

G.L. Electronic

Czech Company for Ground & Space Technologies

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About Company

ESABD code: 58067

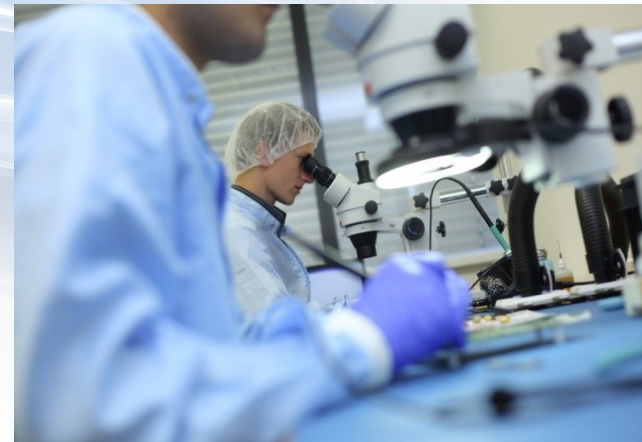
G.L.Electronic was established in 2003, In 2008 was registered as G.L.Electronic Ltd.

- ❑ Manufacturing Hi-rel electronics in the field of Ground and Space technologies
- ❑ Space activity are realized in clean room class 100.000
- ❑ Staff have ESA certifications according to ECSS 70-08/26/28/38 CAT 2 & CAT 3
- ❑ Since 2007 participating on international projects in French Guiana (CSG)
- ❑ Co-cooperations with the Czech Academy of Science, Charles University, VUTB and CEITEC
- ❑ Participation in 4 international projects with partners TAS-I, CGS-OHB, Lux Space, Temis

Clean Room Facility for Space & Hi-Rel Products
Manufacturing Area

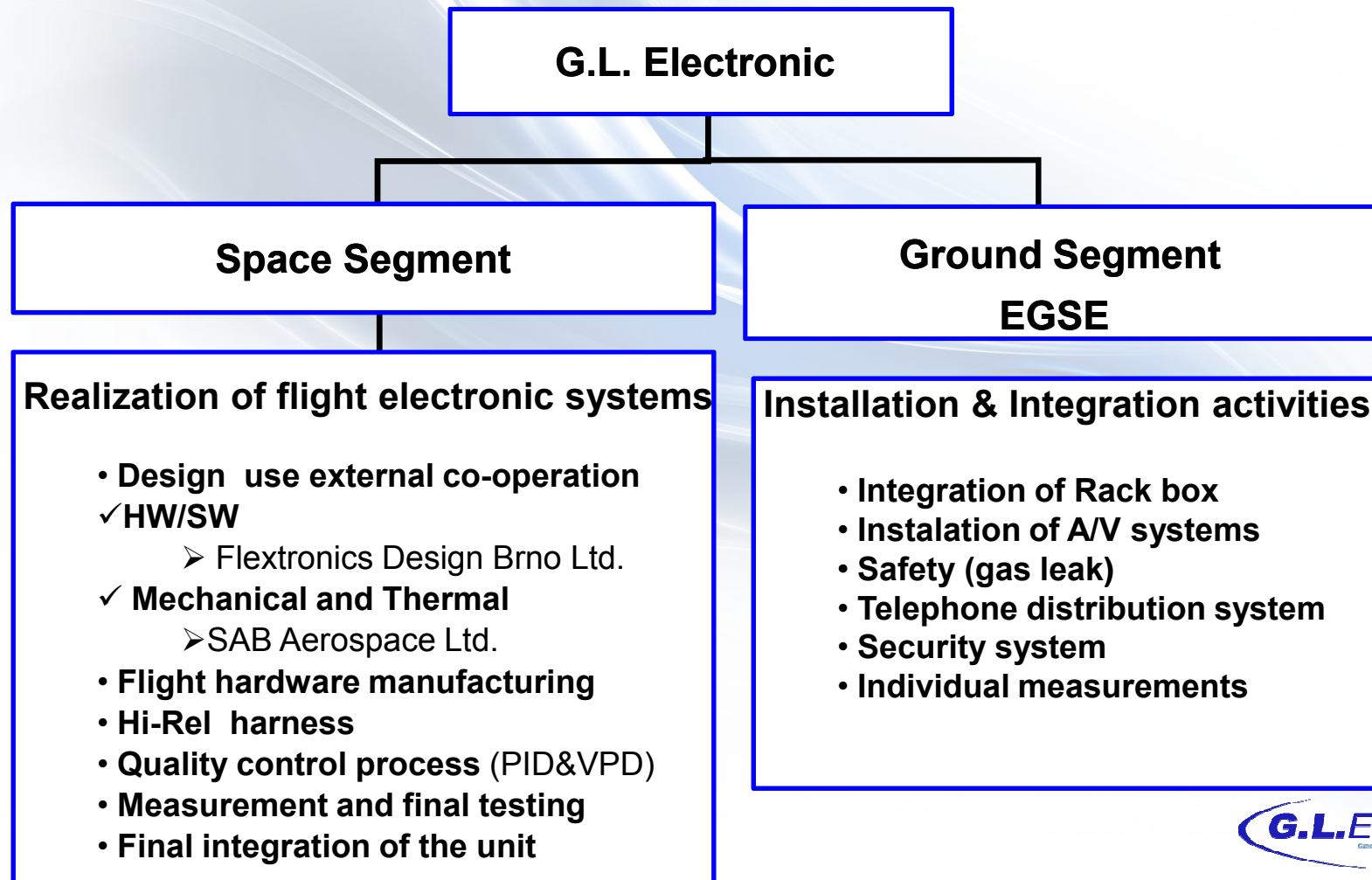


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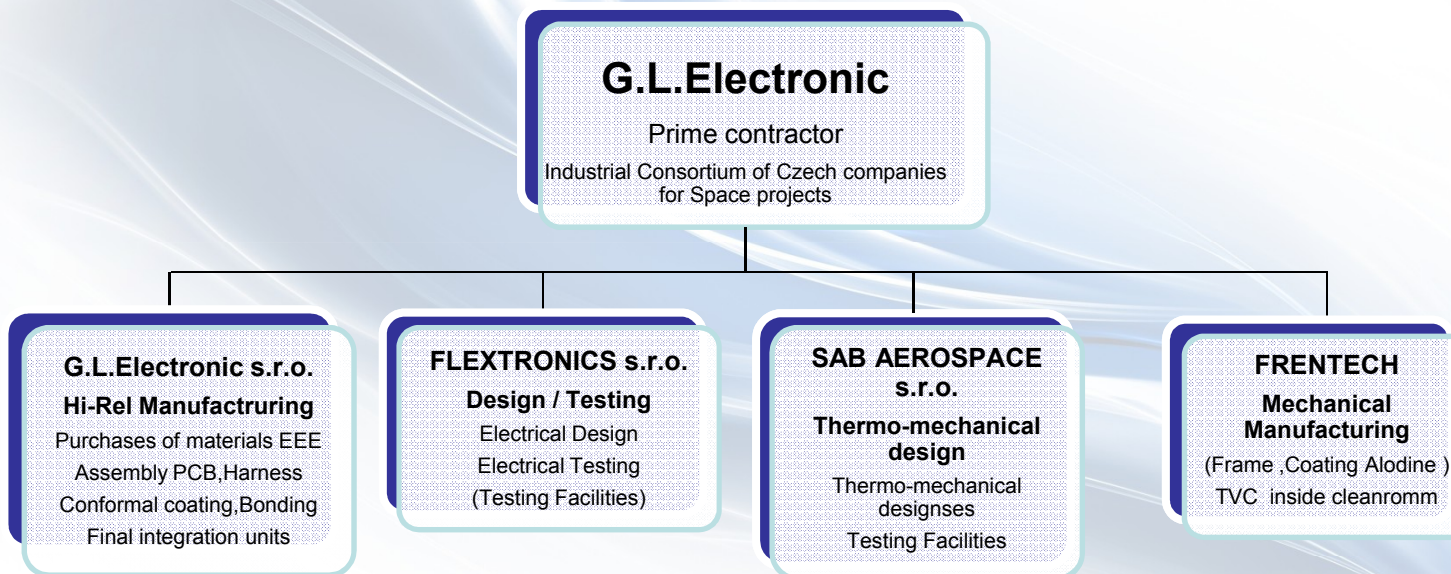


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Professional activities



Industrial Consortium of Czech companies for Space projects



Clean Room - Workplace Brno in Czech Republic

Clean Room: class 100 000 (ISO8)

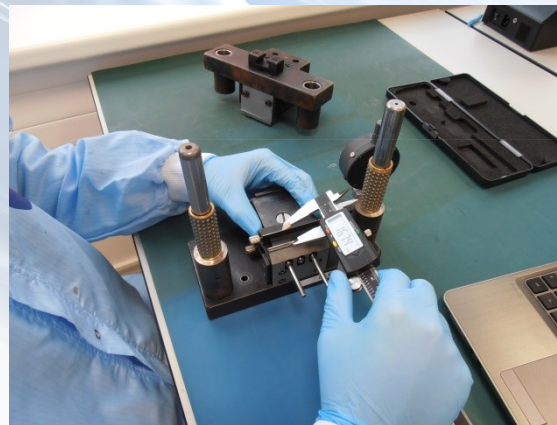
Number of employees :

- Production area 95m²
- Assembly area 70 m²

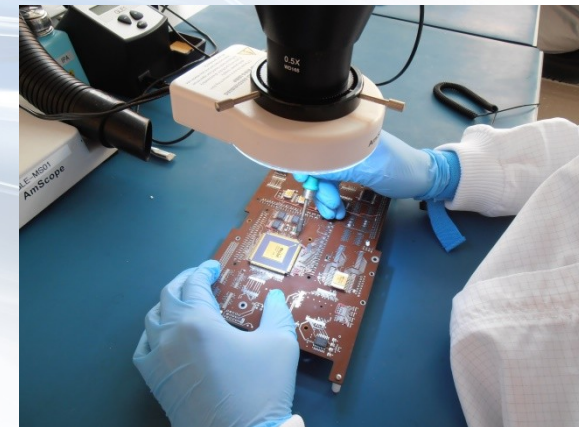
ESA certificates: 7 technicians
Technician spec.: 3 technicians



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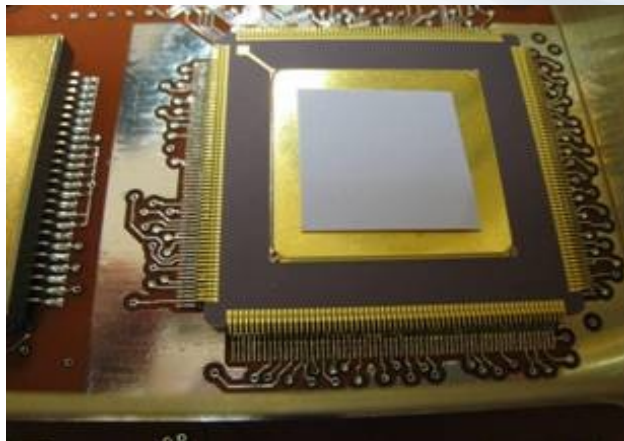
Clean Room Activities : Assembly and Hand Soldering



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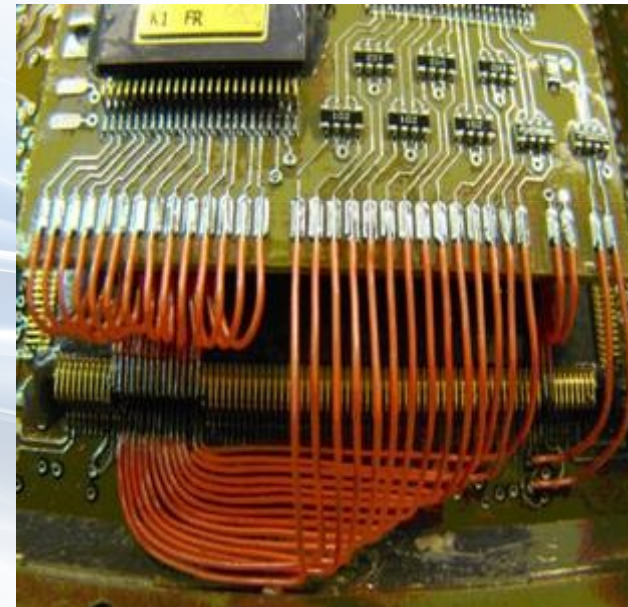
⇐ Assembly and hand soldering of through-hole components

Re-work and modification ⇒



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⇐ Assembly SMD and hand soldering of fine pitch components



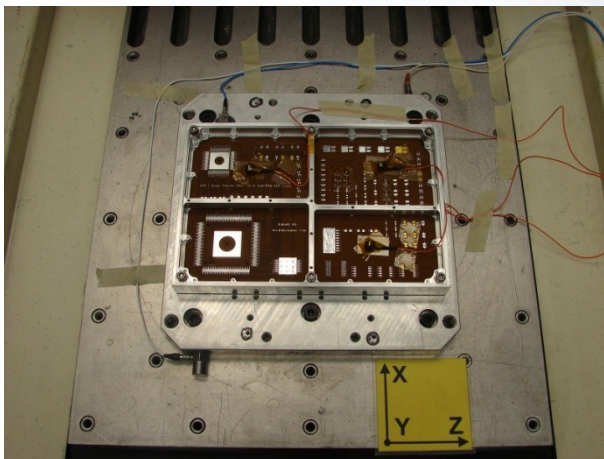
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Clean Room – Measurement and Testing Activities

- ❑ Testing of power distribution Boards, I/O Boards, RF Boards
- ❑ Adjustment of Forward & Backward RF power
- ❑ Analog signals monitoring, temperature sensors calibration
- ❑ Calibration of oscillators (± 0.1 ppm)
- ❑ Testing of boards & final units
- ❑ Full functional Thermal test & Thermal-vacuum test
- ❑ Test Result Reporting
- ❑ Vibration test

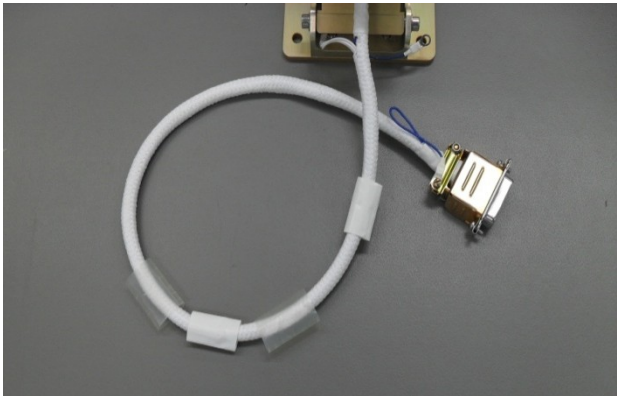


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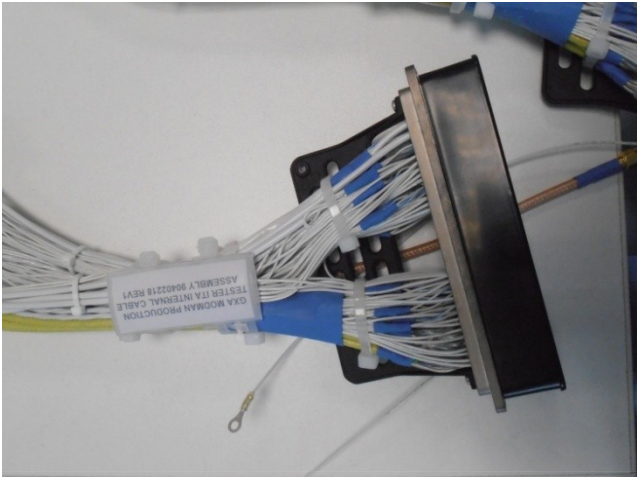
Clean Room Activities : Harness manufacturing



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↶ Cable with connector D'Sub for telecamera

↷ Identification of connectors and cables



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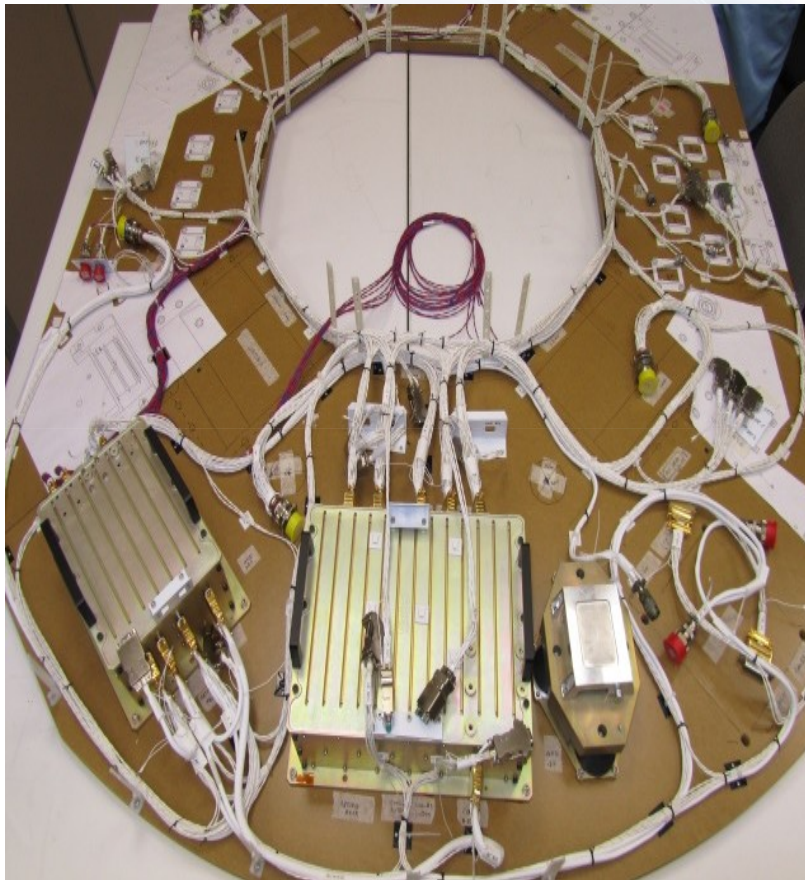
Circular- size 20 ⇔

↶ RF cables



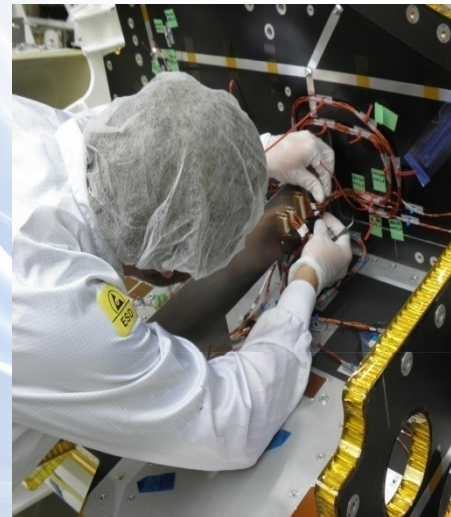
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Clean Room Activities : Harness integrations on the MockUp



Mockup minisatellite

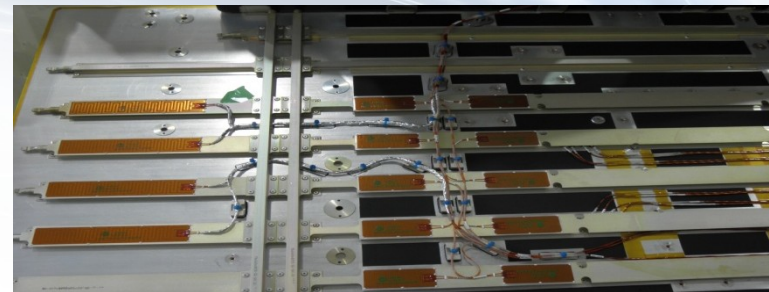
Mockup of satellite



Mockup of microsatellite



Heaters installations of satellite



Participations on the Space Projects in the Czech Republic

Collaboration with Academy of Sciences of the Czech Republic (AV-UFA) & Charles University Prague (UK-MFF), Department of Surface and Plasma Science Faculty of Mathematics and Physics

SOLAR ORBITER - TDS (*Time domain sampler*) BB/EM (AV-UFA)

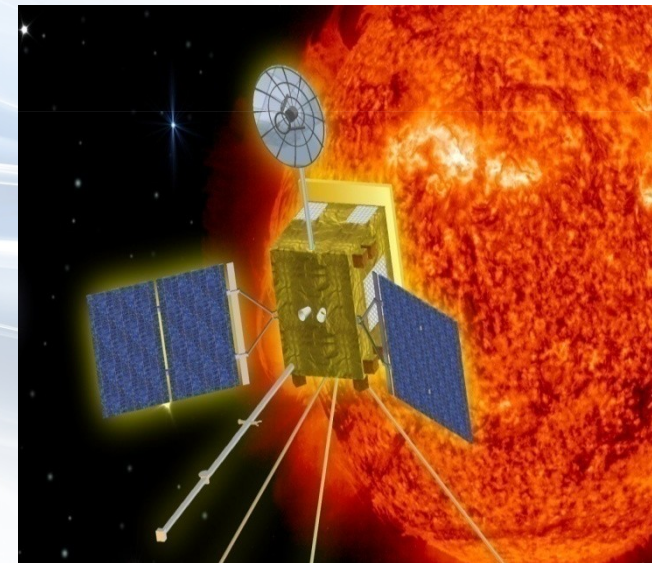
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SOLAR ORBITER - SWA/PAS CEM board EM/QM (UK-MMF)

SOLAR ORBITER - Process verification of SMD hand-soldering for RPW-TDS and SWA/PAS-CEM units FM (CNES)

ACTIVITY IDENTIFICATIONS:

- Technical consultations
 - Clean room manufacturing and Q.C. system
 - Rework and modifications on PCBs
 - Harness, internal cabling and mechanical integration
 - Final implementation of gluing & conformal coating
-



AIS RX Rebuild and Vessel Sat – Harness (Power ,Date and RF) FM (LuxSpace)

Verific. process of SMD hand soldering of flight level PCB (ESA)

Certifications for Hi-Rel manufacturing

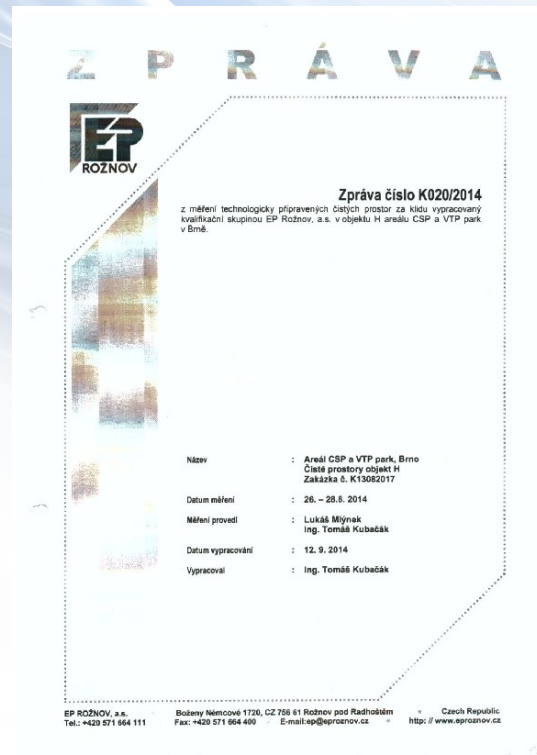
Staff : ESA Certification CAT 2 & CAT 3

- ECSS-Q-70-08
- ECSS-Q-ST-70-26
- ECSS-Q-ST-70-28
- ECSS-Q-ST-70-38



Clean room Class 100.000

The validation report 8/2014

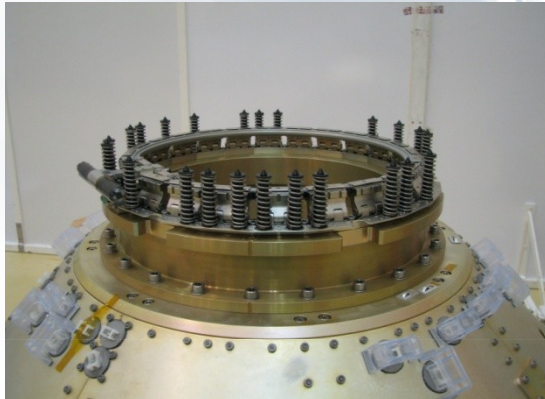


EU and CNES Certification for Handling Crane

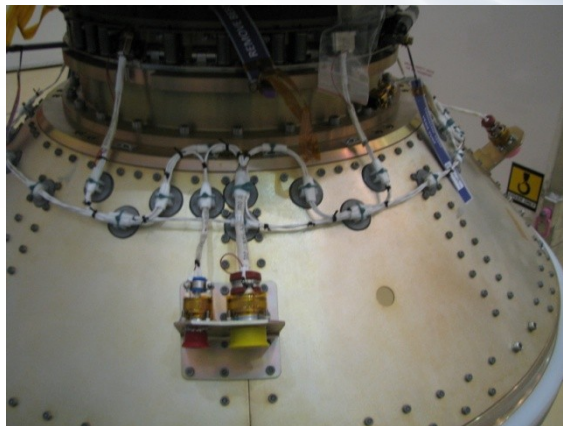
Integration and Moving of the satellite (Centre Spatial Guyanais)



Final integration PROBA V 3/2013



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VV02 & PROBA V ⇨
Vega is ready for the
start of the second
launch

⇨ SSIS:
Preparations of the
Separation system for
integration with
PROBA V satellite

⇨ SSIS:
Final Integrations of
harness



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Final integration LARES satellite 1/2012



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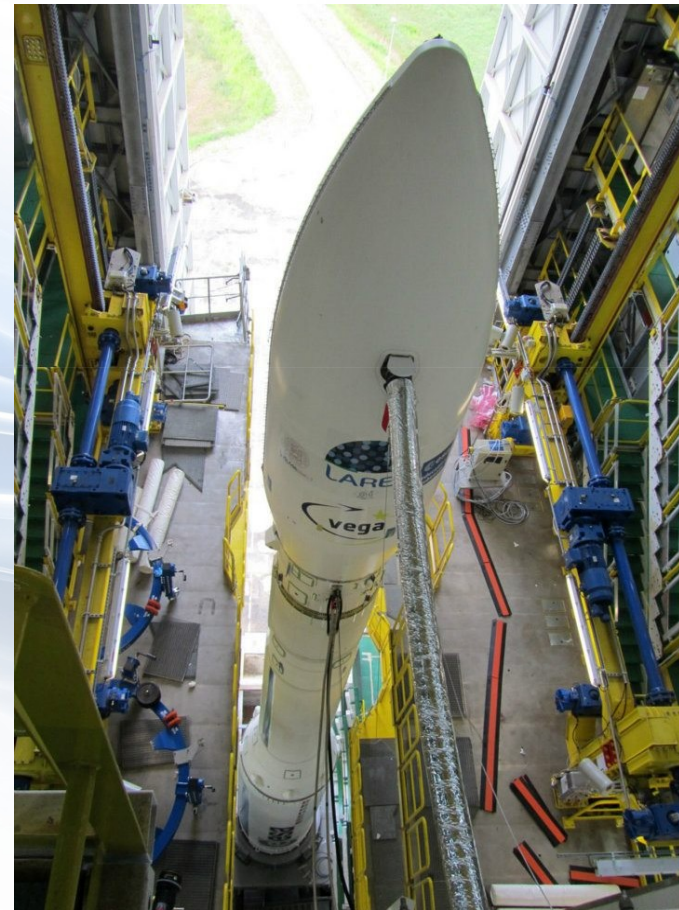
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VEGA & LARES ⇔

Vega during the final preparation for the first Launch

⇔ LARES:
Transfer preparations for integration on the AVUM

⇔ LARES:
Final Integrations Almasat and P-Pods with 7 CubeSats



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Space segment

We participate in the field: PCB assembling, bonding , quality control, measurement, manufacturing of external harness and final integration of unit box

Co-operation on ongoing projects 2013-2014

**Clients :TAS-I,CGS-OHB,LUXSPACE,TEMIS,SITAEL,
BLU ELECTRONIC,ANTARES,SAB Aerospace
AV-UFA CR, UK- MFF CR**

- AIS-RX Rebuild – Harness FM
- EDRS-C – HARNESS FM
- EDRMK2 / RPDA – FM
- ASIM FM
- HEXAPOD - FM
- SERENA - EQM,FM
- SOLAR ORBITER – EM ,EQM
- GALILEO Fuse box ,FM
- SGEO – EQM,FM
- SENTINEL1 – EQM, FM
- ENMAP - FM 1& 2

Implemented projects 2005-2013

- SSIS / VERTA – Harness integration FM
- LARES – Harness FM
- VESSEL SAT 1&2 Harness FM
- SAR LUPE
- GLOBALSTAR2
- HERSCHEL
- AMS-PDS02
- O3B - FM
- SWARM
- GAIA
- GALILELEO FOC
- AGILE- HW and Harness
- EUTEF

Ground segment

- ❑ Mainly under leadership of **Carlo Gavazzi Space** and **Telematic Solutions** in French Guyana
- ❑ We are concentrating primarily on technical support for the complete electro installation
- ❑ Telephone, audio and video signal ,safety (gas leak), and special applications and individual measurements and partial integration of RACK boxes.
- ❑ Maintenance for the ground segment throughout the mission lifetime, including yearly service visits and repair. Work is performed by our qualified technicians.



Ground segment

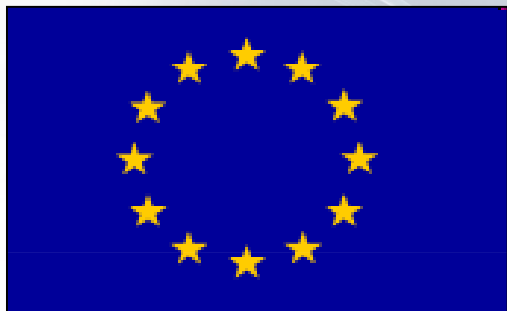
- Project : **MANGOUSTA** – Security camera system
Activities:
 - Electrical assembly and final installation of camera system with IR sensors
 - Integration of A/V systems
- Project : Launching pads **VEGA, SOYUZ**
Activities:
 - Electrical Installations and assembly of switchboards (monitoring boxes)
 - Integration of A/V and telephone systems
 - Safety signalization (Gas leak)
 - Installation of sensors
 - Installation of optical cables



SOYUZ:

currently in progress assembly and installation process of a security camera system

General Strategy



- ❑ Reliable business partner for the realization of Ground and Space project
- ❑ Offering high quality products and services for ESA partners
- ❑ Interest in co-operation in new international projects
- ❑ Creation of new business partnerships

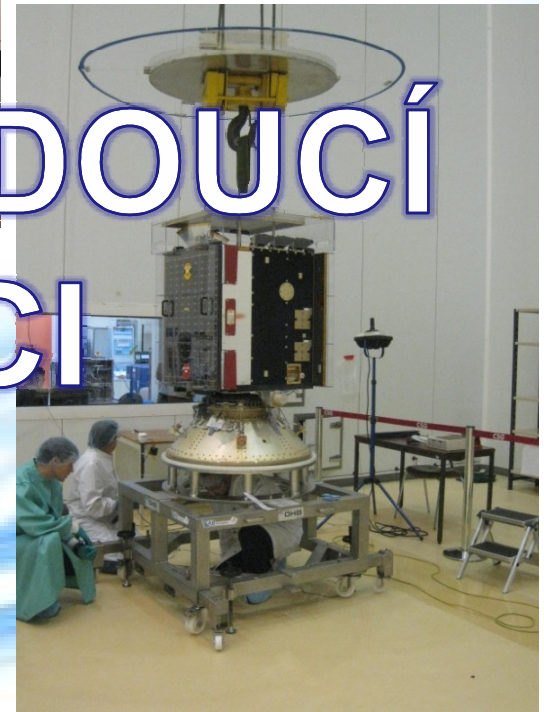


DĚKUJI ZA POZORNOST



A

TĚŠÍM SE NA BUDOUCÍ



SPOLUPRÁCI

