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AIPAS International Workshop

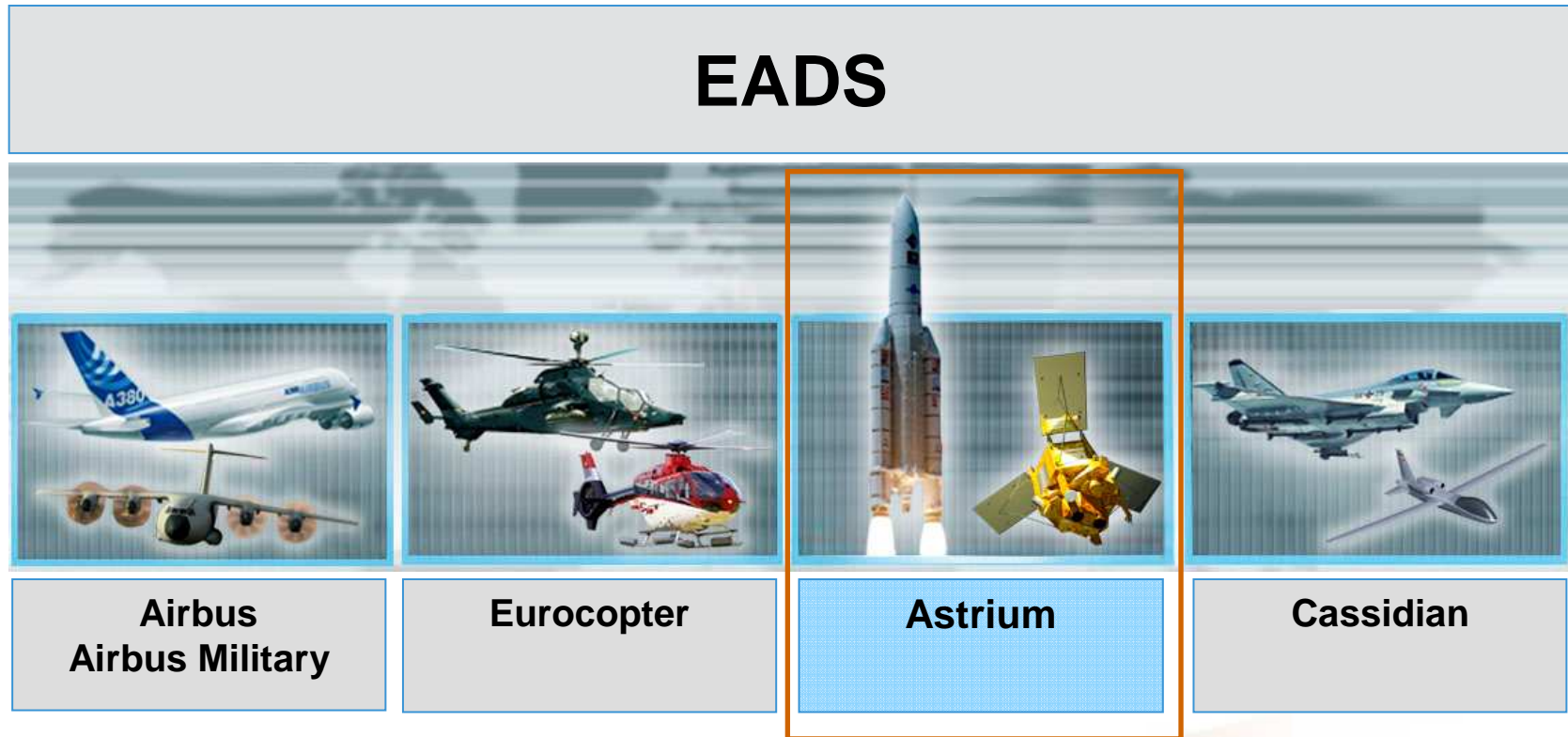
July 4th, 2011

All the space you need



Astrium: part of EADS, a global leader in aerospace and defence

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All the space you need

Date - 2

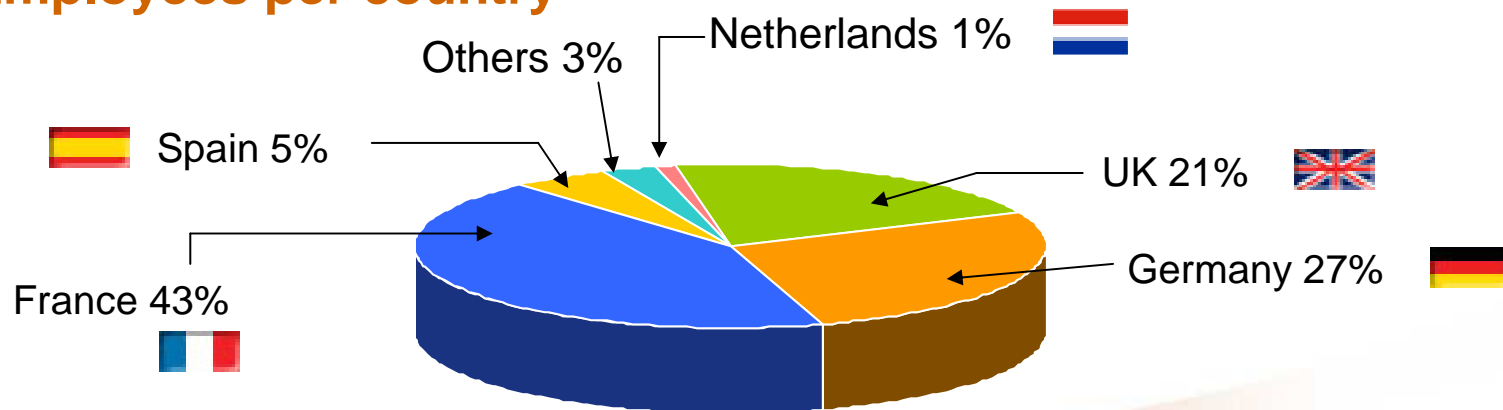


Facts & Figures 2010

Employees: 15,000
Turnover: €5 billion
Order backlog: €15.8 billion
CEO: François Auque



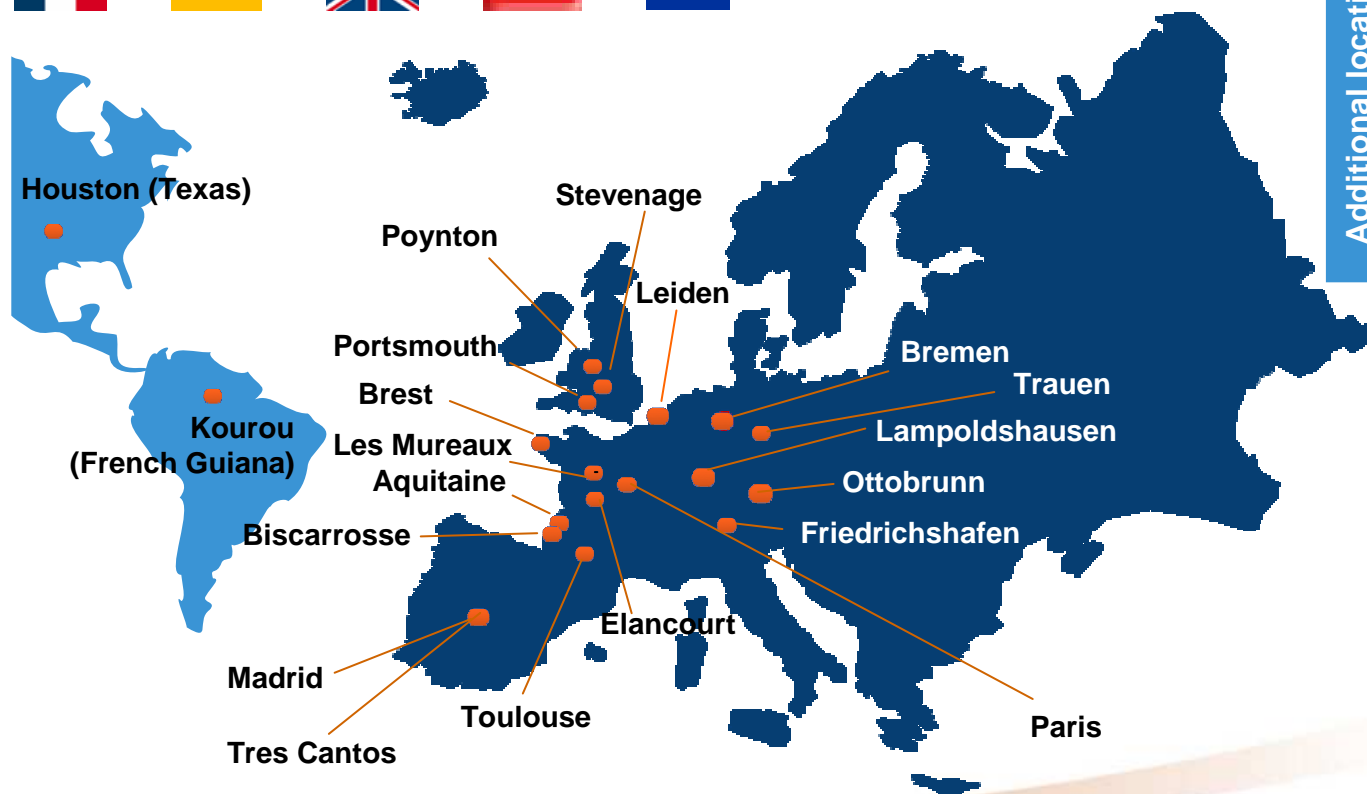
Employees per country



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Astrium: the heritage and expertise of the leading European space nations

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Additional locations	France
	Limeil-Brévannes (Sodern)
	Germany
	Backnang (Tesat)
	Hannover (AXIO-NET)
	Jena (Jena-Optronik)
	Potsdam
	UK
	Colerne (Paradigm)
	Corsham (Paradigm)
Farnborough	
Guildford (SSTL)	
Leicester	
Newcastle	
Oakhanger (Paradigm)	
Spain	
Barcelona	
Saudi Arabia	
Riyadh (GPT)	

All the space you need | **THE COMPANY**

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Astrium's activities are based in three key areas

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Astrium Space Transportation

The European prime contractor for civil and military space transportation and manned space activities



Astrium Satellites

A world leader in the design and manufacture of satellite systems



Astrium Services

At the forefront of satellite services in the secure communications, geo-information and



Outline

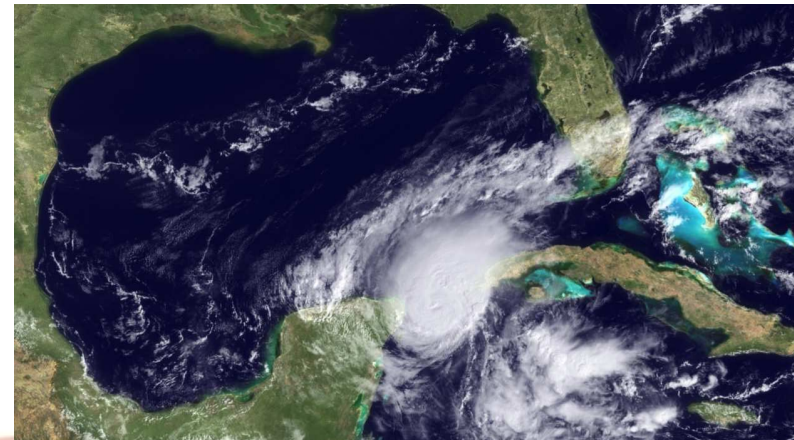
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- Positive impacts of space activities on the society
- How to provide more funds to support the growth of the space sector:
 - Dual systems to serve both civil and military customers.
 - Public-Private funding of space projects.
- The role of Astrium:
 - Compete globally.
 - Develop the European space industry at the continental, national and regional levels.

Impacts of space activities on the society

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- Access to **strategic information and applications** to support human activities both in the military and in the civil field.
- Positive impacts on the **national and local economy**.
- Key enabler of an entire value chain of **commercial telecommunications services**.



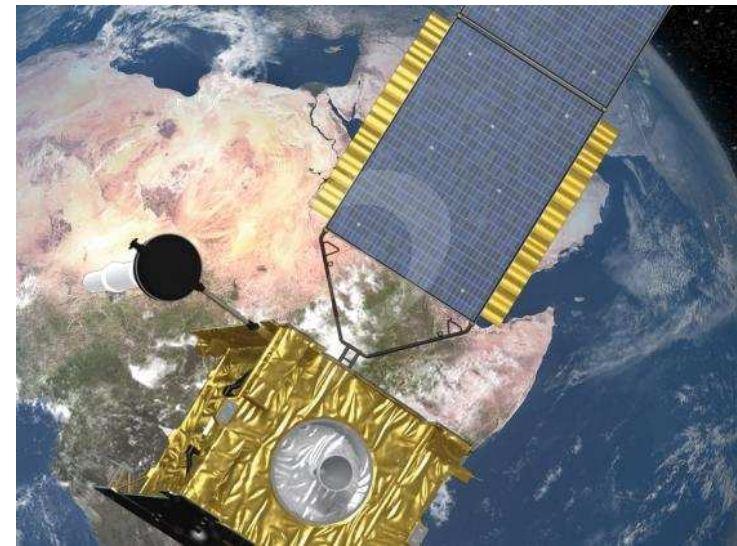
Sustaining the growth of the space industry

- The development of space systems is **not sustainable without the strong governmental willingness** (military or civil) to **secure the access to strategic resources** (launchers, earth observation or telecommunication satellites).
- **Dual space systems**, to optimise the exploitation of the space infrastructure by serving both military and civil users.
- Mixed **private and public investments** in the space programs (PFIs, public anchor customers...) to allow the participation of private investors.

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Astrium – Experience in building a PPP

- The **Astrium Services** team has developed a world class reputation in financing government projects through **Public Private Partnerships** and **Private Finance Initiatives**.
- Astrium Services has implemented a range of solutions
 - ✓ Fully managed service provision
 - ✓ Commercial exploitation rights of nationally owned assets
 - ✓ Set up a company provider of services based on space systems



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Keystone Activities

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Skynet 5

Secure military satellite communications services – all Beyond Line of Sight comms



GPT

Telecom infrastructure provision and maintenance for the Saudi Arabia National Guard



SATCOM Bw Step 2

Dedicated secure satellite communications



TerraSAR-X – TanDEM-X

Exclusive commercial exploitation rights held by Infoterra GmbH



YAHSAT

Complete satellite comms system delivery to UAE



ASTEL S

One-stop-shop satcoms for the French MoD



PASSEREL

Welfare telecommunications services for Economat des Armées for French troops overseas



SPOT 6 & 7

Strengthening high-resolution satellite capability - secured continuity to SPOT 5



TMSCS

Turkish Military Satellite Telecommunications System



ASTIS - MCE

Advanced SATCOM Terrestrial Infrastructure System - Maritime Communications Equipment



US DoD

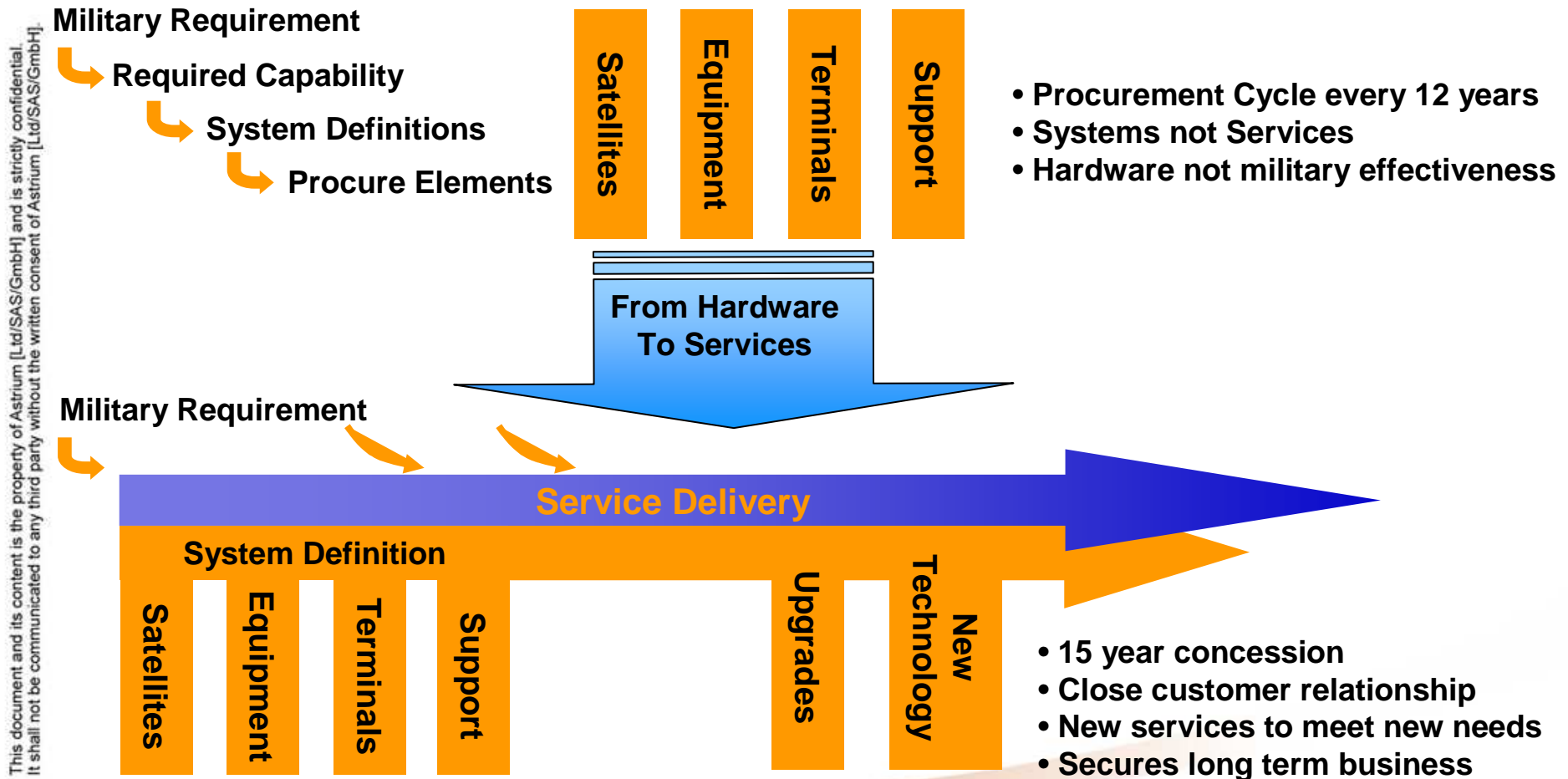
Secure military satcom services

PPP – Advantages for the customer

- **Smooth payment profile:**
 - No payment before start of the service.
 - Stability and control in budgeting.
- **Same capability at a lower cost** due to:
 - Third party revenues.
 - Asset lifecycle optimization.
- **Risk transfer:** the Service Provider takes over risks in construction and operating phases.

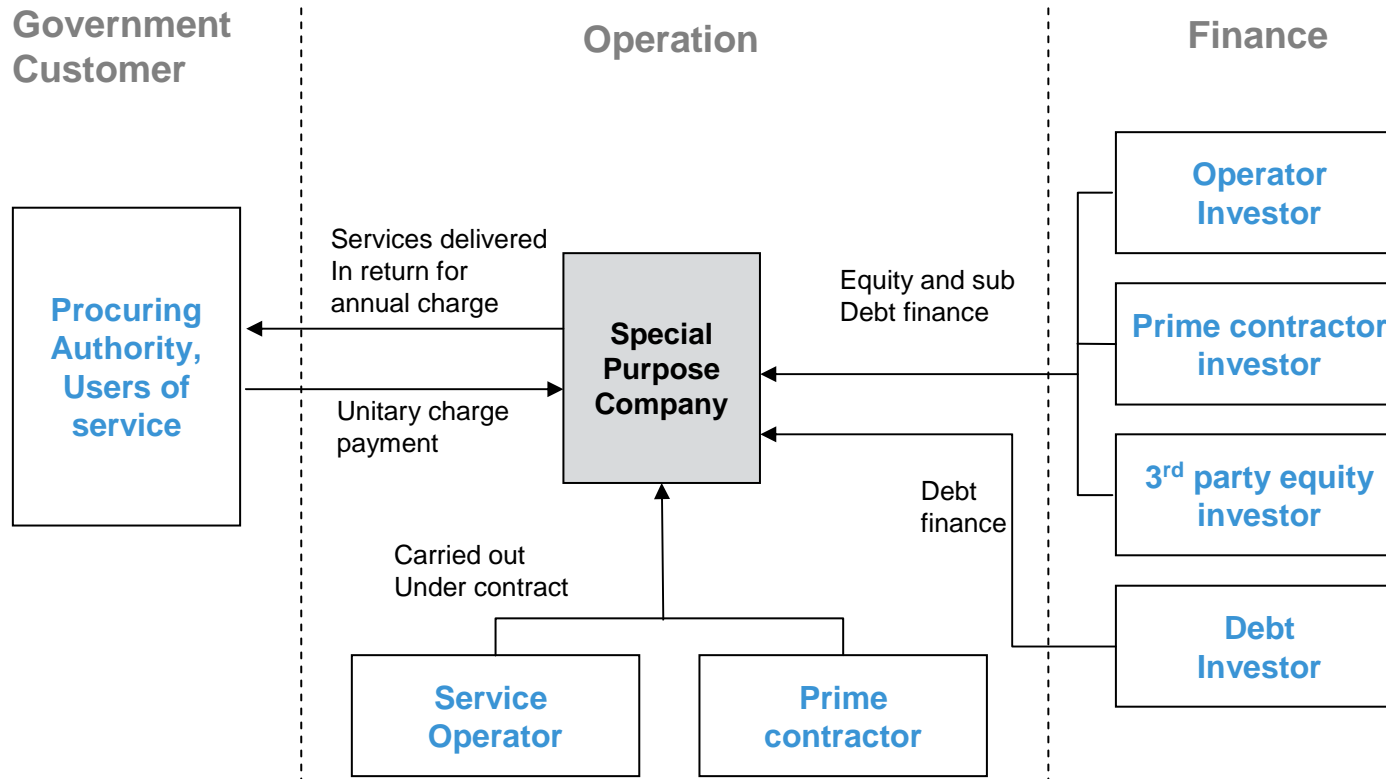
The PPP scheme must be defined and implemented according to
customer needs and specificities

Long term customer relationships



PPP – Example of a PPP structure

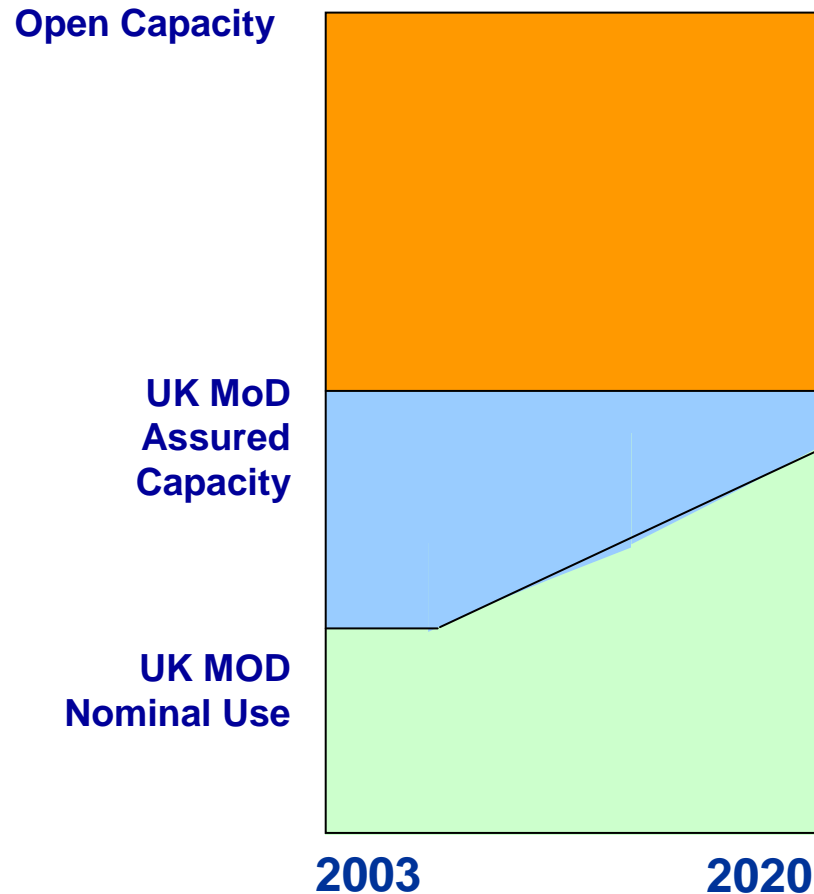
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A Special Purpose Company is used to **transfer risks and financing**

PPP – Skynet Capacity Allocation

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- **Open Capacity**
 - Provides secure allocated capacity for third party users
 - UK MOD have opportunity to buy open capacity if nominal use threshold is exceeded
 - Guaranteed for duration of Service Order
- **UK MOD Assured Capacity**
 - Meets UK MOD projected Nominal and Surge Requirements
 - Paradigm responsible for provision of alternative capacity in case of failure

Success Stories: Skynet-5 - Paradigm

- Paradigm provides end-to-end, tariff based, resilient, secure communications services to the MoD and other third party users.
- The services provided are:
 - ✓ Cost-effective and secure
 - ✓ Guaranteed continuity of service
 - ✓ Regularly benchmarked
- And:
 - ✓ Support allied interoperability
 - ✓ Exploit “civil” and “military” technologies
- Industrial milestones achieved **on time and on**



- 7 years after...
 - **Services delivered** and tested in **hostile operations** (Iraq, Afghanistan,...)
 - Monthly metrics achieved and **value for money regularly benchmarked** by the UK MoD
 - **Services for third parties**: NATO (15 years contract with Fr and IT) other European (NL, P, F...) and non European countries (USA, Canada, Australia,...)

Success Stories: TerraSAR-X and TanDEM-X



- Twin radar satellites constellation financed under DLR/Astrium PPP
- **Infoterra GmbH holds exclusive commercial exploitation rights for TerraSAR-X and TanDEM-X high resolution radar data.**
- Customers from public and civil markets targeted.

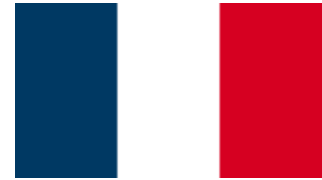


TerraSAR-X was successfully launched in 2007, TanDEM-X in 2010. The two satellites are flying in a closely controlled formation with the objective of **generating a consistent global digital elevation model with an unprecedented accuracy.**

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Spot 6 & 7

Strengthening high resolution satellite capacity



High-resolution, large coverage optical satellites financed and operated by Astrium / Spot Image

- Two 2m-resolution optical satellites, planned for launch in 2012 & 2013
- Phased on the same orbit and offering outstanding agility for applications requiring broad coverage
- Worldwide coverage and reactive tasking (up to 6 programming plans per day)
- Multi-application: cartography, security, agriculture, civil

Assuring the delivery of top quality imagery

- Secured continuity to SPOT 5



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PASSEREL

Welfare services to French troops overseas



Welfare telephone and internet services for more than 10,000 French troops based overseas

- Phone points and internet cafes for overseas bases
- Satellite communications services to keep in touch with friends and family and internet surfing
- WiFi services for telephones and internet services on overseas bases
- Passerel intranet portal for account information and credit top up for cards
- Operated via Astrium Services' Teleport in Toulouse
- 24/7 support in French and English



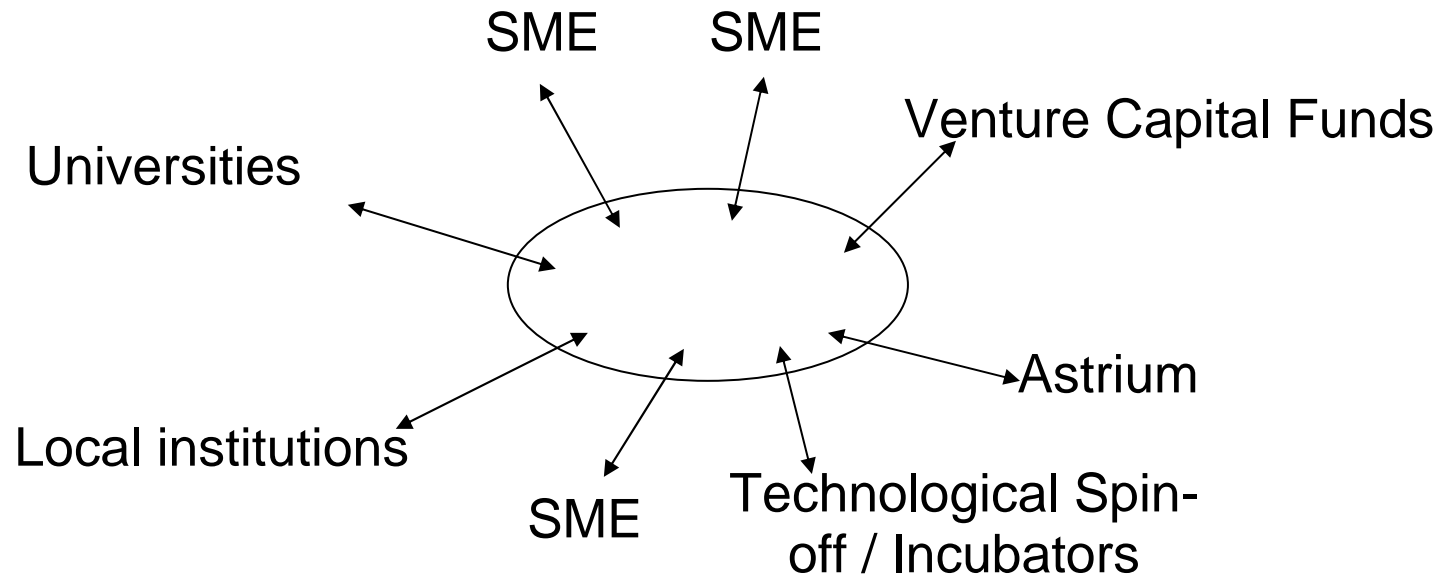
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The role of the European system integrators

- Be able to compete at a global level.
- Lead the development of the European space industry, being the prime contractor of the large and strategic international programs.
- Build a solid network of long term industrial partners and suppliers.
- Sustain the national and regional space industries by being a catalyst for the SMEs to:
 - ✓ Participate to the European programs.
 - ✓ Perform R&D activities in highly specialised technical domains.
 - ✓ Establish a solid and sustainable business in order to be able to engage in long terms programs and partnerships.

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Regional Centres of Excellence



- Pool R&D resources and infrastructures, concentrate and optimise investments.
- Aggregate **multidisciplinary** and **transversal capabilities**.
- Promote a **sustainable local development** and the creation of highly qualified jobs.
- Incentivise **entrepreneurship** and **technological transfer into adjacent markets**.