system integration, end-2-end test
- ✓ Missions:
 - Juice, Sentinel – ESA
 - OneWeb – Airbus

Thank you

For more information please contact:

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The Atos logo is displayed in a bold, white, sans-serif font. The letter 'o' is stylized with a circular cutout in the center. The logo is positioned in the bottom right corner of the slide.