

#### August 30, 2017

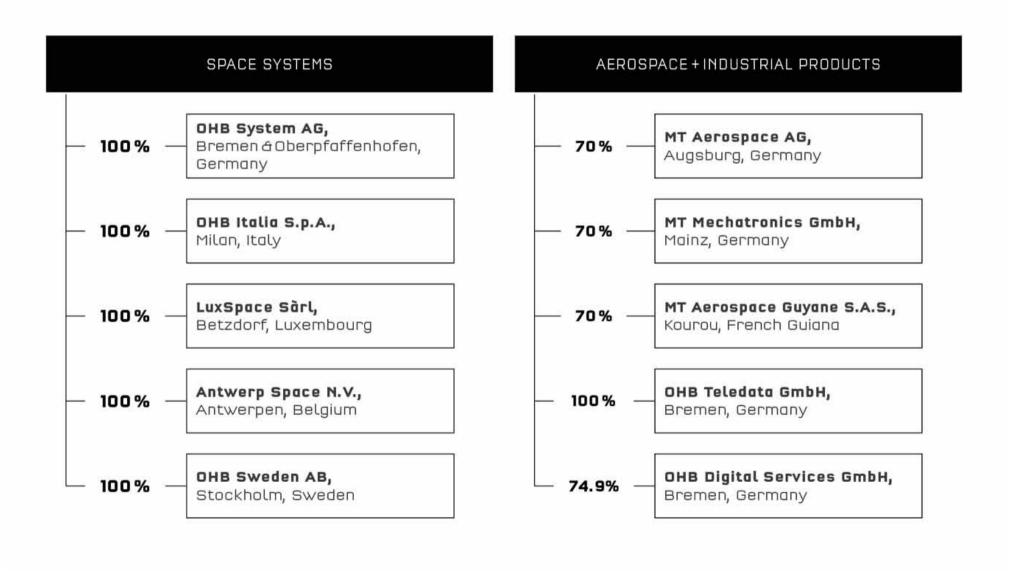
**Commerzbank Sector Conference Frankfurt / Main** 

Marco Fuchs, CEO





#### **Business Units of the OHB Group**





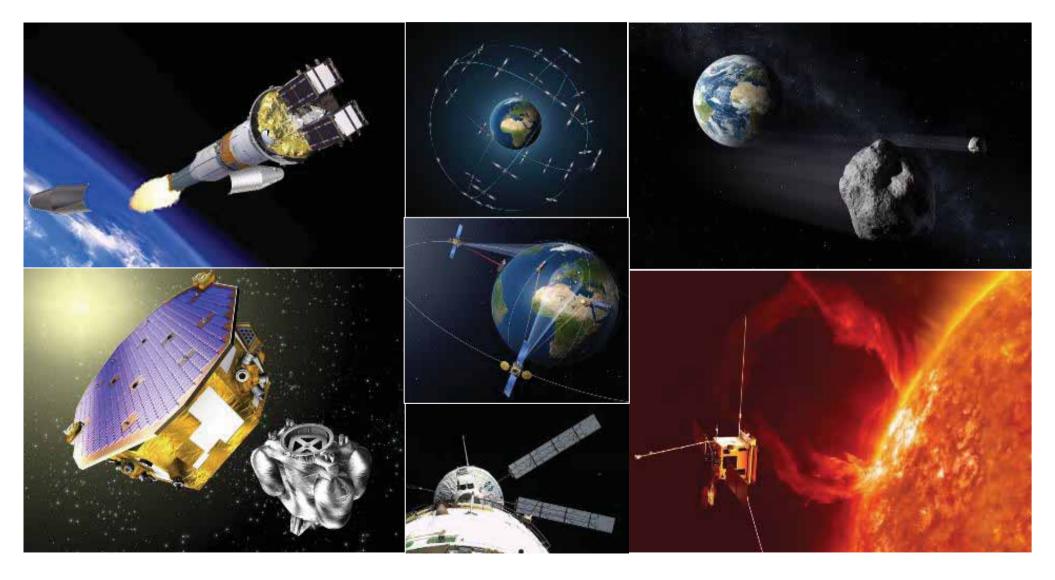
#### **Business units at a glance**

Space Systems	Aerospace + Industrial Products
Development and realisation of space projects:	Fabricating of aviation and space products:
<ul> <li>Low-orbiting and geostationary satellites for navigation, research, communications, earth observation and reconnaissance</li> <li>Studies and models for exploring our solar system, primarily Moon and Mars</li> <li>Manned space flight activities</li> </ul>	<ul> <li>Largest German vendor for Ariane 5 and development of Ariane 6 components</li> <li>Experienced vendor of mechatronic systems for antennas and telescopes</li> <li>Telematic systems serve the logistic industry globally</li> </ul>
Space projects have a long-term perspective which provides for a high planning reliability	This business has been very stable over years due to a stable cadence of Ariane 5 flights

Healthy mix of (semi-)governmental customers (e.g. German Ministry of Defence, DLR, ESA, asi, Arianespace) and large corporates (e.g. Airbus, Boeing, Deutsche Bahn)



#### **Space Systems**





#### **Project update Galileo**

Events	
Next launch	Four satellites will be launched on top of an Ariane 5 rocket in late 2017.
Status of production	Production of the remaining ordered work order II satellites: 7 satellites in Bremen for corrective measures, 1 (last) satellite in test centre in Noordwijk Batch 3 satellites: procurement of units and preparation AIT nominally.
Overall system	Initial services started successfully in mid December 2016: Guaranteed signal quality and coverage available for positioning and "Search and Rescue" services. Number of devices using Galileo growing. Services will be further improved by additional satellites becoming operational.







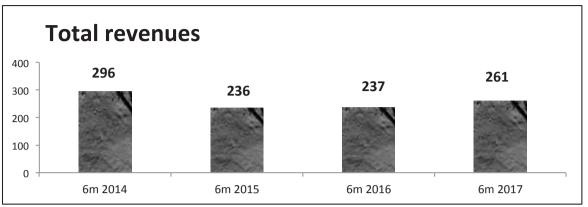


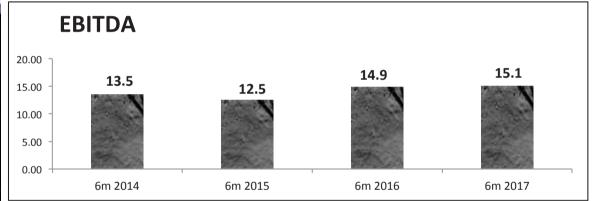
Commerzbank Sector Conference, Frankfurt/Main, August 30, 2017

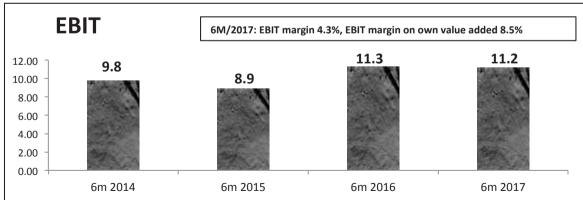


#### Space Systems 6m 2017 EUR million











#### **Aerospace + Industrial Products**





#### **Project update Ariane 6**

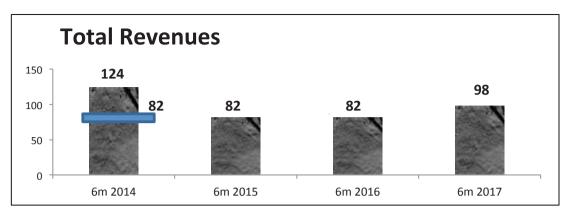
Events	
Status of production halls and buildings	Construction of the production hall (E06) required for tank welding finalised, re-construction of existing production halls (E02, E03) started. The Hage Portal M1 was delivered and installation commenced in the last week of July.
Overall system	First qualification components for the propellant tanks and structures are already being assembled for delivery to ArianeGroup at the end of 2017.
Next steps	Implementing one of the most important technical innovations of Ariane 6, friction stir welding (FSW) using efficient materials.

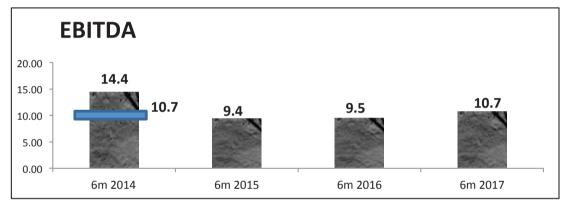


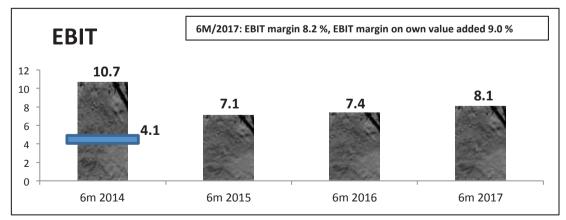


# Aerospace + Industrial Products 6m 2017 EUR million











#### **Recent news from the Group**

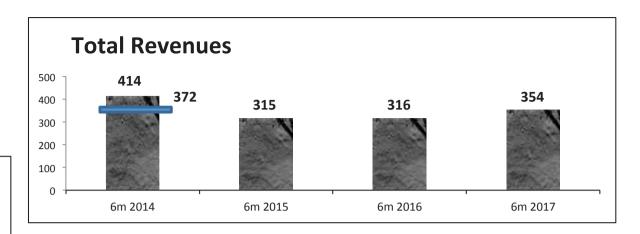
Company	Headlines
OHB System	Contract worth EUR 310.5 million signed on June 28, 2017 with DLR for the German 'Heinrich Hertz' satellite communications mission.
OHB System	Awarded contract by ESA and the EC on June 22, 2017 for the assembly of a further eight Galileo Navigation Satellites (Batch 3) for around EUR 324 million.
MT Aerospace	Awarded contract worth EUR 170 million for the development of tank and structural components for the new Ariane 6 launcher.
Group in total	OHB SE presented its range of products and services at the 52 <sup>nd</sup> Paris Air Show in Le Bourget (France).
OHB SE	Prime Sponsor of ASTEROID DAY LIVE on June 30, 2017 with more than 1,000 events on all continents in more than 200 countries.

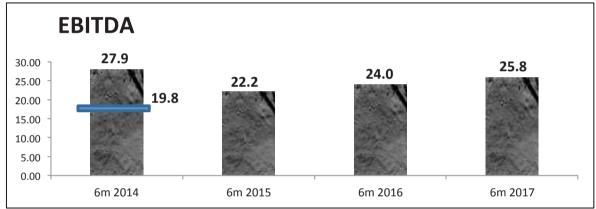


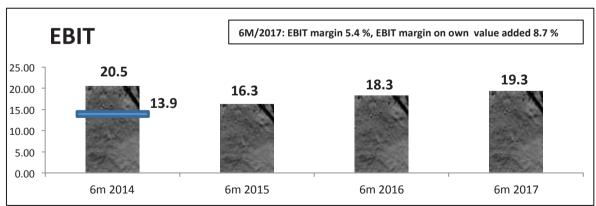
## Group results 6m 2017 EUR million

Blue coloured line: pro-forma results for 6m 2014 deducting the results of the former subsidiary Aerotech Peissenberg GmbH & Co. KG (ATP)





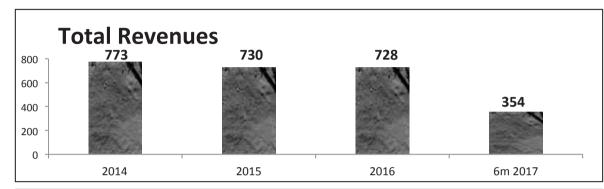


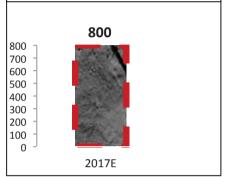


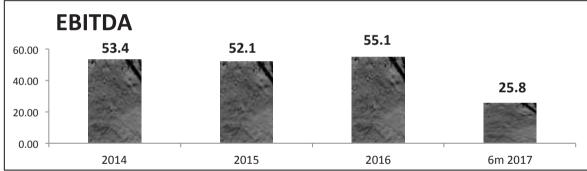


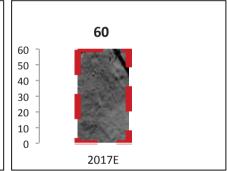
#### **Guidance 2017**

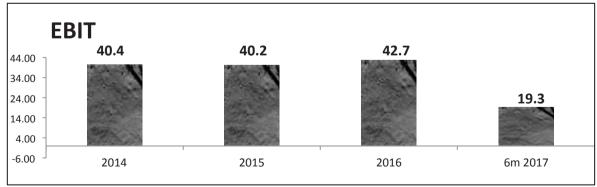
# Full year guidance 2017 reiterated

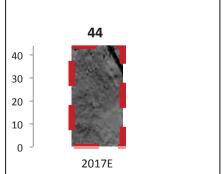














#### **OHB** Group strategy at a glance





#### **OHB** positioning in European market environment

- European player with subsidiaries in five important ESA member countries and two smaller companies overseas
- OHB the only exclusive space company among the three "large system integrators" (Airbus, Thales and OHB) in the European space market
- OHB the third largest space company in Europe, with a clear distance behind the second position as well as ahead of the fourth position
- High market entry barriers for new players
- Clients are usually space agencies (payment risk is very low)





#### **Investment case OHB**

- Drivers of the space market in general are
  - + growing needs of satellites for new applications
  - + replacement of satellites in use at the end of their life span
- OHB disposes of the know-how to find solutions for a wide range of new customer needs and benefits from a flexible entity through a very low degree of hierarchy
- Low overhead in comparison to main competitors

#### • Space Systems:

OHB has prepared itself as a reliable prime contractor for its clients and additionally, it has the possibility to market its products (e.g. telecom satellites) around the world

#### • Aerospace + Industrial Products:

Stable participation in the Ariane 5 programme and additional involvement in the development and production of Ariane 6 will guarantee stable / extended business development in this segment

High order backlog and high stability with regard to profitability



#### Characteristics of OHB's business model

- OHB has gained a strong heritage through reliable system solutions (e.g. SAR-Lupe)
- OHB is able to combine the innovative power and flexibility in R&D of a start-up company focused on specific core skills combined with the experience of more than 35 years in developing and executing space technology systems and projects
- OHB owns a strong product portfolio with a wide range of applications for earth observation, navigation, reconnaissance, telecommunications, research, etc.
- Since the majority of the shares is family-owned, a high degree of stability and independency is guaranteed – an important aspect for our institutional and governmental clients
- Unlimited margin increase is not possible, but stable margins and a high visibility with regard to mid-term revenues and orderbook levels are attached to our business model just like independence from financial crisis and business cycles



#### **ESA & EC budget**

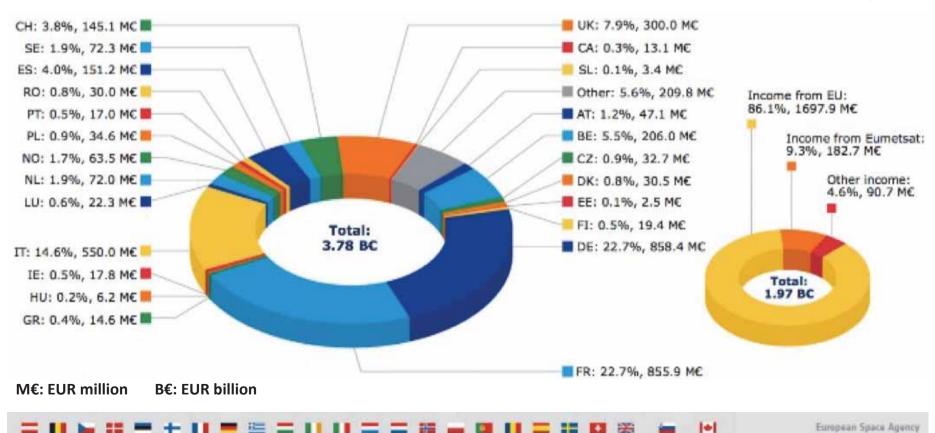
ESA budget 2017: EUR 5.75 billion

ESA budget 2016: EUR 5.25 billion ESA budget 2015: EUR 4.43 billion



#### Programmes implemented for other institutional partners

#### **ESA** activities and programmes





#### **New Space Strategy for Europe (I)**

- European Commission (EC) released on October 26<sup>th</sup>, 2016 its first **«Space Strategy for Europe»** that sets the institutional framework for future EU space activities
- EC solemnly acknowledges the strategic contribution made by space infrastructures and applications toward Europe's prosperity, security and independence
- Long-term sustainability of space infrastructures has become highly critical:
  - + EC recognises that private companies will only invest in space applications if they can be assured that EU space infrastructure is there to stay. Hence its clear commitment for long-term sustainability of Galileo and Copernicus, through the development and preparation of next generations. OHB can benefit from this policy on Galileo, and on Copernicus subjects (like hyperspectral imaging)
- + EC intends to protect them accordingly through a space surveillance and tracking system (SST). OHB Italia particularly well positioned with the Fly-Eye telescope (prototype funded by ESA)
- Promotion of a virtuous ecosystem by bringing together space, digital and user sectors (e.g. transport and energy)



#### **New Space Strategy for Europe (II)**

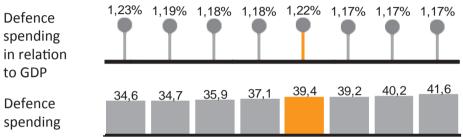
- EC recognises the importance of a European autonomous access to space and will support efforts to develop new innovative launch solutions
- Very aggressive promotion of the use of space for European policies:
  - + strong demand for "more European space"
  - + very positive comments from European Parliament, setting the framework for budgetary decisions of the Financial Perspectives 2020-2027 (EUR 12 billion were allocated to Space in the current 2014-2020 budgets)
- Use of European Investment Bank (EIB) to support the space sector
- Increasing spending in space R&D funding
- Defence and Security, for the first time mentioned officially:
  - + EC will encourage synergies between civilian and military space capacities and development (important for OHB military radar capabilities)
  - + EC will launch GovSatCom, an initiative for a EU-wide system of secured communications for EU and national public users (OHB assets are SmallGEO, Electra and Heinrich Hertz)

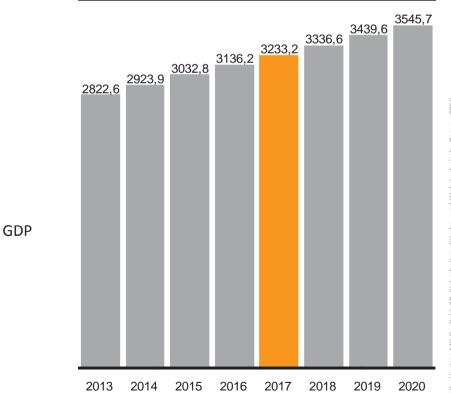


#### Germany's goal for defence investment to achieve NATO's 2%

- Due to increasing challenges according to the National Security in the last year, German Security-related institutions like police, intelligence services or German Federal Armed Forces received a considerable raise for better infrastructure and equipment
- Chancellor Angela Merkel said in autumn 2016 that Germany will seek to achieve the NATO goal of spending 2% of GDP (Germany's Gross Domestic Product) on defence. This cannot be achieved during one year, but with continuous increases
- In 2016, Germany achieved 1.2% (EUR 37.1 billion), 2% of GDP means that the budget for defence must be raised up to over EUR 60 billion in the following years

German defence spending according to NATO criterion in relation to GDP (Data: 11/2016)







#### Ministerial Conference on Dec 1<sup>st</sup> and 2<sup>nd</sup> 2016

- EUR 10.3 billion have been decided by the Ministers
- Germany being one of the largest contributors with more than EUR 2 billion
   (EUR 900 million in mandatory programmes and EUR 1.2 billion in optional programmes)
- Ariane 6 fully confirmed, with 23% share for Germany in the development programme
- Positive decision on Electra with additional EUR 84 million, covering 97% of the budget (incl. EUR 60 million from Germany)
- Positive decision on ExoMars 2020, the mission will be realised, with an extended budget of EUR 337 million including EUR 29 million from Germany
- EUR 52 million from Germany on the Future Launchers Preparatory Programme, incl. EUR 9 million for MT Aerospace technology developments and EUR 10 million for the development of a German-led mini-launcher
- Micro-satellite platform Triton-X (led by LuxSpace) funded with EUR 17 million, incl. EUR 13 million from Luxembourg
- Vega Electric Upper Stage (VEnUS) funded (EUR 13 million): Leadership of OHB Italia
- Fly-Eye telescope for SST confirmed for OHB Italia (EUR 12 million)



### **Appendix: Selected current projects**





#### **OHB Venture Capital GmbH**

- The company was established in 2016 and will be particularly investing in the early phase of companies active in technologies and services closely related to space
- The company closed its first deal:
   Investment in the start-up company astrofactum
   (picture on the right: after the contract signing on March 15, 2017)
- astrofactum was established in 2014, the company will provide access to astronomic applications from space to a wide user group
- Activities include the conception and the realisation of projects as well as the market of linked astronomical observation capacities

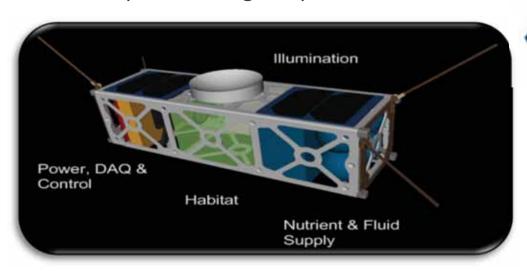






### LuxSpace & OHB Venture Capital GmbH: Establishment of Blue Horizon s.à r.l. in Luxembourg

- Blue Horizon will be pursuing the vision of creating the necessary conditions for enabling sustainable life in space and for revitalising ravaged landscapes on the Earth by applying the technologies and processes of life sciences
- The company will cooperate intensively with national and European research institutes to develop new life science products and services for Space and Earth use
- One idea is a project called "CUBEHAB", which aims for create viable living conditions on the Moon as early as in 2020. By extracting oxygen from "lifeless" lunar rubble, it will be possible to grow plants on the Moon

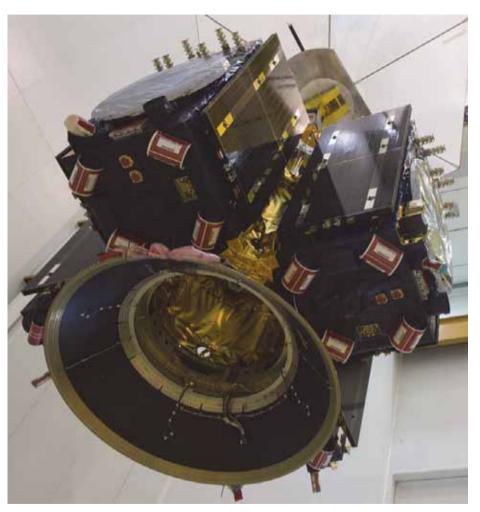






### OHB System Satellites for the European navigation system Galileo

- OHB System is main contractor for design and manufacturing of 30 Galileo FOC\* satellites
- Customer: EU-commission and ESA
- Contract budget: EUR 1,171 million
- Navigation payload is subcontracted to Surrey Satellite Technology Ltd., GB
- 14 Galileo FOC\* satellites from OHB have been launched so far
- Early services have started in Dec 2016



Preparation for the first launch of four Galileo FOC\* satellites at the same time on an Ariane 5 rocket in November 2016

<sup>\*</sup> full operational capability



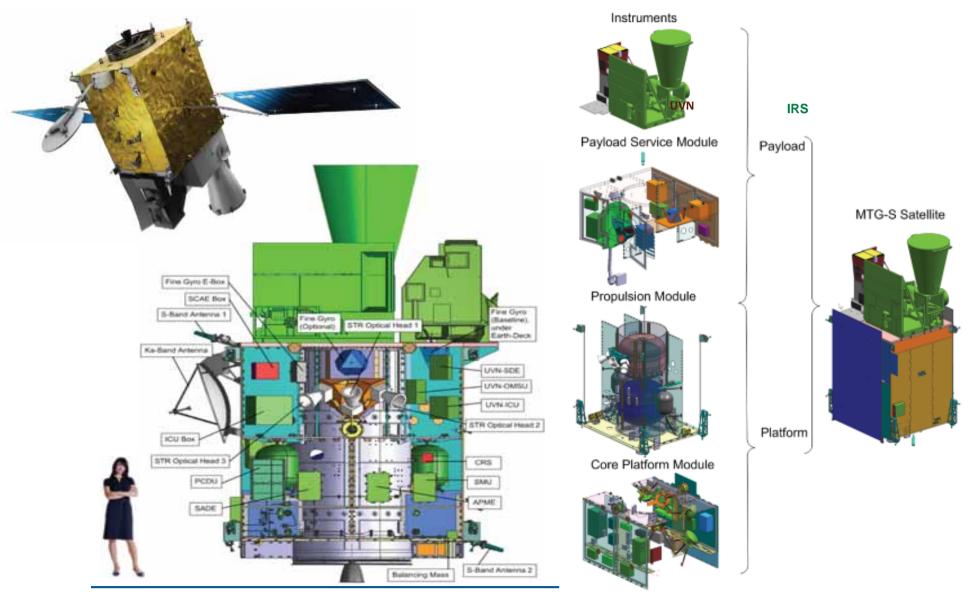
### OHB System Meteosat Third Generation (MTG)



- To provide meteorological images for the European / international weather forecasting services after end-of-operations of Meteosat second generation
- Provision of improved and enhanced data for climate research
- Customer: ESA and EUMETSAT
- OHB System is partner of the prime contractor Thales Alenia Space
- Products: Six Satellites, of which are
   4 MTG-Imager-Satellites and
   2 MTG-Sounder-Satellites
- Launches from 2020 on



### OHB System MTG-S Satellite with IRS instrument





### OHB's first geostationary communications satellite "H36W-1" for Spanish satellite operator HISPASAT

- Satellite was launched successfully on January 28, 2017
- First satellite to use Europe's new SmallGEO platform, developed through a public-private partnership between the European Space Agency (ESA) and OHB
- SmallGEO is the first telecommunications satellite to be developed, integrated and tested in Germany for more than 25 years
- OHB was/is responsible for
  - the overall satellite system
  - integration of the satellite
  - in-orbit testing and start-up
  - real-time support during the satellite's entire 15-year service life
- Development of the platform was finished in 2016, development costs will be amortised linearly over approximately 10 years

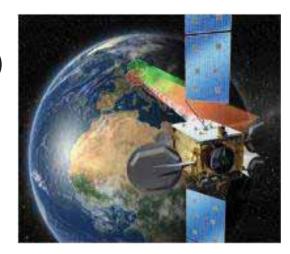




#### **OHB System**

#### **Heinrich Hertz**

- Customer: Deutsches Zentrum für Luft- und Raumfahrt (DLR)
- DLR programme for testing of innovative communications and platform technologies in space and on ground in Ku- and Ka-Band
- Partially used by the German Federal Armed Forces



#### **Electra Programme**

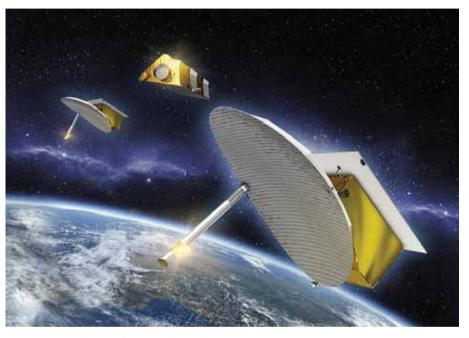
- Public Private Partnership between ESA, SES S.A. and OHB System, contract with SES signed in March 2016
- Part of ESA ARTES 33 programme
- SmallGEO satellite with electric propulsion for transfer and station-keeping
- Satellite offers a payload capacity of medium-sized satellites and reduced launching cost of small-sized satellites





#### **OHB System SARah system overview**

- The SARah System consists of one space segment and one ground segment
- The space segment includes two satellites containing reflector technology, which is well known and proven through SAR-Lupe (delivered by OHB) one satellite with Phased Array
  - Technology (delivered by subcontractor Airbus Defence and Space)
- The ground segment in Gelsdorf incl. elements for controlling the system, the satellites, two ground stations and an interface to the customer

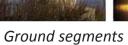


Example for Reflector (OHB) and Phased Array satellites



Ground segment in Gelsdorf

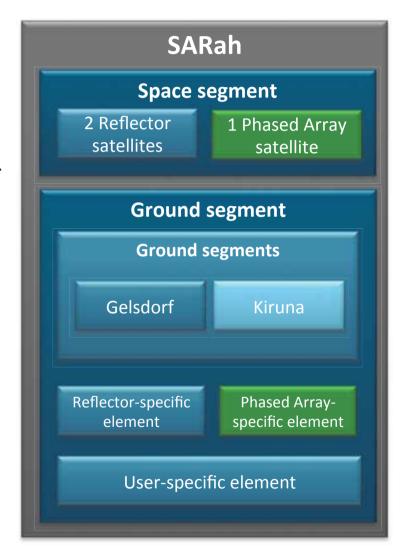






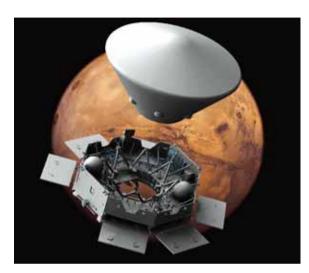
### OHB System SARah competencies

- Customer: Federal Office of Equipment, Information Technology and In-Service Support of the Bundeswehr (BAAINBW)
- Contract volume: EUR 816 million
- OHB System as prime contractor is responsible for
  - the overall system and its performance
  - realising the ground segment and the userspecific element, ground station Gelsdorf and interfaces
  - realising the part-system reflector
  - launch, implementation of the two satellites
- Airbus Defence and Space as prime subcontractor is responsible for realising the part-system Phased Array
- All milestones have been reached successfully, project progress according to schedule





### OHB System ExoMars 2020: Understanding if life ever existed on Mars

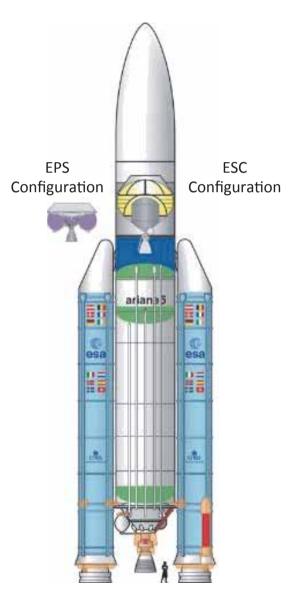




- Order intake to be expected soon,
   MC 2016 has approved the mission
- OHB is Core Team Partner to the Prime TAS-I for the carrier
- AntwerpSpace delivers the communication system of the Carrier
- OHB plays a major role in finding, processing, distribution and analysis of Mars samples:
  - Search: High-Resolution Camera (HRC) for manoeuvre on Mars and the search for suitable sites for drilling (DLR project)
  - Sample Preparation & Distribution: Sample Preparation
     & Distribution System and structure of the Analytical
     Laboratory Drawer (ESA project)
  - Analysis: Contributions in the Raman Laser Spectrometre (Pasteur payload) with Optical Fibre Harness and support for Internal Optical Head (DLR project)



#### MT Aerospace manufactures 10% of the Ariane 5 launcher



- All major structures and tank components
- Largest contribution to Ariane outside France











Bulkheads



ESC LH<sub>2</sub>-Tank Components



EPS Tanks



Thermal Protection Components



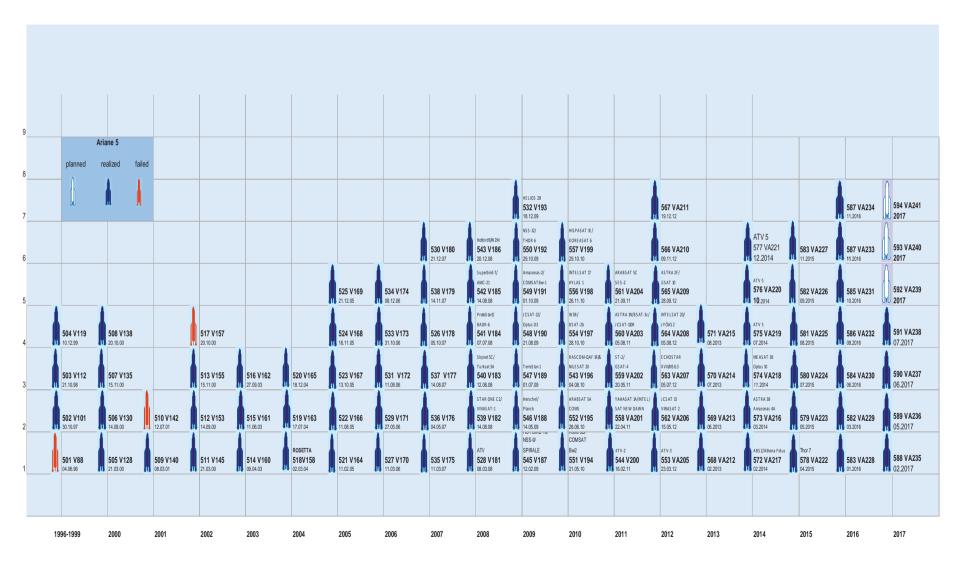
Hydraulic Pressure Vessels



Cardan



### MT Aerospace Ariane 5 launch schedule





### MT Aerospace Ariane 6 workshare

- MT Aerospace with ~11.5% workshare of Ariane 6
- Design definition authority for metallic aerostructures and 50% of IMC
- Ariane
   risk sharing
   partner with
   EUR 35 million
   own investment





#### **MT Mechatronics**

- MT Mechatronics GmbH (MTM) received an order-intake from the National Astronomical Research Institute of Thailand (NARIT) for the delivery of a 40m radio telescope, the contract was signed on March 17, 2017
- MTM strengthened its position as market leader in the area of large antennas and telescopes by winning this contract under competition



Telescope built for the Instituto Geográfico Nacional (Spain) which was delivered by MT Mechatronics in 2005.

It is one of the largest and most powerful of its kind.

It is comparable to the model ordered by the National Astronomical Research Institute of Thailand.



#### **OHB Logistic Solutions**

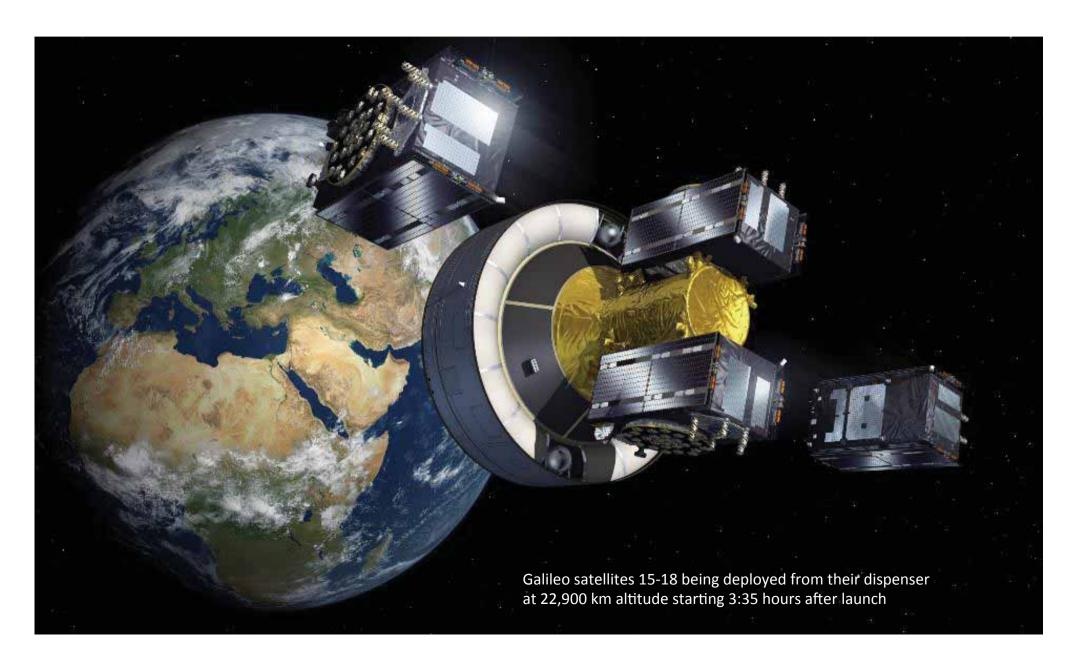
- The company was established in 2016 and has started to market its new product Visioboxx in 2017, a container tracking device with a selling price of < 100 EUR (valid for large quantities)
- Operational trials are ongoing in cooperation with i.a. two of the Big Five Logistic companies in the world
- Visioboxx provides the essential data of any shipment:
  - the precise position of container (position data from Galileo / GPS)
  - the temperature within the container between -40°C and +85°C
  - the humidity within the container between 0% and 100%
  - monitoring of container door (open / close)
  - monitoring of container shocks







# **Appendix:** OHB Company Profile





#### **OHB** milestones

## **Corporate Milestones**

Otto Hydraulik Bremen acquired in 1981 Space activities commenced in 1985

IPO of Teledata in 2001 MT Aerospace acquired in 2005 LuxSpace established in 2005

Kayser-Threde acquired in 2007



CGS acquired in 2009

AntwerpSpace acquired in 2010

OHB Sweden acquired in 2011

OHB System AG and Munich-based Kayser-Threde GmbH merged in 2014

## **Business Milestones**

OHB System awarded SAR-Lupe contract in 2001 OHB System and ESA signed Galileo contract in 2010

Contract for EDRS signed by OHB System and Astrium Services in 2011



OHB awarded contract for MTG in 2012 OHB System awarded contract for the SARah system in 2013

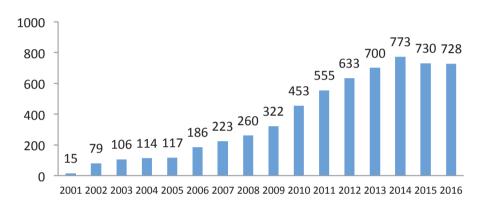
ESA, SES and OHB agreed on realisation of Electra in 2016

OHB System awarded contract by ESA and EC for Batch 3 of further eight Galileo Navigation Satellites of around EUR 324 million in June 2017

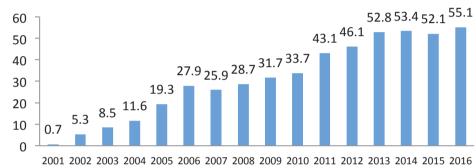


#### **OHB long-term growth**

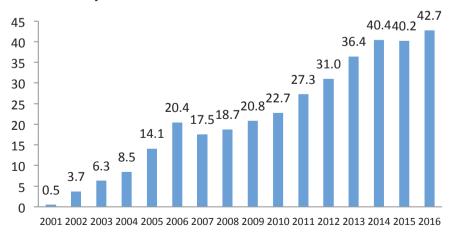
#### **Total revenues / EUR million**



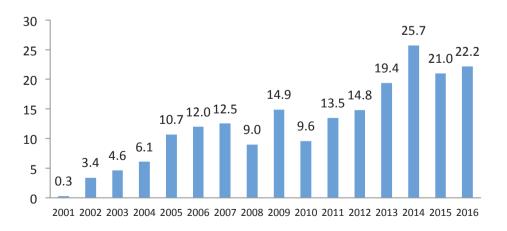
#### **EBITDA / EUR million**



#### **EBIT / EUR million**



#### Net income / EUR million





## **Appendix:** Half-year financials in detail



OHB Logistic Services' new product Visioboxx, a container tracking device mounted on a reefer container



## OHB Group in brief 6M/2017

EUR (000)	6M/2016	6M/2017	Δ
Total revenues	316,361	354,153	+12%
EBITDA	23,998	25,796	+7%
EBIT	18,255	19,254	+5%
EBT	15,717	17,820	+13%
Net profit after minorities	9,062	10,566	+17%
EPS (EUR)	0.52	0.61	+17%
Order backlog (June 30)	1,644,736	2,219,973	+35%



## Cash Flow / EUR (000)

	6M/2016	6M/2017
Net outflow of funds for operating activities	- 67,012	- 76,491
Net outflow of funds due to investment activities	- 6,789	- 17,098
Net inflow of funds from financing activities	54,554	73,420
Change in liquid funds	- 19,247	- 20,169
Others	67	48
Liquid funds at the beginning of the period	59,949	56,567
Liquid funds at the end of the period	40,764	36,446



### Assets / EUR (000)

	31/12/2016	30/06/2017	$\Delta$
Non-current assets	211,370	238,061	+26,691
Property, plant and equipment	60,640	73,997	+13,357
Other financial assets	30,979	35,646	+4,667
Other intangible assets	89,967	98,995	+8,938
Others	29,784	29,513	- 271
Current assets	471,544	492,443	+20,899
Inventories	50,215	54,572	+4,357
Trade receivables	326,336	355,601	+29,265
Cash and cash equivalents (incl. securities)	56,952	36,887	- 20,065
Others	38,041	45,383	+7,342
Total assets	682,914	730,504	+47,590

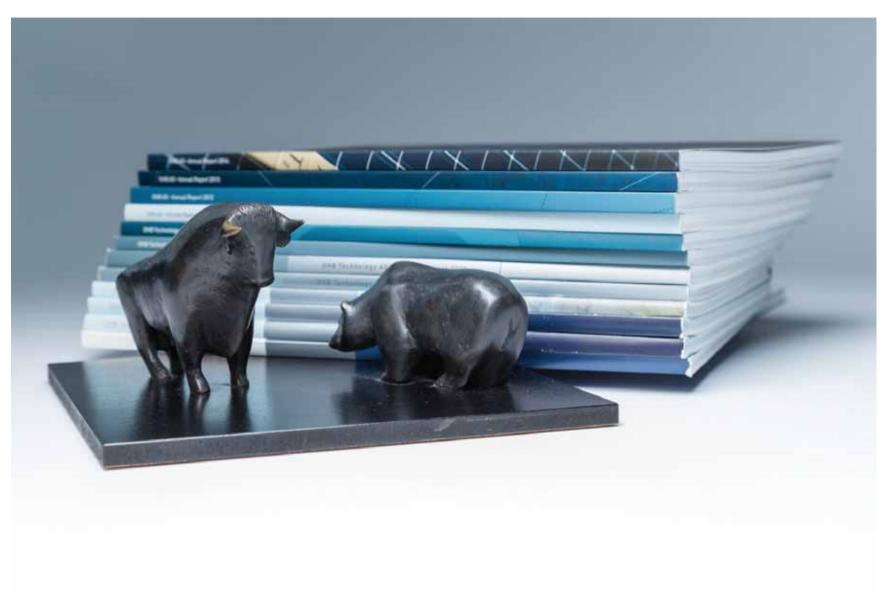


## Shareholder's equity and liabilities / EUR (000)

	31/12/2016	30/06/2017	$\Delta$
Equity	183,590	193,378	+9,788
Non-current liabilities and provisions	171,391	197,051	+25,660
Provisions for pensions	100,437	99,789	- 648
Non-current advanced payments	37,398	31,994	- 5,404
Others	33,556	65,268	+31,712
Current liabilities	327,933	340,075	+12,142
Trade payables	67,308	64,552	- 2,756
Current advanced payments	102,389	59,428	- 42,961
Current financial liabilities	93,108	145,534	+52,426
Others	65,128	70,561	+5,433
Total liabilities	682,914	730,504	+47,590



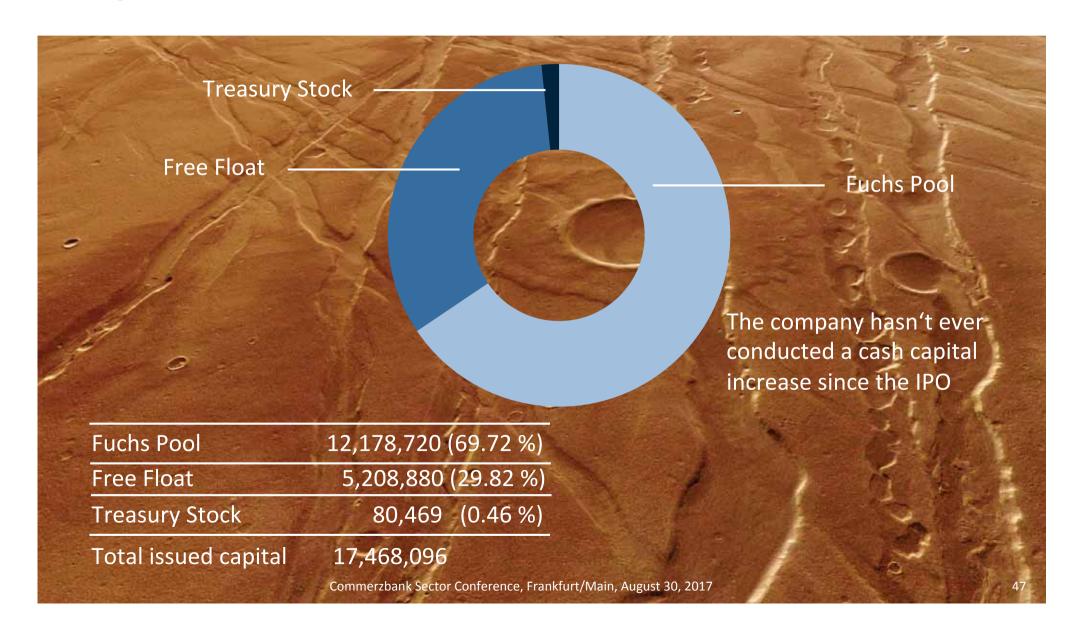
# Appendix: OHB stock at a glance





## Stable shareholder's structure since many years

August 2017



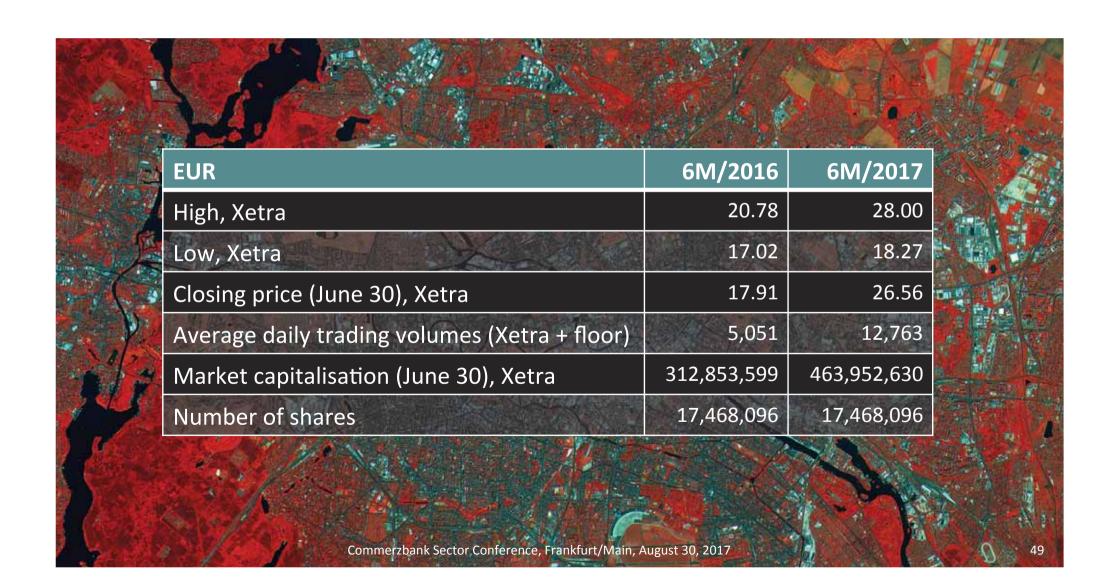


### **Analyst ratings**

Date	Institution	Price target	Recommendation
august 2017	Commerzbank	31.00 EUR	hold
August 2017	DZ Bank	35.00 EUR	buy
August 2017	HSBC Trinkaus & Burkhardt	32.00 EUR	hold
August 2017	Bankhaus Lampe	36.00 EUR	buy
August 2017	equinet Bank	32.00 EUR	neutral



### The stock at a glance





#### Performance of stock

from January 1 through August 23, 2017 (Index-tied)





#### Financial calendar 2017 / 2018

August 30, 2017 Commerzbank Sector Conference / Frankfurt/Main (FFM)

November 14, 2017 Nine-month interim report 2017, conference call

November 27-29, 2017 Analyst presentation at German Equity Capital Market Forum / FFM

February 7, 2018 Capital Market Day

March 21, 2018 Consolidated Financial Statements FY 2017

8:30 a.m. Annual press conference / Bremen

2:00 p.m. Analyst conference (DVFA) / Frankfurt/Main

May 9, 2018 Three-month interim report 2018, conference call

May 24, 2018 Annual General Meeting / Bremen

August 9, 2018 Six-month interim report 2018, conference call

November 13, 2018 Nine-month interim report 2018, conference call



#### **Contact**

Marco R. Fuchs
Chief Executive Officer

Kathrin Folkerts
Investor Relations

Homepage

Site

marco.fuchs@ohb.de +49 (0) 421 20 20 664

kathrin.folkerts@ohb.de +49 (0) 421 20 20 720

www.ohb.de

Karl-Ferdinand-Braun-Str. 8, 28359 Bremen, Germany



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<sup>\*</sup> European global satellite-based navigation system. The FOC (full operational capability) phase of the Galileo programme is being funded by the European Union. The European Commission and the European Space Agency ESA have signed a contract under which ESA acts as the development and sourcing agency on behalf of the Commission. The views expressed here do not necessarily constitute the positions of the European Union and ESA. "Galileo" is a registered trademark owned by the EU and ESA under the HABM application number 002742237.