LUXSPACE

The Luxembourg Space System and Application Company

Vision & Strategy

To become one of the European Small System Integrators acting from the system definition to the application development and operation with the aim to

- develop and implement only market oriented products and services
- generate customer enthusiasm on the base of open and honest communication
- put knowledge, integrity, fairness and professionalism in all our customer relations first
- conduct business within a flexible organisation
- establish an open learning atmosphere and to deliver an active contribution to the space industry in Luxembourg, Europe and abroad

Main Activities

- Space systems and subsystem design, specification, manufacturing and test
- Space applications and service development and operation

www.luxspace.lu

Systems, Subsystems & Technologies

Micro Satellites

- With the steady miniaturisation of electronics and other satellite technologies on the one hand and increasing launch costs on the other side, micro satellites become more and more capable and financially attractive for many applications in the fields of telecommunication, earth observation and science.
- LuxSpace has recently started a product line to develop highly innovative and modular micro satellites between 30 and 90 kg for the global market. These satellites will be marketed under the name of ESPRESSO.

- A firest batch of three satellites dedicated to the identification of vessels using AIS will be launched in 2010 / 2011. Further satellites with other innovative payloads in the fields of telecommunication, earth observation and science are under development.

Payloads Systems

One major activity of LuxSpace is on the development of highly innovative telecommunication payloads with a focus on VHF and UHF.

- **AIS:** LuxSpace has recently developed a payload that allows the reception of AIS signals from vessels from space. This payload will be deployed on the ISS as well as on upcoming LuxSpace satellite missions.
- **Messaging Payloads:** LuxSpace is currently developing payloads that enable users to send and / or receive small messages. One application is the implementation of a system that allows the direct transmission of information to the cell phones of citizens in case of natural or man-made disasters.
- Dedicated payloads in other frequencies are under development.

Small GEO

Aside OHB (Germany), SSC (Sweden) and OERLIKON SPACE (Switzerland), LuxSpace acts as core team member of the ARTES 11 consortium for the development of a GEO satellite in the 300 kg payload mass class. LuxSpace is in charge of the telecommand, telemetry and ranging (TT&R) equipment as well as the satellite simulator and has developed a unique know-how and expertise in these subsystems.

Technologies

Advanced technologies in selected areas are required to reach a break through in missions. The strategy of LuxSpace is to identify and establish possible niche products that support the implementation of new missions or make satellites more efficient.

- **Solar Sail Materials:** Solar sailing is one of the major challenges for sending probes on interstellar missions in the future. LuxSpace is developing the sailing technologies that allow the manufacturing, storage and deployment on-board of a satellite with sizes up to 50 m square or more.
- **Hyperspectral Data Compression:** Together with SUPELEC of Metz, France, LuxSpace has developed an innovative compression technology for hyperspectral earth observation data that allows compressions far above the currently available technologies used in space missions.
- **Software Defined Radio (SDR):** As part of its innovations related to RF payloads, LuxSpace is developing SDR technologies that will largely increase the capabilities of future payloads.
- **Heater:** The integration of thermal systems in satellites is a time-consuming and costly exercise. LuxSpace is currently developing a innovative, PTC based technology, which will largely reduce AIT time and risk for this subsystem and thus offer a solution at comparably lower costs.

Space Applications & Services

Applications Development

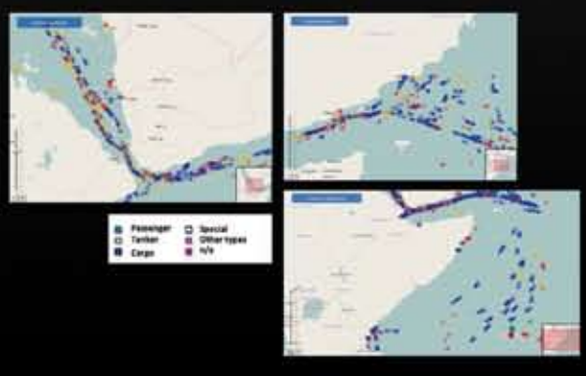
- LuxSpace supports the European "Global Monitoring for Environment and Security" (GMES), which is an initiative set up jointly by the European Commission and the European Space Agency (ESA). The key feature of the GMES strategy is to establish by 2008 a European cavpacity for Earth Observation. Driven by the need to improve the monitoring of the European and global environment, it represents a concerted effort to bring data and information providers together with users, so they can better understand each other and make environmental and security-related information available to the people who need it. The new enhanced services will contribute to sustainable management of resources and security of the citizen. LuxSpace has developed dedicated products and services for Luxembourg users in the fields of forestry and risk management.

- As part of its commercialisation efforts, LuxSpace is developing earth observation based products and services for the banking and steel sectors. For this purpose, LuxSpace has implemented a specific and unique approach of specifying the services together with the clients while tendering and procuring the production of information to dedicated companies and institutes in Europe. This approach allows customers to procure dedicated services, while they do not need to take care of the selection of the most adapted supplier and reduce their administrative burden to a minimum.

- Further application developments include projects related to intelligent road transport optimisation, transport of dangerous goods, emergency support, the utilisation of a return channel for Galileo, volcano monitoring using Ku band GEO satellite technologies and many more.
- In the future, LuxSpace will largely focus on the development of integrated space based applications using all available technologies in a integrated system approach. A first project related to the utilisation of telecommunication, navigation and communication tools for an improved management of HIV medical logistics has been recently closed.

Service Operations

- Within the past years, LuxSpace has provided large-scale assistance to the Statistical Office of the European Communities (EUROSTAT) in the framework of the Land Use / Cover Area statistical Survey (LUCAS). The service is mainly related to the quality control of the collected data.
- LuxSpace operates an AIS distribution and value adding service, based on its own and third party space based AIS sensors allowing the identification, tracking and tracing of vessels above 299 GRT on global scale. Current customers of LuxSpace space based AIS services include both institutional entities and maritime service providers in Europe and abroad.



Short Company Story

- LuxSpace was created in November 2004 as a daughter company of OHB Technology AG of Bremen, Germany (www.ohb-technology.de) and is located on the campus of SES at Betzdorf in Luxembourg. Although belonging to the international network of companies within the OHB group, LuxSpace acts fully independent and provides know-how, expertise as well as products and services to the European and global institutional and industrial market in the fields of space and defence system engineering and application development.
- LuxSpace currently employs more then 25 highly skilled engineers from nine different countries with the goal to grow up to 50 engineers in the next few years.
- LuxSpace's growing customer basis contains international agencies like ESA and EU aside Space industry, satellite operators and national institutions.
- Since 2008, LuxSpace is ISO 9001 certified.

LuxSpace Sarl
Chateau de Betzdorf, Building B
L-6815 Betzdorf
Luxembourg
www.luxspace.lu

Contact:
Jochen Harms
Phone: +352 267890 4020
Fax: +352 267890 4049
E-mail: harms@luxspace.lu