



# **New Space Berlin** The Space Industry in the Germ

The Space Industry in the German Capital Region



Test set-up and assembly area in a clean room environment at Berliner Glas



Model of TET-1 Satellite by Astro-und Feinwerktechnik Adlershof

#### Companies

Aerospace Innovation AIRBUS Defense & Space Alberding Deutschland Arquimea Deutschland ASTRATUM Astro- und Feinwerktechnik Adlershof Berliner Glas Berlin Space Technologies beSpace Blue Sky Solutions Canlas Laser Processing DBS AEROSPACE **DELPHI IMM** Eagleyard Photonics ECM Launch Services Esri Deutschland Ferchau Engineering First Sensor geoSYS Germania Werk Schubert German Orbital Systems HERE HSA Microtech IQ Wireless **KAPI** electronics LiveEO Magson Newtec Communications NICOMATIC Optris Orbit Recycling Philotech Systementwicklung und Software pinasvs Planet Point Cloud Technology PTScientists Project AlphaLink Resonic SAP Sonaca Space Space Structures TomTom Vectronic Aerospace

## **Berlin: Germany's New Space** hotspot

For the past few years, private spaceflight has been developing rapidly worldwide. It is playing a major role in addressing global challenges. New technical possibilities open up applications in many sectors - from agriculture, to disaster and environmental protection, energy supply, telecommunications, to automated transport. One of the hotspots of this development is Berlin.

Berlin facilities for small and nano-satellites are among the pioneers in the world which have rapidly gained commercial importance in recent years. More than 70 companies and research institutes from the German capital region strive for space and with their various expertise and specializations, form a holistic, interdisciplinary center of competence for space technologies and applications.

Operation in space places extremely high demands on technology. What's needed is the cooperation of highly specialized researchers and engineers from various fields. Berlin-Brandenburg has optimal conditions in this regard. The extensive research landscape and strong business clusters, particularly in the fields of



Small satellites are the future of spaceflight; Berlin is both the cradle of this technology and their most important German location today. This innovation has been taking place at companies, research institutions, and universities for more than 20 years. Thus, the value chain from system

technology to the marketing of data products is at home in the German Capital Region.'

**Dr. Sebastian Scheiding** CEO Astro- und Feinwerktechnik Adlershof GmbH



'From Berlin-Adlershof we plan space missions to objects of our solar system and to search for planets around distant stars. We develop hardware and software components and algorithms for data analysis. The region's research

institutions and space industry offer ideal conditions for this interdisciplinary work.'

Prof. Dr. Heike Rauer Head of the Institute of Planetary Research German Aerospace Center

ICT, photonics, and aerospace, ensure that New Space businesses are able to thrive in an optimal environment. The city also attracts talent from all over the world.

#### Excellent research

The Technische Universität Berlin is the university with the most satellites in orbit worldwide. During the mission in February 2018 that put four nanosatellites communicating with each other into orbit, the Berlin-based companies IO wireless. Astro- und Feinwerktechnik Adlershof, and ECM Space Technologies were involved in addition to the TU Berlin.

The second important research institution is the German Aerospace Center with the Institutes for Planetary Research and for Optical Sensor Systems, which also operate their own technology development.

Numerous other research institutions contribute to space technology - including medical research at the Center for Space Medicine (ZWMB) of the Charité - Universitätsmedizin Berlin.



S-Net satellite check out



TU Berlin S-Net team in front of Soyuz fairing

#### **Extensive expertise**

The Berlin-based companies and research institutes develop and build subcomponents as well as complete small and nanosatellites with a variety of application technologies. These include drive technology, lightweight components, electronics, optics, laser systems, power supply, measuring instruments, communication technology, sensors, simulation software, etc.

Large international players are also discovering Berlin as a location for space technology. Planet, one of the world's most important New Space players, operates the largest satellite fleet in space from Berlin. There are currently about 150 satellites in use, with which Planet scans our earth daily and which it then uses to create a picture of the whole world once a day. Airbus Defense and Space has a branch in Potsdam and the Belgian aerospace group SONACA is represented with the Sonaca Space GmbH in the Technology Center Adlershof.

#### Innovation and startup culture

Berlin is very popular with tech startups. The primary reasons include the already established startup scene with a variety of incubators, accelerators, and co-working spaces, the



"The excellent cooperation with innovative companies and institutions were a key factor for our successful satellite and space projects. The increased number of international students in our space program confirms the attractiveness

of Berlin as a region for innovation in space technology."

Prof. Dr. Klaus Brieß Chair of Space Technology Department of Aeronautics and Astronautics Technische Universität Berlin



rapidly and has the potential to significantly influence many industries on Earth. With its startup ecosystem, its large amount of tech talent from all over the world, and the pioneering role of TU Berlin in small satellite construction, Berlin

'Space technology is changing

is a perfect breeding ground for the next groundbreaking New Space startups."

Sven Przywarra Founder NewSpaceVision Co-founder LiveEO

comparably more affordable cost of living, and the increased attractiveness of the city for young people from all over the world.

The players particularly benefit from intensive cooperation and networking. The Berlin Brandenburg Aerospace Alliance (BBAA) as the local industry network and the NewSpaceVision initiative, which offers a platform for continuous exchange with meetups and conferences, play an important role.

## To the moon and beyond

PTScientists aim to land the first private mission on the Moon. They will deliver a number of scientific and cultural payloads to the lunar surface, as well as two Audi lunar quattro rovers, which will capture the first hi-res images of Apollo 17's original lunar roving vehicle. PTScientists are working with Vodafone to create a 4G network on the Moon to send the data back to their lander, which will then transmit it to Earth. Additional mission partners are Infineon, Omega and On, who will support the mission with components, timekeeping and mission gear.

Players from Berlin are also participating in the SpaceX Mars mission.

**Business Incubation / VC** AtomLeap Interstellar Ventures

BAM Federal Institute for

#### Research

Materials Research and Testing Beuth University of Applied Sciences Berlin Brandenburg University of Technology Cottbus-Senftenberg Center for Space Medicine Berlin Deutsches Elektronen-Synchrotron DESY Ferdinand-Braun-Institut, Leibniz-Institut fuer Hoechstfrequenztechnik (FBH) Fraunhofer Heinrich Hertz Institute HHI Fraunhofer Institute for Open Communication Systems FOKUS Fraunhofer Institute for Production Systems and Design Technology IPK Fraunhofer Institute for Reliability and Microintegration IZM Freie Universität Berlin German Aerospace Center (DLR) GFZ German Research Centre for Geosciences Hasso Plattner Institute Helmholtz-Zentrum Berlin für Materialien und Energie Hochschule für Technik und Wirtschaft Berlin Humboldt Universität Paul Drude Institute for Solid State Electronics (PDI) Leibniz Institute Technical University of Applied Sciences Wildau Technische Hochschule Brandenburg Technische Universität Berlin Zentrum zur Förderung eingebetteter Systeme (ZeSys) Associations / networks Association for Geoinformatics. GeoIT and Navigation Berlin-Brandenburg Aerospace Alliance (BBAA) DIN Deutsches Institut für Normung **Disrupt Space** GEOkomm Verband der GEOInformationswirtschaft Berlin/Brandenburg New Space Vision TelematicsPRO Utilities

# Our goal: your success!

Berlin offers excellent starting conditions for growth, production, research and development. Economic policy focuses on innovation and technological performance.

Our goal is to help companies and scientific institutes start up, develop and network here.

We support you with:

Finding a location

Funding and financing

- Technology transfer and R&D cooperation
- Collaborative networks
- Recruiting strategy
- International market development.
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Photo of Berlin from the Sentinel-1A satellite, transmitted via laser using technology from Ferdinand Braun Institute and Berliner Glas Grou

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Photos: Cover: #FreiheitBerlin/be Berlin, Inside: Astround Feinwerktechnik Adlershof, Berliner Glas Group, Roscosmos. Back Cover: ESA

Design: Marc Mendelson Production: Laserline, Berlin © April 2018