

Space and aeronautical themes to attract youth for science and technology

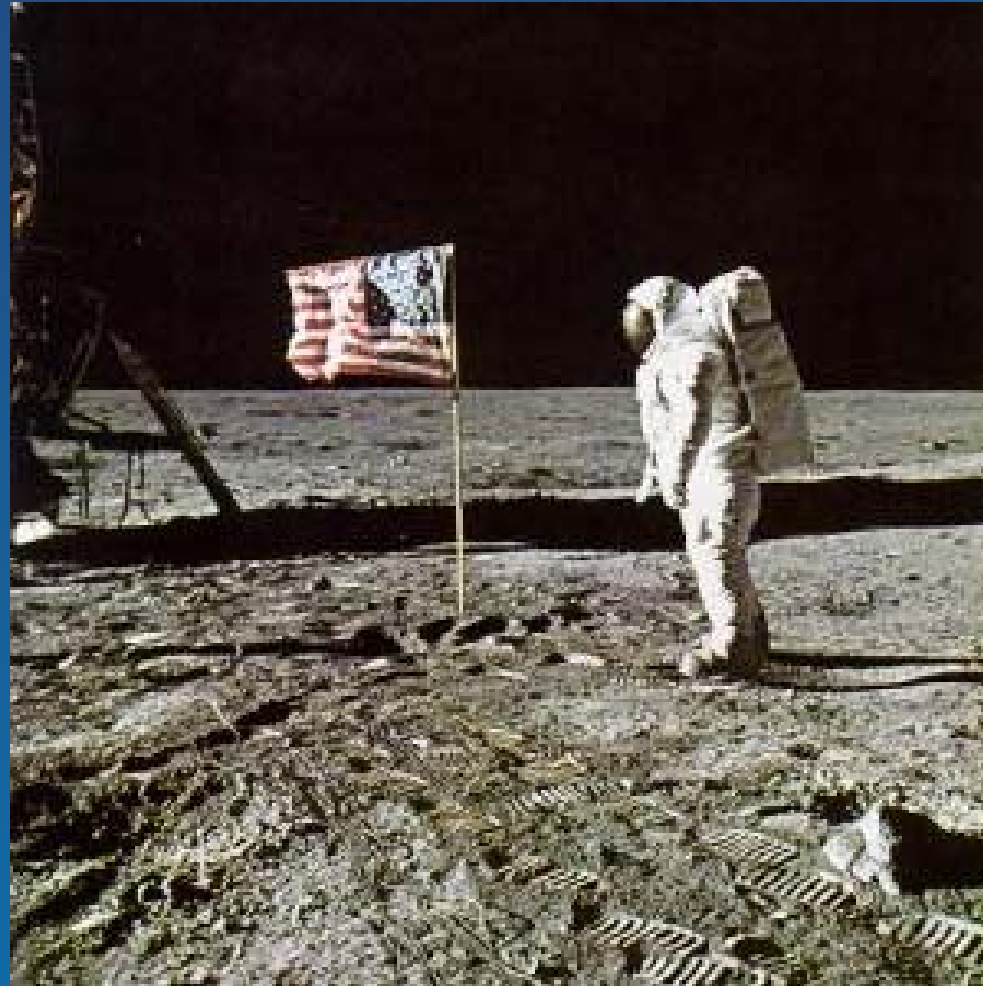


Leuven – May 8, 2009

Patricia
Ceysens

Flemish Minister of Economy,
Entrepreneurship, Science,
Innovation and Foreign Trade

First man on the moon July 21, 1969



Vijfde Vlaamse ruimtevaarddagen

<http://www.vlaamseruimtevaarddagen.be>

- Special guest: Flemish aerospace (via FLAG)
- Special themes
 - Space flight of Frank De Winne
 - Year of Astronomy 2009
- Interactive exhibition space, workshops, talks, sun observations, construction of rockets, ...

Eye catchers:

- Radio 2 live-broadcasting of Avondpost, May 9 17h00
- Contact with American Astronaut Michael Barratt in the ISS on May 10 12h51

200.000 EUR from the action plan science communication



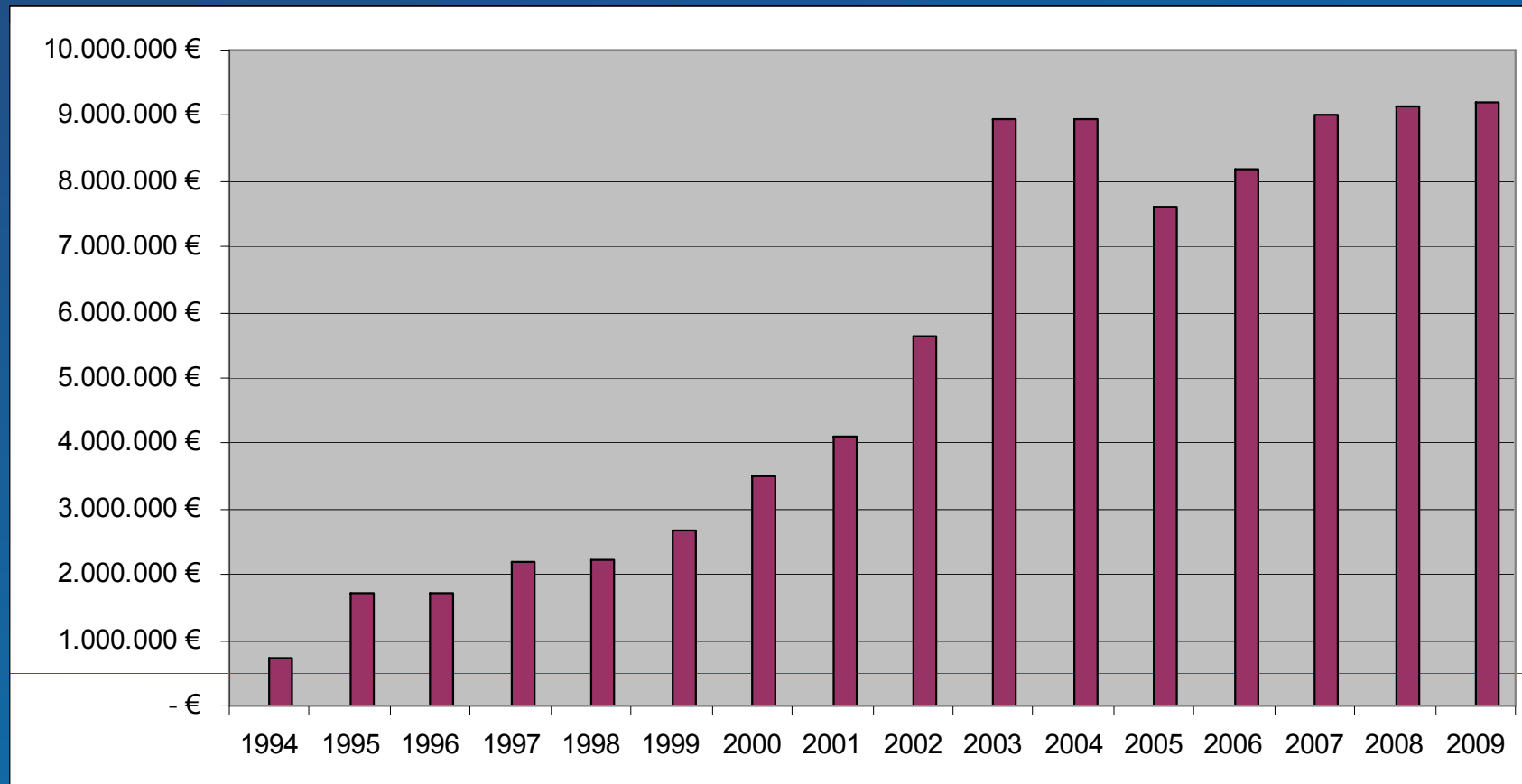
Report of the Forum Ruimtevaart en Onderwijs, February 20, 2008

- Eurobarometer-survey (2005): 25% of the respondents are highly interested in astronomy and space as a scientific and technological development.
- British research project “The education and skills case for space” (2006): “space” is the best theme to raise awareness among young people for science and technology.
- IPSOS-survey (2006): 75% of the respondents (students from secondary school) declare that more information about “the universe, stars and planets” would increase their interest in science courses.
- International ROSE-surveys (2007):
 - Worldwide, 15-year-olds are being asked: “How interested are you in learning the following?” 108 items are listed in a questionnaire. Then students give a score. The items related to space have been given an evaluation score from “good” to “very good”.
 - Interest in the universe, stars, and planets: no difference between boys and girls.
 - Interest in space shuttles, satellites and space travelling: difference between boys and girls.



Flemish budget evolution for science communication

9,2 m EUR



Partners in the awareness policy

- 5 expert's cells within different associations
- F.T.I (Technopolis)
- Vlaams Instituut voor Biotechnologie (VIB)
- Roger Van Overstraeten Society (IMEC)
- Vlaams Instituut voor de Zee (VLIZ)
- Scriptie
- 6 Flemish observatories
- 5 organizers of the Vlaamse Olympiades
- Jeugd, Cultuur en Wetenschap
- Natuur en Wetenschap
- Koninklijke Vlaamse Ingenieursvereniging (KVIV)
- International institutions for physics and chemistry
- VRT
- Link in de Kabel vzw
- TOS21-project (Techniek op School voor de 21ste eeuw)

Six Flemish observatories

Activities with regard to the Year of Astronomy 2009 and the space flight of Frank De Winne during 2009

<http://www.europlanetarium.be/>



<http://www.rug-a-pien.be/>

<http://www.astrolab.be/>

<http://www.beisbroek.be/>

<http://www.mira.be/>

<http://www.urania.be/>



Subsidy from the action plan science communication:

517.200 EUR for 2009

Projects

Science communication

Two calls in 2008 (budgets indicative)

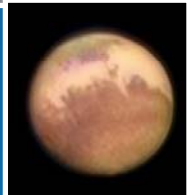
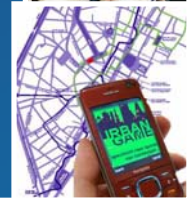
- Call “The Planet Earth”: 700.000 EUR
 - 500.000 EUR geology
 - 200.000 EUR space
- Call “Multimedia Projects”: 540.000 EUR, of which 100.000 EUR for space

Six proposals are selected with space as main theme

Total subsidy: **420.831 EUR**

Six space projects

- Met Frank De Winne naar de ruimte
Flanders Technology International/Technopolis® VRT/Canvas, Euro Space Society
- Urban Game (STAND University of Brussels)
Vrije Universiteit Brussel, Pedagogische begeleidingsdienst Stad Gent, Hogeschool Gent, Erasmushogeschool Brussel, K.U.Leuven, Groep T
- Oma gaat de ruimte in (STAND University of Brussels)
Vrije Universiteit Brussel, Pedagogische begeleidingsdienst Stad Gent, Hogeschool Gent
- Mars ontdekken
UGent-Volkssterrenwacht Armand Pien, Vrije Universiteit Brussel, Perron Perdu VZW
- Base to Mars, come in please
Katholieke Universiteit Leuven, RVO Society, Lego
- Jules Verne achterna
Katholieke Universiteit Leuven, hogescholen binnen de associatie K.U.Leuven



Space Week

- September 14 – 19, 2009
- Locations in Flanders: Ghent, Leuven, Mechelen, Brussels
- Youth debates with astronauts
Coordination: Euro Space Society
- Subsidy Flemish Government: **5.000 EUR**

The winners of Flanders (1)

- ESA call for education ideas “take your classroom into space”
 - Onze-Lieve-Vrouwecollege from Oostende
 - First price “measurement of mass in space with a harmonic vibration of a mass-spring system”

(see workshop University of Antwerp)

- Rozenberg S.O. from Mol
- Second price “studying capilarity and surface tension in zero-gravity”

Constructed for schools by Verhaert Space



The winners of Flanders (2)

- ESA call, drawing for Frank De Winne T-shirt wearing in space: Iman Bouwens, 8 years old, from De Haan
- ESA call, mission name, OasISS: Jan Puylaert from Ghent
- Food in space - Légumaise: Frank Fol





Space and aeronautical innovation in Flanders

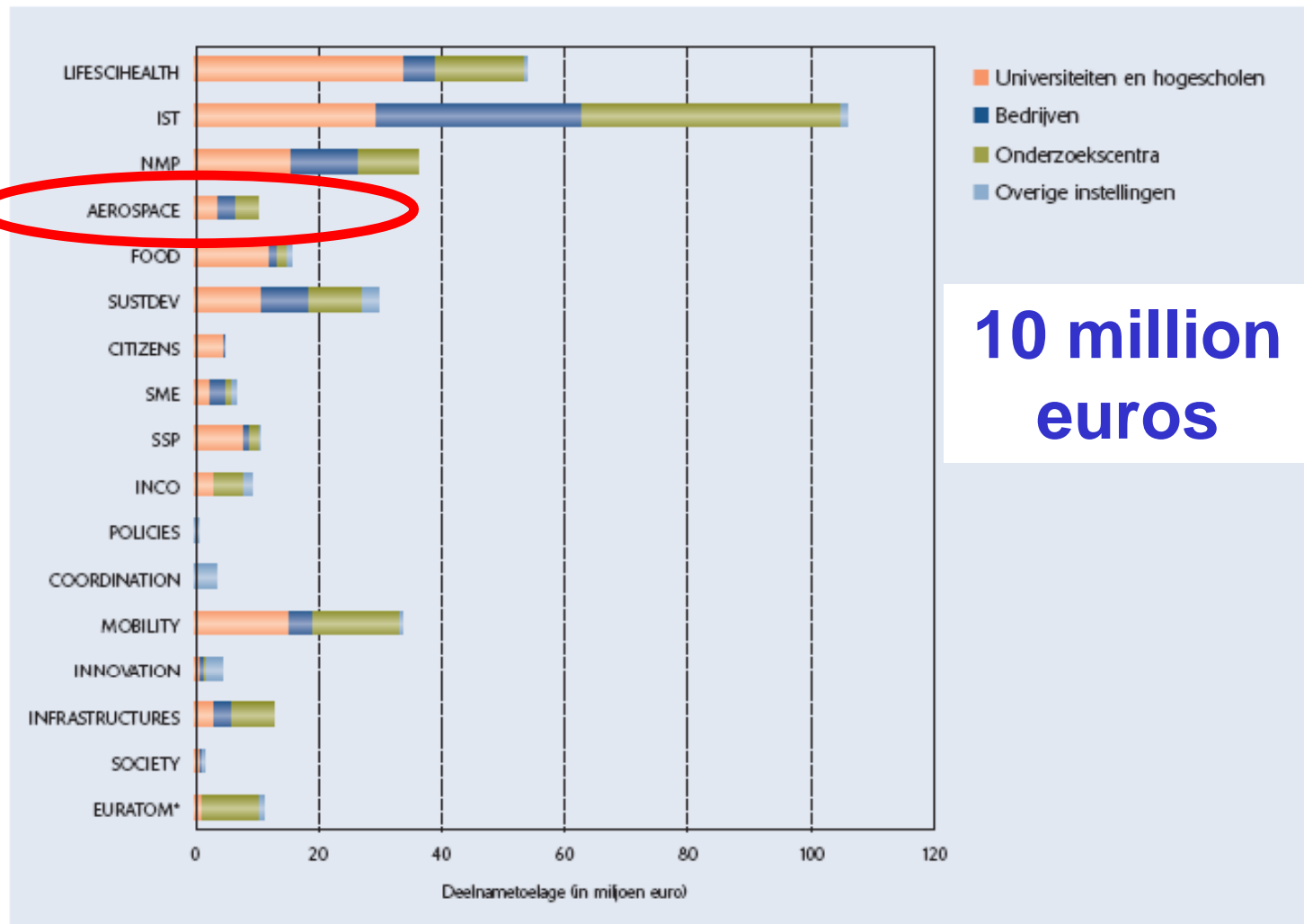


Space and aeronautical research in Flanders

- FWO: 3.418.900 EUR for astronomy, 2005 – 2012, 10 projects
 - Coordinating and participating organisations:
3 universities, 1 sector federation

- IWT: 17.175.336 EUR, 2004 – 2009
 - 13.808.584 EUR aeronautics, 34 projects
 - 3.366.752 EUR space and satellite, 13 projects
 - Coordinating and participating organisations:
 - 6 big enterprises
 - 24 SMEs
 - 2 collective centres
 - VITO
 - 2 colleges of higher education
 - 1 university
 - 3 sector federations

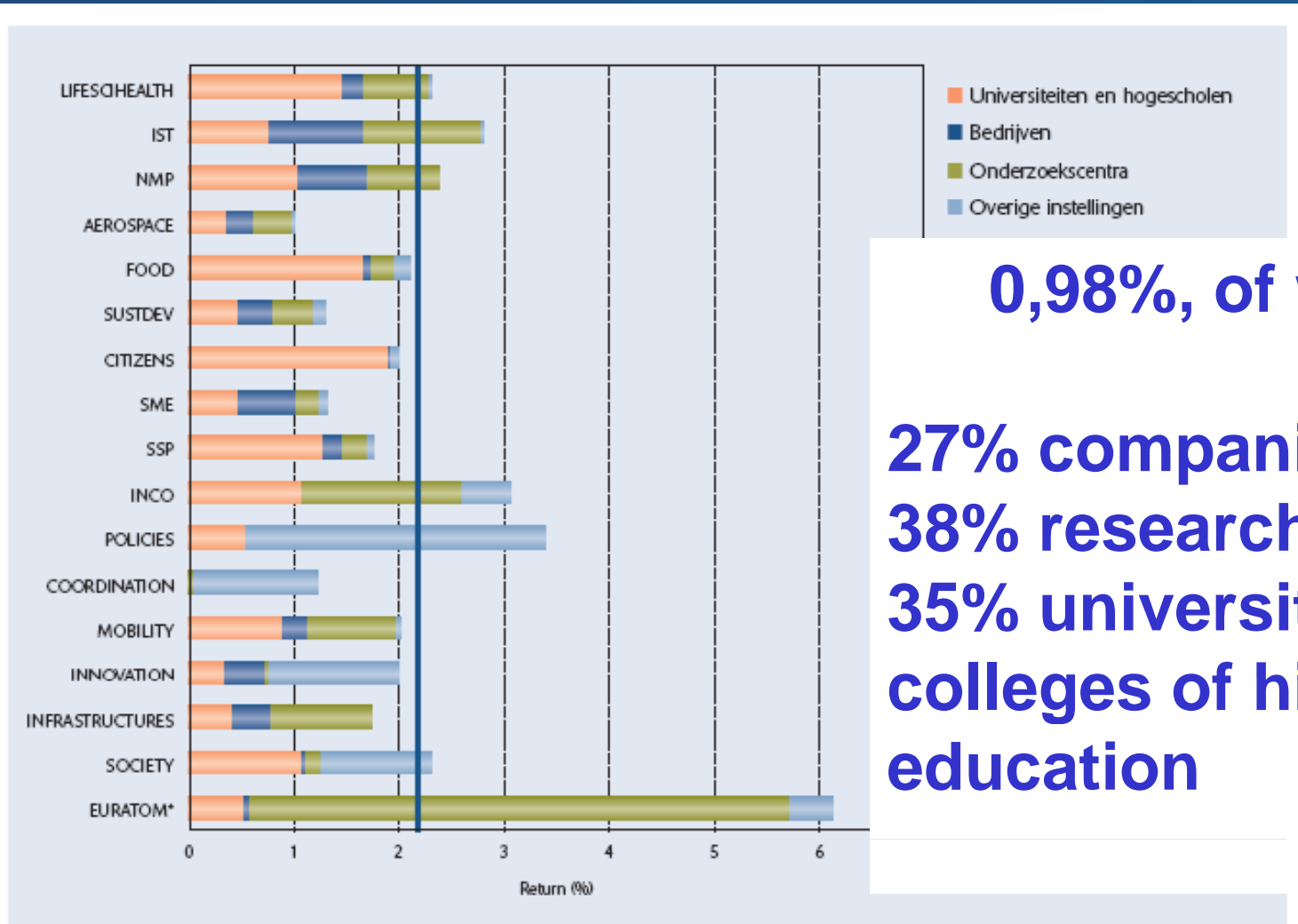
Total budget for Flemish participants in EC FP6 Aerospace



**10 million
euros**

* Excl. "beheerste kernfusie".

Flemish return in EC FP6 Aerospace



0,98%, of which

27% companies
38% research centres
35% universities and colleges of higher education

* Excl. "beheerste kernfusie".

Budget in EC FP7 (2007-2011) for space and aeronautics

Under programme “Cooperation”

- Theme “Space”: 1,43 billion euros
- Theme “Transport”: 4,16 billion
 - Includes aeronautics
 - Includes air transport: 1,6 billion euros via JTI Clean Sky, a public-private partnership (2008-2013)

Space industry in Flanders (1)

- Employees: around 800 FTEs
- Turnover: 200 million euros
- Mainly commercial market



Source: VRI, estimates 2009

Space industry in Flanders (2)

Flemish space industry as niche players in the domains launchers, telecom, navigation, manned space, explorations, earth observation, science and security



34 VRI members

Aeronautical industry in Flanders (1)



➤ Employment

- Manufacturing of aircraft parts & components: 3.000
- Total for all the aeronautical activities, including airport firms: 13.000
- Total indirect jobs around Zaventem, national airport: 60.000
- In Belgium: 2% of BNP, 2% of labour force

➤ Sales Volume

- Manufacturing of aircraft parts & components: : 555 million euros
- Total for all the aeronautical activities, including airport firms: 2 billion euros

➤ Export: >95%

- Outside Europe: Boeing, Northrop Grumman, Bombardier, Embraer, Dassault, Cessna, Russia, upcoming markets India and China

Aeronautical industry in Flanders(2)

Access of Flemish companies and SMEs to Airbus-supply chain increases

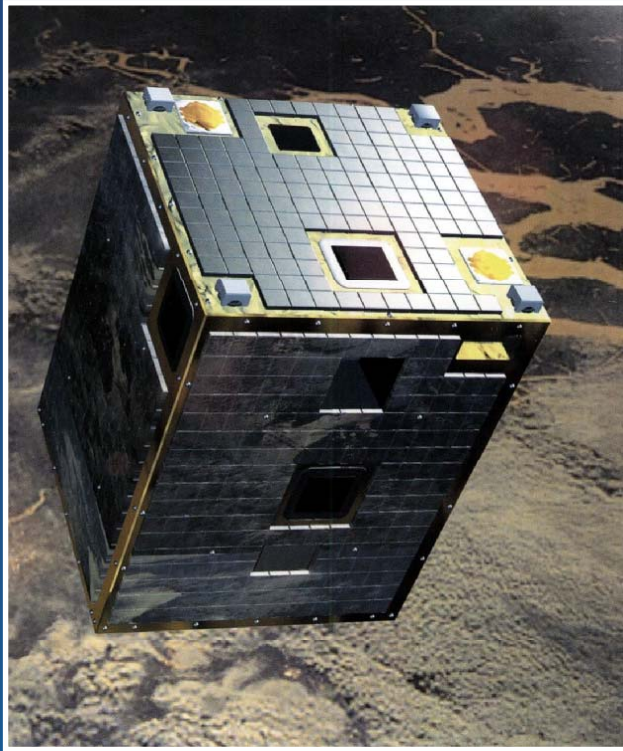
- A320: Eurair, Asco Industries, *Techspace Aero, Sonaca*
- A340: Eurair, Asco Industries, Sabca Limburg, *Sabca, Techspace Aero, Sonaca*
- A380: Eurair, Asco Industries, Sabca Limburg, Barco, Advanced Products, Electronic Apparatus, Xenics, Europlasma, Eurair, Septentrio, LMS, *Sabca, Techspace Aero, Sonaca*
- A350: ?



Italic: Walloon companies

Source: FLAG 2009

Good practices

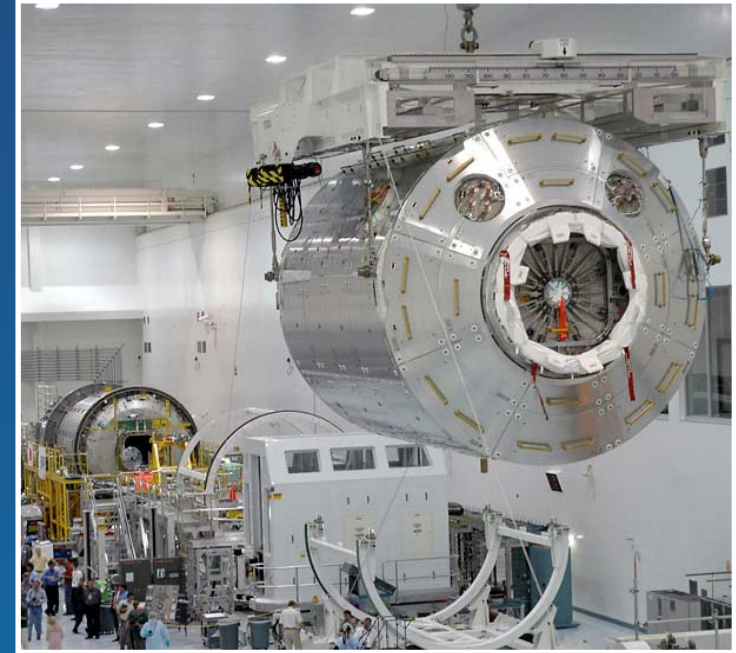
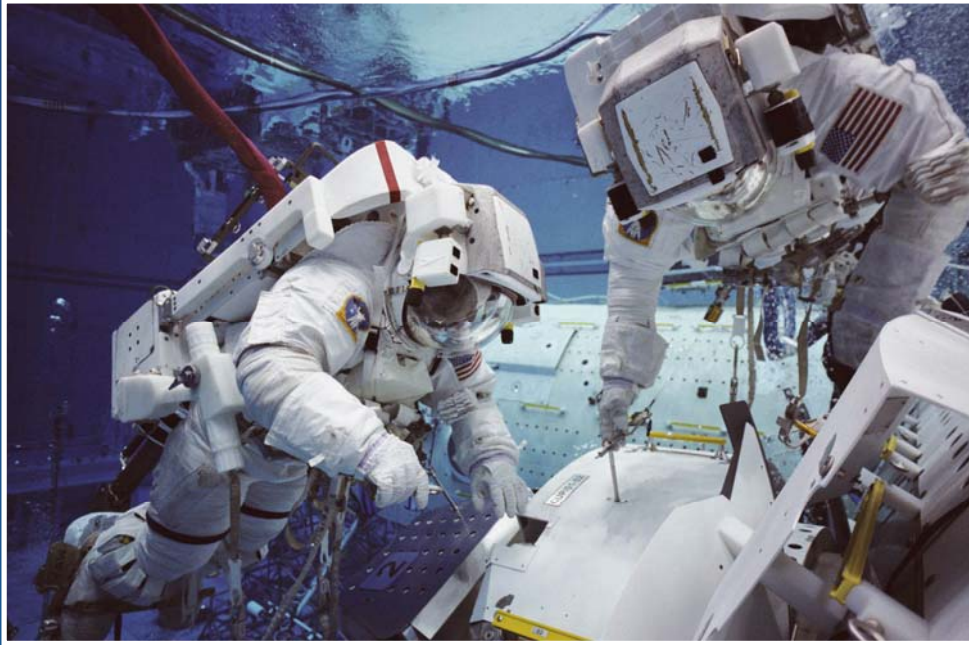


“What do the PROBA-satellite and the experiments executed by Frank De Winne in the ISS have in common?”

“They are both developed by Verhaert Space from Kruibeke.”

VERHAERT SPACE
A QinetiQ Company





“What do the training materials of the ISS astronauts and the software for the Columbus module have in common?”

“Space applications Services from Zaventem are co-developers of the training materials used in the ISS as well as the software for Columbus.”

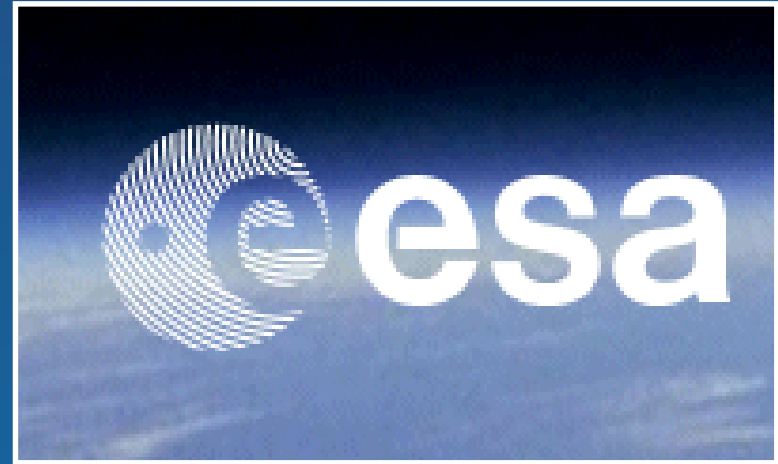




“What do your mobile phone and the robots on the planet Mars have in common?”

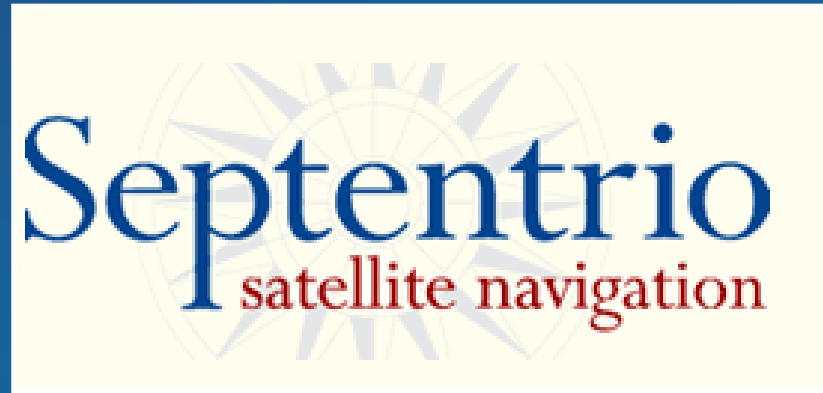
“The basic materials of the battery of your mobile phone and the solar cells of the robots on Mars are made by Umicore.”





“What do the Belgian polar station on Antarctica and the European Space Agency have in common?”

“Both use the GPS-systems developed by the firm Septentrio from Leuven.”





“ What do BMW and Airbus have in common?”

“There technological developments are both tested by LMS, an international company from Leuven.”





**“What do air flight constructor
Airbus and a Flemish truck driver
have in common?”**

“Both uses material from the firm Compositrailer from Lokeren.”





Thanks!

Eager to know more?

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