

Cooperation in the Space Sector between Bremen and Zuid-Holland

ACTION AGENDA 2019-2022

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The space sectors and regional governments of Bremen and Zuid-Holland join forces to strengthen (aero)space in the Province of Zuid-Holland and the German Federal State of Bremen. On 6 March 2019 Jeroen Rotteveel (Chairman of the board of SpaceNed), Jaap Smit (the King's Commissioner in the Province of Zuid-Holland), Martin Günthner (Senator in the State of Bremen) and Holger Oelze (CEO of Aviaspace) signed a Joint Declaration of Intent on further collaboration in the area of space.



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Bremen and Zuid-Holland are both European regions with a large concentration of industrial, research and scientific space activities. Germany and the Netherlands are both founding partners of ESA as well as of the European Union. Several industrial and Research & Development partnerships between space cluster actors in both regions already exist. On this strong basis, both regions intend to strengthen space industry and research collaboration.

The global space sector has undergone significant evolution in technological development, knowledge dissemination and size in recent years. Therefore, space industry and research facilities face common challenges. Bremen and Zuid-Holland have thus come to the following understanding of shared challenges:

- How to strengthen the existing space innovation ecosystem in both regions and broaden it by including new industrial and scientific actors;
- How to ramp up production rates in space industry, using new and smart manufacturing techniques like robotics, M2M-techniques, 3D printing, etc.;
- How to implement smart engineering techniques to reduce engineering costs and shorten the time to market of new products and services, using smart simulation and rapid prototyping;
- How to design and apply new light-weight materials and smart structures for (aero) space in order to reduce operational costs;
- How to enable space and satellite application startups to develop to scale ups.

Why Zuid-Holland: Space in Zuid-Holland

Over 80% of all space activities in the Netherlands take place within the Province of Zuid-Holland: the technical heart of the European Space Agency, ESTEC - European Space Research and Technology Centre - is located in Noordwijk, the country's largest space company is Airbus Defence & Space in Leiden and Europe's leading faculty of Aerospace Engineering is part of the University of Technology in Delft. Space Campus Noordwijk is currently being developed as the European hotspot for space activities with facilities including offices, makerspace, labs & testing areas and development & production locations. In the region, vibrant commercial clusters exist



around SmallSats, Free Space Optics and Earth Observation. A thriving Composites cluster, including research centres for both digital and large-part manufacturing, provide high end materials for the aerospace & space industries. The region is home to the complete chain of academic research & knowledge, first, second & third tier suppliers and end users. Some 25 organisations & institutes and over 75 companies are actively working in Zuid-Holland's space cluster, making it one of the most complete and dynamic space ecosystems in Europe.

Why Bremen: Space and Aeronautics Industries in Bremen

More than 140 enterprises and 20 science institutes power the aeronautics and space industries in Bremen. The order books are well filled. More than 12,000 employees in the industry generate revenues of more than 4 billion euros per year. Leading companies such as the Airbus Group, ArianeGroup, Rheinmetall Electronics, OHB, and their suppliers contribute significantly to this success. The companies' economic success is founded on their employees' excellent qualifications. To ensure that this situation can be maintained and further improved, Bremen invests heavily in future developments: interdisciplinary and intersectoral research and development strengthen the location and create synergy effects with other strong industries in Bremen. Cutting-edge research in the state of Bremen sustainably supports the industries in the fields of materials sciences and production technologies, space systems, remote sensing, bionics, robotics among others. Major products from Bremen are the wings

of the Airbus aircraft, the Ariane upper stages and the satellite navigation system GALILEO. The ESA Business Incubation Centre (BIC) Northern Germany is the new flagship project for the aeronautics and space sector in Bremen. Our space incubator – part of the European Space Agency's (ESA) network of 29 centres across Europe – is set to take on startups from Bremen as well as from other federal states in Northern Germany.



The ECOMAT research and technology centre: Bremen's contribution to the key technology of lightweight construction



Bremen and Zuid-Holland are both European regions with a large concentration of industrial, research and scientific space activities. The regions aim to strengthen space activities and face challenges collaboratively.

Main target groups

The main target groups for the joint activities within this Action Agenda are:

- 1 Business representatives
(with a focus on small and medium size businesses);
- 2 Researchers and students;
- 3 Startup entrepreneurs;
- 4 Policy and decision makers.

Three Action lines

1. Actionline 1: Arrange Business to Business and Business to Knowledge networkmeetings during big international Space events

The space communities of Bremen and Zuid-Holland attend several international space events like IAC Space and Tech Expo during the year. The parties in this Action Agenda like to facilitate B2B and B2K networkmeetings between the space communities of Bremen and Zuid-Holland during this big events. We will organize this in order to strengthen R&D and business cooperation. We expect to facilitate yearly a minimum of two of these networking events. In 2019 we have already organized two of these networkingmeetings during IAC Washington (on 23 October 2019) and Space Tech Expo (on 19 november 2019).

2. Actionline 2: Trademission from Bremen to Zuid-Holland



Trademission on space during a working visit of King Willem-Alexander and Queen Máxima to Bremen (March 2019). © Nederlandse ambassade Berlijn, fotograaf: Jasper Kettner.

As a follow up of the successful trade mission from the Netherlands to Bremen in March 2019, the need has arisen to organize a recurring trade mission from Bremen to Zuid-Holland in order to further strengthen trade relations and cooperation between these two strong European Space regions. The regional governments (province of Zuid-Holland and Bremen) in cooperation with the national governmental agencies (Netherlands Space Office and Netherlands Enterprise Agency), Dutch and German embassies, and in cooperation with both space communities (through Aviaspace and SpaceNed), will organize this trade mission. The intention is to organize the trade mission from Bremen to Zuid-Holland around the ESTEC Industry Days (September 2020).

3 Actionline 3: (R&D) cooperation between space industry and knowledge institutes from Bremen/Zuid-Holland

With action line 3, we aim to stimulate concrete cooperation activities and projects based on the joint challenges and complementary strengths in both regions.

a. ESA BIC collaboration Bremen and Zuid-Holland

The ESA BICs in both regions have a history of strong research and development paired with commercial expertise, not only in space-related topics. The many existing collaborations between partners in the regions and the recent change of course of ESA towards close collaborations between the individual ESA BICs set the theme for our ESA BIC collaboration. Specifically, we would like to:

- elaborate how startups can access the technical partners of the partner region;
- promote each others services;
- encourage transregional collaborations.

b. Collaboration between research institutes and universities Bremen and Zuid-Holland

Knowledge institutions in both regions such as TU Delft, TNO, NLR, University of Bremen, DLR and Fraunhofer have the ambition to strengthen cross-border cooperation in the area of space. Think of more internships and joint research. TU Delft and the University of Bremen have a longterm collaboration, especially in the field of aerospace materials with the focus both on space and aviation. This collaboration is about design of composite launcher structures, new design and manufacturing technologies. The knowledge institutions from both regions are willing to intensify the collaboration.

c. Themes for mutual cooperation

Areas for main thematic emphases are:

- 1 Earth Observation, Satellite Navigation & Communication (small satellites, instrumentation and application)
- 2 Light-weight Materials, Structures and industry 4.0.
- 3 Artificial Intelligence / Augmented & Virtual Reality.



We will start with the themes mentioned under 2 and 3. During the Space Tech Expo (November 2019) we will organize round table discussions with companies and knowledge institutions from both regions to further explore and develop the cooperation activities. The aim is to build consortia around joint R&D-themes that will develop and implement joint projects and programs.

Governance

A Steering Committee is formed with representatives from State of Bremen, Aviaspace, Province of Zuid-Holland, SpaceNed, InnovationQuarter and Bremen Invest. The Steering Committee will meet twice a year to monitor and update the Action Agenda. Meetings will take place alternating in Zuid-Holland and Bremen. The goal of the Steering Committee meetings is a frequent monitoring and adjustments of common actions to achieve the goals of this Action Agenda and mutually beneficial outcomes for both sides.

Costs and Finance

The organizational costs associated with the activities listed under action lines 1 and 2 are borne by State of Bremen, Aviaspace, the Province of Zuid-Holland and SpaceNed. Travel, subsistence and participation costs for events, fairs and trade missions are for the account of the participants.

Costs associated with the implementation of projects and other cooperation activities as described under action line 3 have their own method of (co)financing. Depending on the type of activity, the appropriate method for co-financing is considered (eg Horizon Europe or ESA, Interreg, or other specific national or regional instruments).



Opening SCN AVATAR, Dutch development centre for virtual and augmented reality tools and services for the space domain.

Communication

Common actions will be published on respective websites and social media channels of involved partners.

Aviaspace Bremen:

- <https://www.aviaspace-bremen.de/impressum/>
- Facebook: <https://www.facebook.com/AviaSpaceBremende-1942414092674668/>
- Twitter: https://twitter.com/aviaspace_ev
- Instagram: https://www.instagram.com/aviaspace_bremen/?hl=de

Bremen Invest:

- <https://www.wfb-bremen.de/en/page/bremeninvest-start>
- Facebook: <https://www.facebook.com/Bremeninvest/>
- Twitter: <https://twitter.com/bremeninvest>

InnovationQuarter:

- www.innovationquarter.nl
- Twitter: <https://twitter.com/InnoQuarter>
- LinkedIn: <https://nl.linkedin.com/company/innovationquarter>

SpaceNed:

- www.spacened.nl

Province of Zuid-Holland

- <https://www.zuid-holland.nl/>
- Twitter: https://twitter.com/zuid_holland
- LinkedIn: <https://nl.linkedin.com/company/provincie-zuid-holland>





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