

*United Nations/United Arab Emirates High Level Forum:
“Space as a driver for socio-economic sustainable development”
Dubai, United Arab Emirates*

Space Economy: Fostering innovation and technology transfer in support of socio-economic development

*Dr. Gerd Gruppe, Head of DLR Space Administration,
Member of DLR Executive Board*

November 9th, 2017



Knowledge for Tomorrow



Revolution of society – enabled by space technology

- ***The world has become a global village:***

- Television live broadcast
- Mobile telephony
- Data transfer in a split seconds

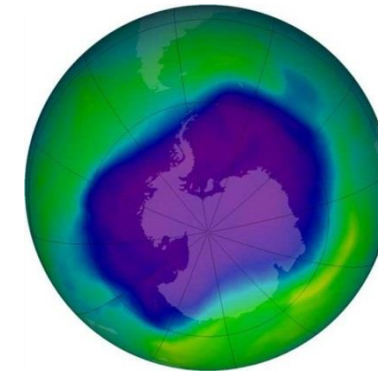
- ***Precise maps and navigation for traffic, logistics, security and "Precision Farming"***

- ***Precise time signals for synchronization of grids or financial transactions***

- ***Space technology enables climate research and environmental monitoring***

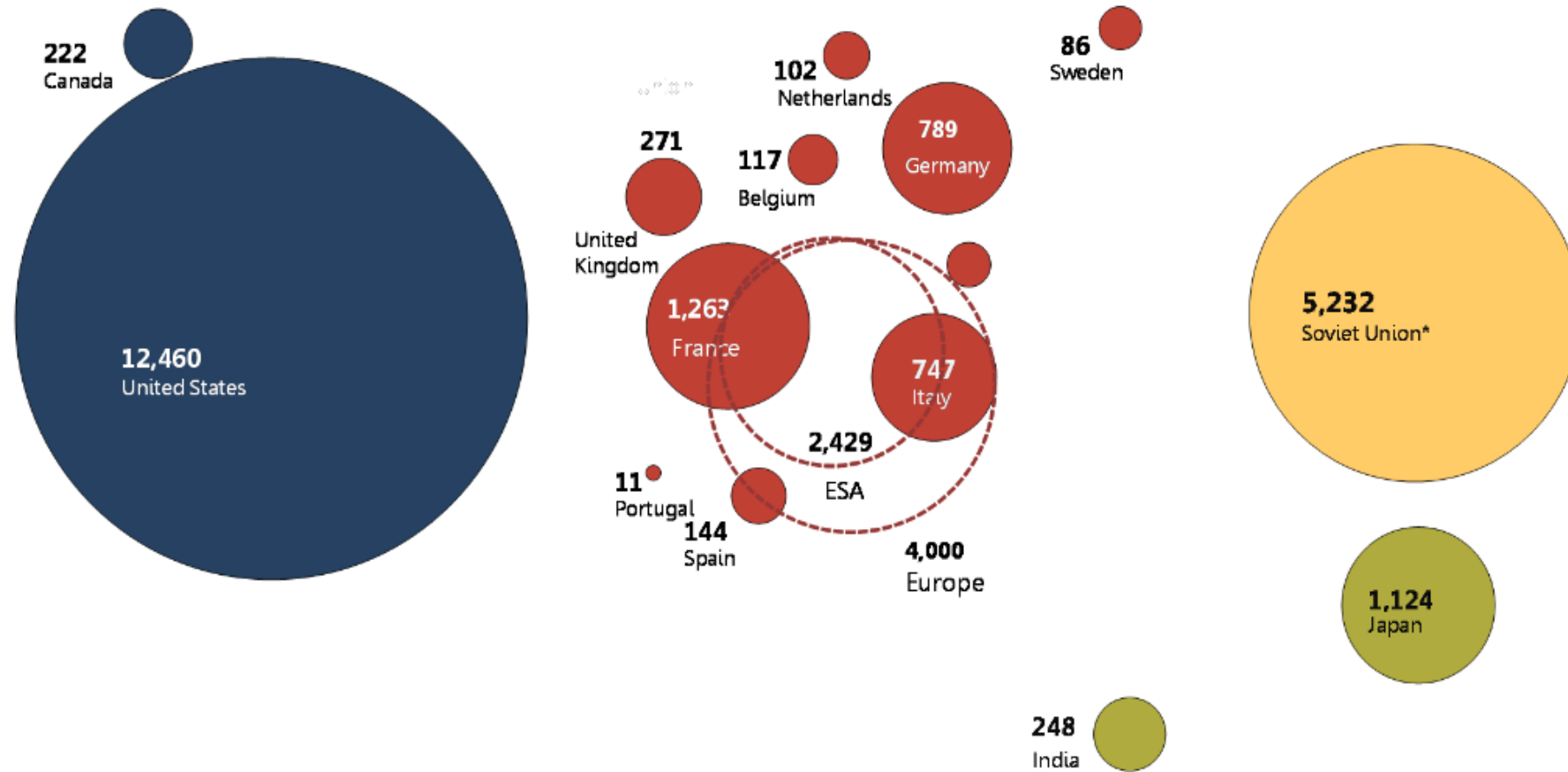
- ***Medical breakthroughs in aging research, diagnostics and wound treatment***

- ***New materials from space research (improved alloys such as aircraft turbines and prostheses)***



Development of the number and budget of spacefaring nations

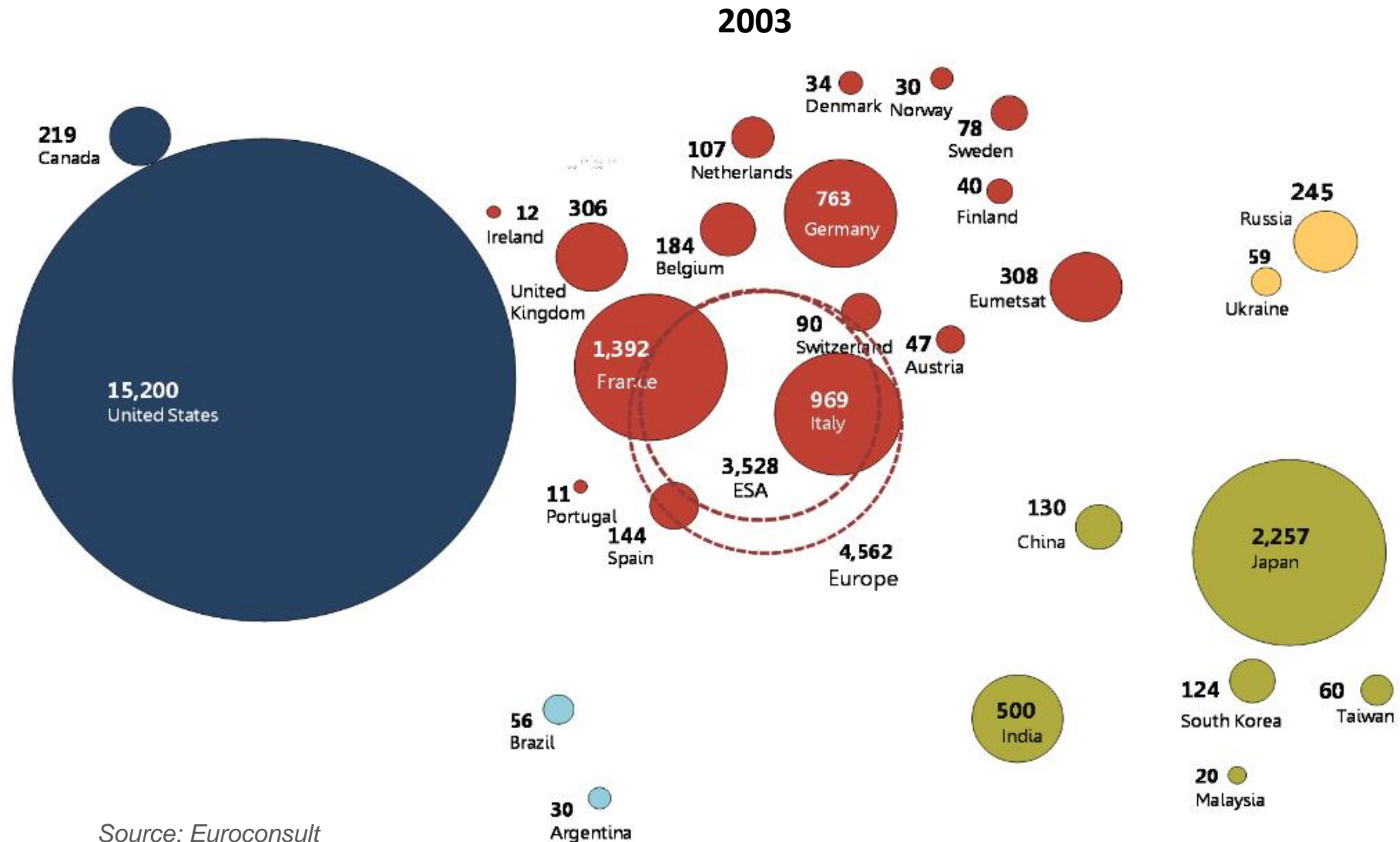
1990



Source: Euroconsult



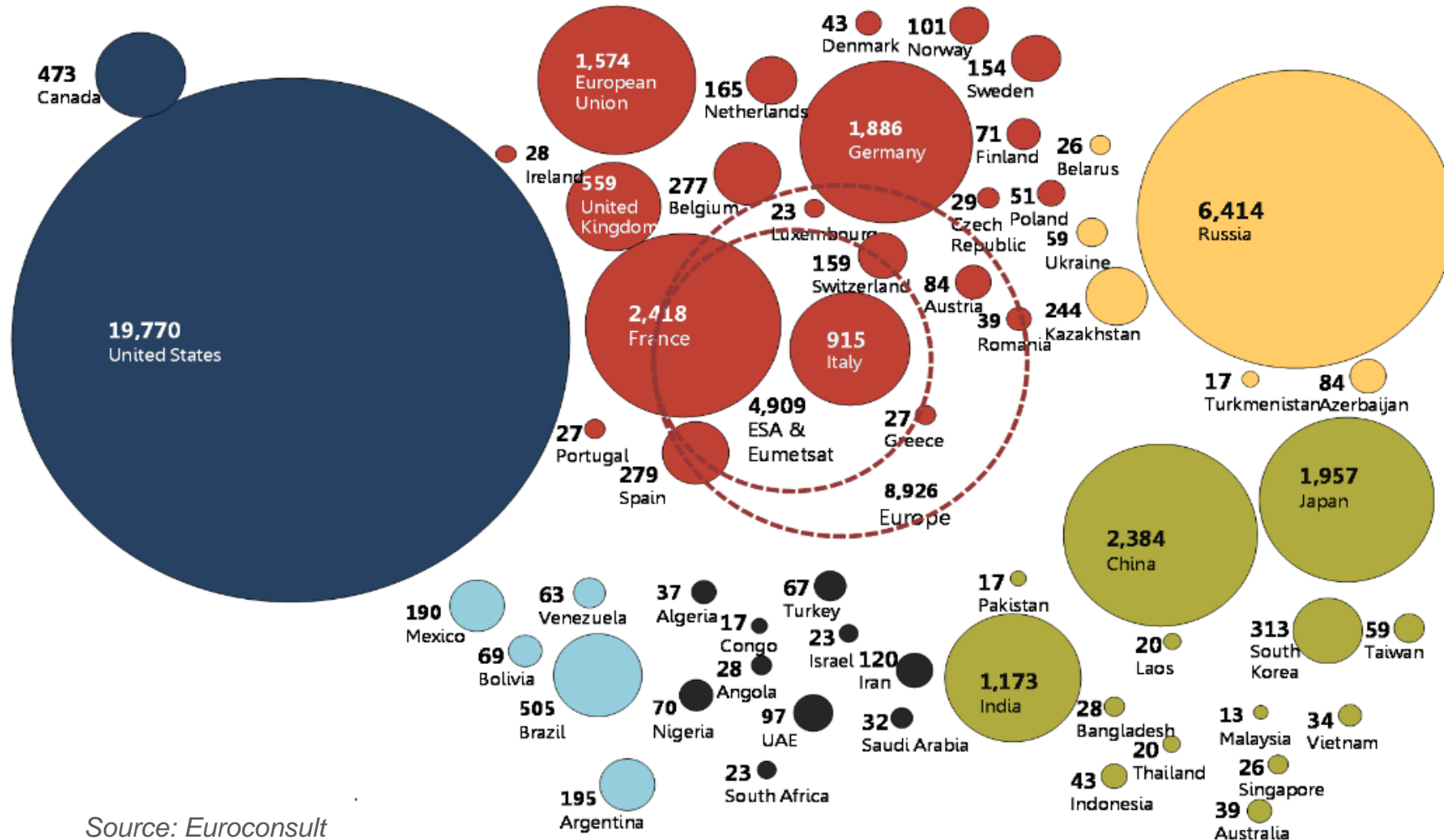
Development of the number and budget of spacefaring nations



Source: Euroconsult

Development of the number and budget of spacefaring nations

2013

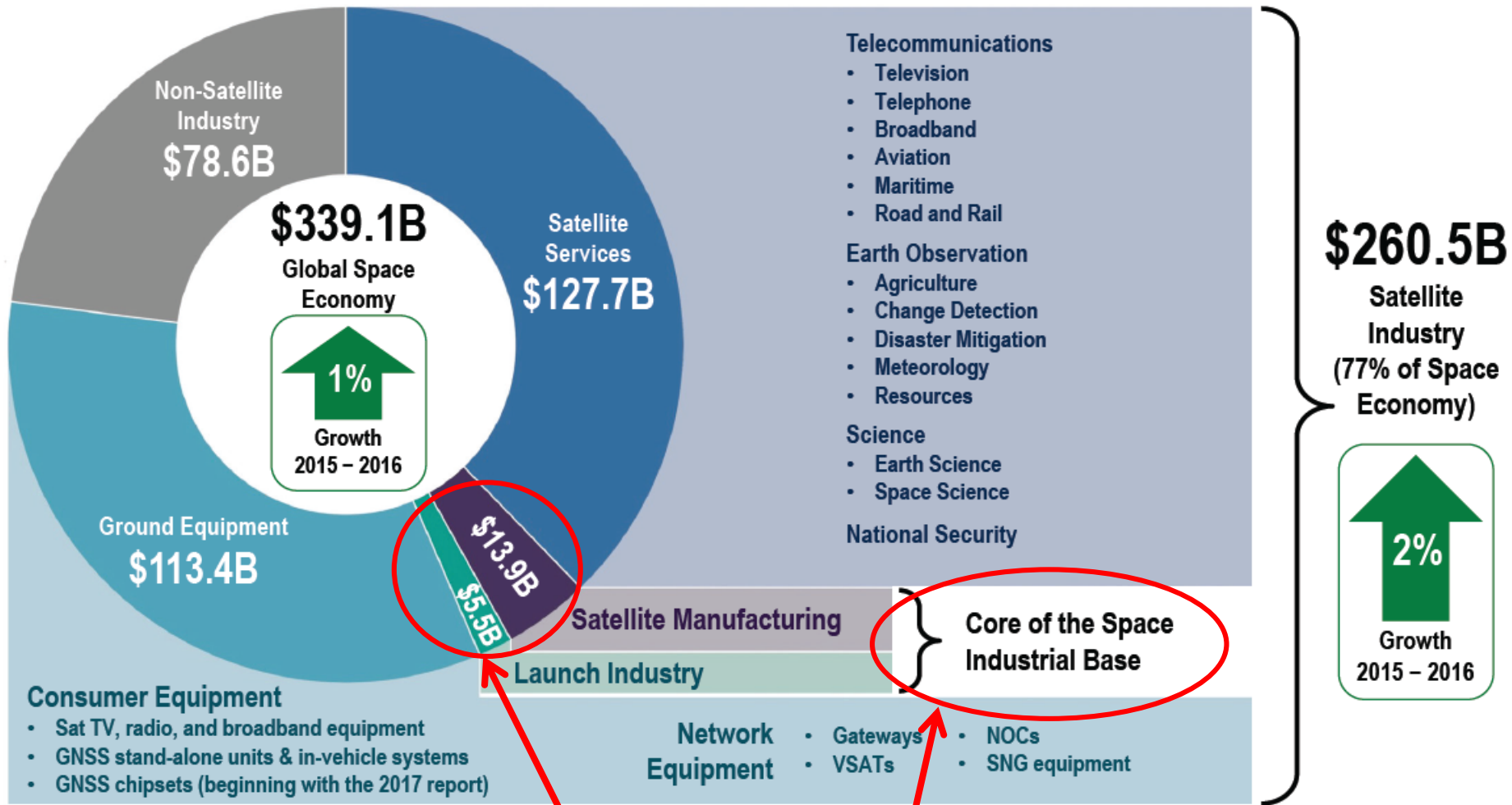


Source: Euroconsult

Global space economy 2016

Non satellite industry revenue:

- Human space flight
- Non-orbital spacecraft
- Government spending



Source: Satellite Industries Association / Bryce Space and Technology 2017

Space heavy satellite industry underpins a sector 14 times its own size





Initiative of DLR Space Administration

- **Objectives**

- Enhancement of **innovation** and **technology transfer** from/into space sector (spin-off, spin-in)
- Exploitation of **new markets**
- Creating **platforms** for information and communication between the space sector and other industrial sectors

- **Activities**

- Initial **funding** of cross-industry technology development
- Cross-industry **conferences**
- **Workshops** “New Markets”
- **INNOspace Masters** – European competition of ideas in the context of New Space Economy
- **INNOspace Weekend** – Startup Event aiming to create business concepts for Space – Automotive – Logistics





INNOspace Masters - Annual idea's contest

- The **INNOspace Masters** is seeking for pioneering transfers of know-how and technologies **from other industries** into space (**spin-ins**).
- → Partnering with space industry and ESA Business Incubators
- This year's competition:
 - **145** registered **participants** and **66** competition **entries** from **ten different countries**
 - More than 50 % of the project ideas originated from **non-space industries**
 - Competition challenge for technology transfer - from industry to space sector & vice versa („**spin in/off**“)

2016: “Satellite 4.0”

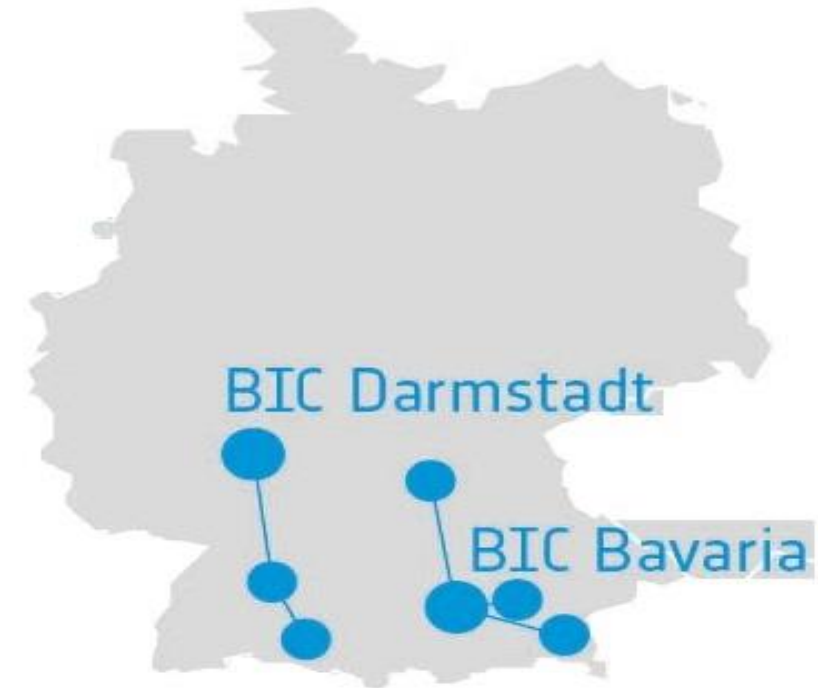
↳ 2017: “Space 4.0”

↳ 2018: „Space Moves“



ESA Business Incubation Centres

- Support entrepreneurs to turn space-connected ideas into commercial start-up companies
- Part of ESA's Technology Transfer Programme
- 18 business incubations centers (BICs) in 15 European countries, supporting 140 start-ups per year
- Two German BICs in Darmstadt and Oberpfaffenhofen → traditional space hubs
- Two new BICs planned in Germany: one in Reutlingen → high-tech hub



**business
incubation
centre**
Darmstadt
managed by cesah



**business
incubation
centre**
Bavaria
managed by AZO

