FACT SHEET AD-SP05

Space Engineering & Products

FERCHAU

FERCHAU Aerospace & Defence

Perfectly Fitting Solutions for Demanding Missions

To succeed in Space, you need an expert engineering partner here on the earth who knows and loves the special challenges of your demanding missions. FERCHAU Aerospace & Defence, together with the specialised FERCHAU company RST Rostock System-Technik, supports you reliably with end-to-end space solutions tailored to your individual needs.

Launchers

Development of primary and secondary structures for upper stage modules.

Design and analysis of piping systems for different media.

Harness design and routing.

Electronic design

Propulsion sub-systems

Secondary structures

Satellites, instruments and Experiments

Development of MAIT equipment for satellites, instruments and payloads.

Structure and mechanism development.

Harness design, routing and integration.

Electronic modules and experiment controllers.

Mechanical ground support equipment

Ground support equipment

Equipment for manufacturing, calibration, testing and transportation of all major space system and sub-system types.

Ground support systems

Architecture, set-up and operational support for IT and back-end ground support systems.

Test and verification beds.

Electrical ground support equipment

End-to-End Product Development and Manufacturing

Our experts also ***develop and manufacture highly customised space and ground systems.*** No matter whether you need MGSE for handling, testing, calibration and the transportation of your sensitive space hardware, electrical equipment for automated tests, simulations and system checkouts, specific devices for payload experiments and loading capacities or high-quality wiring solutions includig AIT services: ***we always find the product which perfectly meets your individual challenge***. Our customers not only benefit from our Group company RST's experience in major satellite and launcher programmes, but also from our modern manufacturing facilities (e.g. an ISO8 clean room with a 18m² laminar flow clean tent [ISO6], an ultrasonic cleaning facility, 1,400m² integration centre) and our direct communication lines with European primes which enables agile developments.

At a glance: our products

Mechanical ground support equipment
- Design-to-build of MGSE for space applications
- Transport containers, lifting and transport devices, integration stands, handling tools, S/C multi-purpose trolleys
- Precision mechanics for plant engineering
- Zero-G equipment
- Pipe integration support tools
- Mass and thermal test dummies

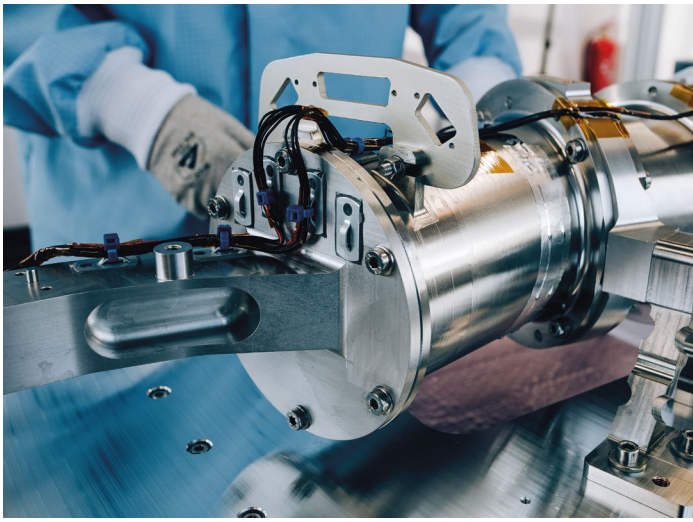
Electrical ground support equipment
- Design-to-build of EGSE for space applications
- Special checking equipment (SCOEs), e.g. propulsion simulators, thermal control systems
- Standardised platforms for satellite SCOE (thermal, power, payload, AOCS, TM/TC, break-out boxes)
- Payload simulators

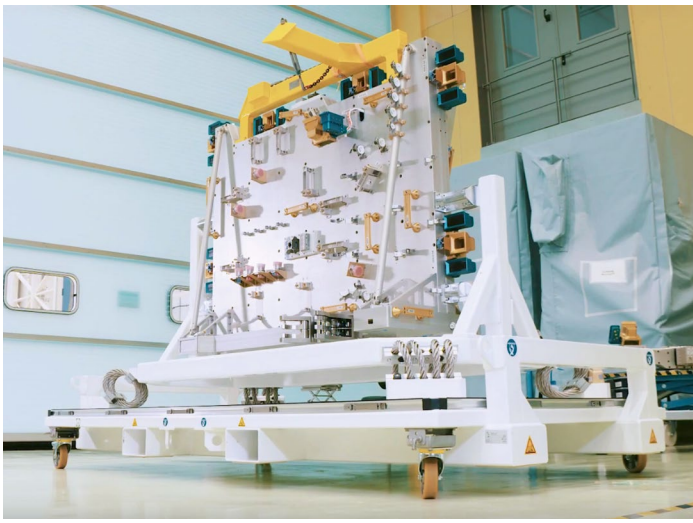
Special ground support / checking equipment
- Ground support optical equipment
- Ground support calibration equipment

Test systems
- Test systems for propulsion subsystems
- Test concepts and test philosophy
- Automated test systems for components and software modules
- ISVV with certified software testers

Wire harnesses
- Design-to-build and build-to-print capabilities
- Tailor-made cable assemblies
- Prototyping and serial production
- Payload and experiment harnesses

Thermal mass dummies in the clean room.
Source: RST – a FERCHAU company





MGSE for the ISS Bartolomeo platform.
Source: Airbus Defence and Space

More information about our expertise

ferchau.com/go/aerospace-defence

Connecting People and Technologies for the Next Level

We not only cover the far-reaching aspects of engineering and quality management services, but also offer a selected portfolio of customised mechanical and electrical ground support equipment (MGSE/EGSE), automated test systems, electronic modules, wire harnesses and experiments. 30 years' sector experience including intense involvement in national and European satellite and launcher programmes, combined with deep-rooted engineering and manufacturing know-how, form the basis for high-quality services and products which help to make your space mission a success.

The key to success

- Decades of experience in national and European satellite and launcher programmes
- Excellent engineering services in the form of flexible work packages
- Customised MGSE, EGSE, automated test systems, electronic modules, wire harnesses and experiments
- State-of-the-art manufacturing facilities (including a clean room)
- Certified manufacturing, asssembly, integration and test processes according to ESA ECSS standards
- Lean and direct communication – from expert to expert

Engineering services

FERCHAU Aerospace & Defence assumes complex process steps within the development cycle of ***space and ground systems across all major engineering disciplines*** with competence and passion. We support national and international customers with flexible work packages, the results of which ***seamlessly augment your overall project***. Our profound expertise in industry-specific quality management ensures safe and reliable solutions which meet highest sector standards.

At a glance: our competences

Systems engineering
- Studies
- Requirements and interfaces
- System design and modelling
- Technical specifications
- Verification and validation plans
- Vendor and partner management

Mechanical engineering
- Mechanical design and analysis of S/C sub-systems
- Thermal design and analysis
- Secondary structures
- Propulsion sub-systems
- Optical systems

Electrical & electronic engineering
- Design of electrical ground support systems (EGSE)
- Design of experiment control systems
- Spacecraft harnesse design
- Embedded software design
- Power supply and distribution
- Input and output protection

Software engineering
- Software modelling and simulation
- Firmware development
- FPGA and µ-controller programming
- Databases and web-based applications
- Unit-, integration- and system testing

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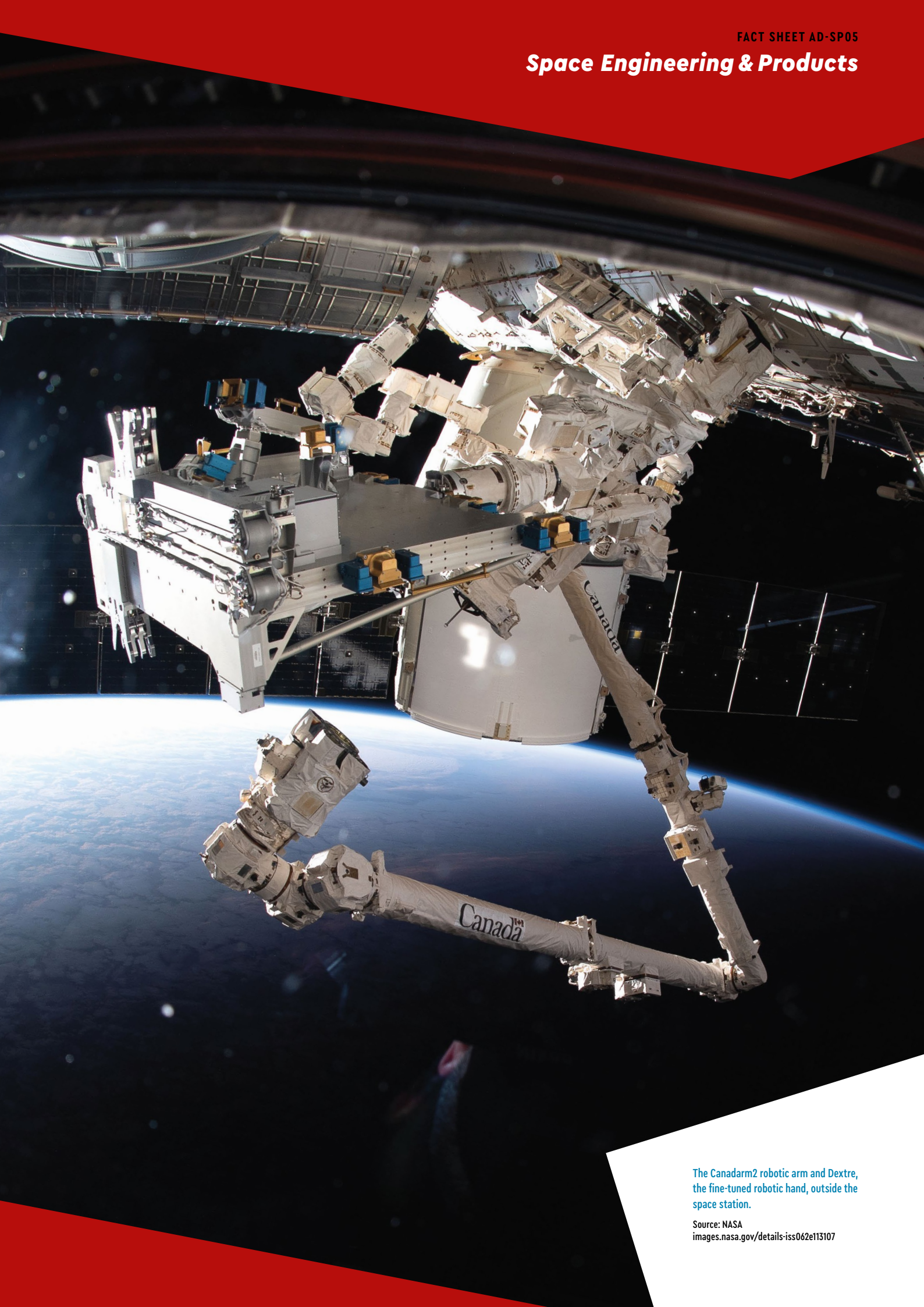

The Canadarm2 robotic arm and Dextre, the fine-tuned robotic hand, outside the space station.

Source: NASA
images.nasa.gov/details-iss062e113107