Precision on earth. Reliability in space. RUAG Space.

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RUAG Space
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Who we are:
- Number One independent space product supplier
- Net sales 2020: CHF 277 million
- 1,300 staff across 12 sites
- Products on 1'000 payloads delivered to space
- Globally active with presence in USA and Europe
- 40 years of experience in space
- R&D spending equals 10% of total sales

What we offer:
- Tuning our product portfolio in terms of enhanced price and performance
- Competitive prices through qualified products and building blocks
- We leverage institutional space technology investments into commercial market success

Introducing RUAG Space
Comprehensive Product Portfolio With 100% Success Rate
RUAG Space on Earth
Close to our customers

Huntsville/Decatur
Denver
Titusville
Finland
Tampere
Austria
Vienna
Berndorf
Germany
Dresden
Sweden
Gothenburg
Linköping
Sweden
Gothenburg
Linköping
Major European programs rely on RUAG Space products
Earth Observation, Weather, Navigation, Security & Science
US Government Missions supported by RUAG products
Science, Earth Observation, Exploration, National Security
Market leading portfolio
Across three product groups

**Electronics**
- Satellite and Launcher Computers
- Navigation Receivers & Signal Processing
- Power & Drive Electronics
- Microwave for Telecom
- Antennas

**Spacecraft**
- Satellite Structures
- Satellite Mechanisms
- Mechanical Ground Support Equipment
- Thermal Systems
- Slip rings

**Launchers**
- Launcher Fairings and Structures
- Adapters, Separation Systems, Dispensers
- Sounding Rocket Guidance Systems
RUAG Space - competence in Switzerland

- Diverse range of Space Mechanism
- Satellite Structures
- Fairings
- Sliprings

System level Engineering and overall project responsibility for mechanisms integrated with:
- control electronics
- antennas and MW feed section
- complex optical systems

Test competence:
- Thermal cycling in vacuum
- Vibration
- EMC testing
RUAG Space and SKA

- **SKA needs**
  - Unique technologies
  - System integration with cutting edge performance
  - Operation in desert locations – severe environment and minimum RFI

- **Switzerland can offer**
  - State of the art components and subsystem
  - Technologies for the next generation instruments
  - Scientific interest to define and support science case studies

- **SKA is entering the construction phase**
  - Most of the designs are at very mature level
  - Need for design for production is in some areas
  - Bring new technologies for the coming upgrade in 3 – 4 years – *start now with proof of concept work!*

- **Possible RUAG Space contribution**
  - System level interface to the project
  - Design for harsh environment
  - System integrator
  - Environmental testing
RUAG Space contribution to SKA Engineering

- **Project management**
  - Schedule, coordination, reviews
  - Interface to the customer
  - Interface to sub-contractors

- **System engineering**
  - Define and maintain requirements specification
  - Maintain technical interface between customer and sub-contractors

- **Mechanical and thermal design**
  - Cryogenic compartment
  - Electronics enclosures

- **Assembly capabilities**
  - Clean rooms ISO 6 and ISO 8
  - Trained personal

- **Test capabilities**
  - In vacuum thermal cycling
  - Vibration, shock
  - EMC test support
RUAG Space – possible contribution to SKA Production

- Excellent track record of deliveries on time, on quality, on performance and on cost
- Logistics and planning keeps track of work-orders, materials and components with full traceability
- Flexible volume
- Excellent quality in every process is part of our business
- Parts procurement, unit assembly, electrical and environmental testing