OUR UNIVERSE

Unmanned Space

Manned Space

Vehicles

ISS / Infrastructure

Microgravity Science

Mars / Moon Program

Life Science

Physical Science

Earth Observation

Space Technology

Space Science

Rockets

Telecommunication

Navigation

Capsules

Future Launcher

Space Shuttle
OHB – No. 3 in Europe

- Acquisition of Carlo Gavazzi Space and Antwerp Space strengthened the position of OHB in Europe
- OHB’s business is clearly focused on space
- OHB is involved in all major European space programs (e.g. Ariane 5, Galileo, MTG, Columbus/ISS, Small Geo, etc.)
- Additionally OHB concentrates on attractive markets (e.g. Small, Mini and Micro Satellites) and high-tech solutions

### No. 3 in the European satellite manufacturer market

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>Revenue (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EADS Astrium</td>
<td>$6.046</td>
</tr>
<tr>
<td>2</td>
<td>Thales Alenia Space</td>
<td>$2.890</td>
</tr>
<tr>
<td>3</td>
<td>OHB Technology</td>
<td>$440</td>
</tr>
<tr>
<td>4</td>
<td>Swedish Space Corp.</td>
<td>$86</td>
</tr>
</tbody>
</table>

Source: Space News Top 50 (2009)
OHB Group is family run, independent and flexible
OUR BUSINESS UNITS

Space Systems
- Satellites, manned and unmanned space systems, space transportation/exploration
- Development and implementation of payloads, scientific devices and equipment for aerospace, science and the industry

Aerospace + Industrial Products
- Space products, aerospace products, antennas and mechatronics
- On-board computers, GIS software and worldwide satellite-based data communication
### New OHB Group structure

<table>
<thead>
<tr>
<th>Space Systems</th>
<th>Aerospace + Industrial Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>OHB System AG</td>
<td>MT Aerospace AG</td>
</tr>
<tr>
<td>Bremen Germany</td>
<td>Augsburg Germany</td>
</tr>
<tr>
<td>100%</td>
<td>70%</td>
</tr>
<tr>
<td>Kayser-Threde GmbH</td>
<td>Aerotech Peissenberg GmbH &amp; Co.. KG</td>
</tr>
<tr>
<td>Munich Germany</td>
<td>Peissenberg, Germany</td>
</tr>
<tr>
<td>100%</td>
<td>70%</td>
</tr>
<tr>
<td>CGS S.p.A.</td>
<td>OHB Teledata GmbH</td>
</tr>
<tr>
<td>Milan Italy</td>
<td>Bremen Germany</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>LUXSPACE Sàrt</td>
<td>megatel GmbH</td>
</tr>
<tr>
<td>Betzdorf Luxembourg</td>
<td>Bremen Germany</td>
</tr>
<tr>
<td>100%</td>
<td>74.9%</td>
</tr>
<tr>
<td>Antwerp Space N.V.</td>
<td>Telematic Solutions S.p.A.</td>
</tr>
<tr>
<td>Antwerp Belgium</td>
<td>Milan Italy</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
OUR KEY ASSET

Total staff: 2,206
Status: 2011/03/31

- Holding
- Space Systems
- Aerospace + Industrial Products

Total staff: 2,206
Status: 2011/03/31
OUR SUCCESS STORY

Total revenues over eight years
(in EUR million)

EBIT over eight years
(in EUR million)
PROJECT HIGHLIGHTS

SPACE SYSTEMS
Small GEO / HISPASAT

Small GEO
- Design & development of a cost-effective satellite platform for GEO applications, like
  - Communication, earth observation/meteo, scientific missions

HISPASAT
- Contract for development of “Hispasat AG1” signed in 2009
- Mission based on the new Small GEO platform will be launched end of 2013
SGEO for data relay applications (EDRS)

EDRS program
- ESA ARTES-7 program to serve the GMES earth
- Observation satellites for data downlink via GEO data relay
- SGEO satellite optimized for data relay functions

Status
- Authorization to Proceed was signed on April 13, 2011 (EUR 7.4 million)
- Order volume for OHB: EUR 150 million
- Launch planned in 2015
METEOSAT Third Generation (MTG)

**ESA/EUMETSAT program**
- Constellation of 6 satellites in geostationary orbit
- 2 MTG-S satellites with an infrared sounding instrument (IRS) for cloud and rain forecast improvement and further payloads, OHB-System MTG-S mission prime, Kayser-Threde is payload prime, first launch in 2019
- OHB-System is also prime for the 6 platforms, based on SGEO platform
- Expected OHB order volume EUR 750 million

**Program status**
- First contract (ATP) signed with Thales Alenia Space in November 2010
- Development and procurement activities already started
Galileo – European Satellite Navigation System

Program
- Contract signed for construction, testing and assembling of 14 satellites in January 2010
- Launch of the first two satellites planned for end of 2012, system should be operative in 2014
- Order volume: EUR 566 million

Program status
- First Hardware (Common Security Unit, CSU) in test phase
- Progress according to schedule
- All relevant suppliers and subcontractors are selected
- Build-up of the first structures (EM) started in April 2011
Future mission based on Small GEO platform

German telecom mission: Heinrich Hertz

- DLR program for in-orbit validation for innovative SatCom technologies based on COMED and S GEO
- Ka-Band and X-Band payload
- Utilization planned by German Bundeswehr
- Phase 1 study finished
- Program decision expected in 2011
- Launch planned in 2015
Project EnMAP – Hyperspectral Satellit

German hyperspectral EO-Mission

- Global determination of ecosystem parameters and bio-physical, bio-chemical and geo-chemical variables
- Potential for analysis after natural disaster and pollution of land and water
- Kayser-Threde (KT) is prime, OHB-System is co-prime for the platform
- Mass: 900kg; Power: 800W, X-band downlink: 320Mbps

Status

- Launch planned in 2014
- Mission duration: 5 years
CarbonSAT- constellation for coordinated CO2 & Methane measurements from space

- 5 satellites will cover a complete global coverage per day
- Allows a transparent monitoring of the compliance of climate protection targets
SAR-Lupe follow on

- SAR Lupe: First German satellite-based radar reconnaissance system
  - 5 satellites and 1 ground station
  - Satellites and ground station fully operational since December 2007, all satellites in service since July 2008
  - 10 years operations service contract with the Bundeswehr until 2017
- Preparations for SAR-Lupe next generation competition
  - OHB has been selected for a concept study of SAR-Lupe follow on (BWB, BMVg)
Exomars - Spacecraft und Rover
OHB is responsible for the orbiter of the 2016 mission (structure, thermal design und drive based on SGEO)
KT: significantly involvement of the payload of the rover (2018 mission)
PRISMA (Precursor of Hyperspectral Application Mission)

- Earth remote sensing mission with unique hyperspectral payload
- Contract in December 2007
- Launch planned 2011/12
- Project volume EUR 69 million
- CGS is the prime contractor of the program
- PRISMA is proving the capability of CGS to act as a strong prime contractor
HIGHLIGHTS

AEROSPACE + INDUSTRIAL PRODUCTS
MT Aerospace manufactures 10% of the launcher hardware
With a capacity of up to 8 launchers per year
This is the largest contribution to ARIANE outside of France
Production contracts to MT Aerospace comprise 35 ship sets
Products

MT Aerospace supplies
- Tanks and booster casings
- Satellite & orbital transfer system components
- Structures
- Ceramic matrix composites
Tanks and tank components

Ariane 5 - EPS Tanks for MMH and NTO

Ariane 5 - LH2 Tank Bulkheads

Aeronautic Products
OHB Group Strategy

- Core business is space

- Strategy is focussed on Europe with an opportunistic approach for opportunities outside Europe

- Presence in ESA member states is key to generate new programs

- Decentralized management allows multi-domestic approach

- Master key system capabilities in order to handle all kinds of space programs
OHB interest in „SSD“

- Well fitting in the vision of OHB to position as a leading supplier of space systems and technologies in Europe

- Excellent know-how in OHB’s core business (space systems) where resources are scarce

- Access to Swedish geo-return helps to initiate future ESA programs

- SSD is present in key subsystems of SGEO which is a strategic program for OHB

- Formation Flying technology can be a key asset for future programs

OHB Sweden will play a key role in the future strategy of the OHB group
Future benefits of „SSD“ as OHB Sweden

- Direct access to multi-national group mainly focused on system integration allowing to be more largely involved in new programs (science, exploration, EO, defence) from beginning or increase involvement in existing programs

- Growth strategy of OHB can benefit SSD

- Marketing power increase on European level through the group and/or sister companies

- Management responsibility at local level, low hierarchy, quick routes for decisions

- Only few technology overlaps (no risk of business reduction or know-how swap through synergies)

- Backing of a financially strong group
Future Role of OHB Sweden in the OHB group

- Together with the OHB group companies strengthen the position as one of the three big Primes in Europe

- OHB Sweden can become "The Smallsat Expert" in the OHB group

- Project managers and System engineering to strengthen and off load current OHB projects (MTG, Galileo, Heinrich Hertz etc)

- Co-operation with Kayser-Threde on Payloads (MTG, Sentinel-4, Post-EPS etc.)

- Promote and execute bilateral missions in cooperation between Germany/Belgium and Sweden
Role of the PMI-team:
- Secure short-term involvement of OHB Sweden in the running and upcoming programs of KT and OHB System
- Secure integration into the group processes on financial and administrative level
- Support to OHB Sweden in setting up stand-alone company
Mission Statement

We deliver Swedish Satellite Systems with the following core values:

- High content of reliable innovations
- Done by efficient and committed people
- Strengthened by the European Groups clout and knowledge
Products and Competences

- Continue strong developments on mission/system and subsystem level
  - Focus at complete small platforms
  - Focus on complete AOCS, Propulsion and Payload Subsystems

- To do this we need competences and capacities within
  - Electronics and Power
  - Software
  - Mechanics
  - Thermal
  - GST, TM/TC and RF
  - AIT
Markets and Customers

- **Swedish National Space Board (SNSB)**
  Together with OHB/DLR to promote bilateral missions with a strong interest from the Swedish User Community

- **Other Swedish authorities (e.g. Armed Forces)**
  To continue the close cooperation with educational and start-up activities at mission and system level and therefore naturally be part of the next implementation phase

- **European Space Agency (ESA)**
  To early participate in strong OHB consortia wherever Swedish return is available
  In coordination with OHB/DLR promote new areas/programs towards SNSB/ESA

- **Export Market – outside Europe**
  OHB to guarantee and safeguard the delivery financially and programmatic and us to deliver state-of-the-art small systems with a unique concept for Technology Transfer
## Company Guidelines

<table>
<thead>
<tr>
<th>Organization</th>
<th>Quick decision routes in focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Resources</td>
<td>Humans in focus</td>
</tr>
<tr>
<td>Technology</td>
<td>Roadmaps in focus</td>
</tr>
<tr>
<td>New Business</td>
<td>Group Teaming in focus</td>
</tr>
<tr>
<td>Financials</td>
<td>Cash flow in focus</td>
</tr>
<tr>
<td>Processes /QA</td>
<td>Lean methods in focus</td>
</tr>
<tr>
<td>Admin / Facilities</td>
<td>Need to have in focus</td>
</tr>
</tbody>
</table>

**OHB Sweden must be transformed from a division of a state-owned company to a modern, dynamic and flexible Swedish company**
We shall become the most attractive company for engineers in Sweden

- Attractive and challenging Technology
- Excellent working environment
- Open and transparent organisation
- Rapidly moving and flexible
- Excellent career opportunities through European network of group companies
Comittment of the OHB group

- OHB Sweden will take over and keep all current SSD employees
- All contractually agreed benefits will remain unchanged
- All other benefits will be reviewed but probably be kept in the same or improved form
- Strong Support of the group during the transition phase
Next Steps

- Establish and communicate final organization (end of July)
- Rollout of new branding (immediately until end of the year)
- Establish necessary functions for new company (end of July)
- Establish business plan/roadmap for 2012/2013 (end of November)
- Secure integration into the group on project, financial and strategic level (ongoing)
Let’s go for the future

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