

# Industrial Policy for Growth and Competitiveness

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# ESA INDUSTRIAL POLICY: OBJECTIVES



## The ESA Industrial Policy is an integral part of the ESA Convention

**Article II (Mission of ESA): “elaborating and implementing the industrial policy appropriate to its programme and by recommending a coherent industrial policy to the Member States”**

**Article VII: the ESA Industrial Policy is designed to follow these four objectives:**

- meet the requirements of the European space programme and the coordinated national space programmes in a cost-effective manner;
- improve the world-wide competitiveness of European industry by maintaining and developing space technology and by encouraging the rationalisation and development of an industrial structure appropriate to market requirements, making use in the first place of the existing industrial potential of all Member States;
- ensure that all Member States participate in an equitable manner, having regard to their financial contribution, in implementing the European space programme and in the associated development of space technology; in particular the Agency shall, for the execution of its programmes, grant preference to the fullest extent possible to industry in all Member States (...);
- exploit the advantages of free competitive bidding in all cases, except where this would be incompatible with other defined objectives of industrial policy.



# Space is developing into a new global economy



- Today the globalisation of space is a reality with 58 countries having invested more than \$10 million in space programmes in 2013, compared to 37 in 2003. **Competition** is growing more intense with consequences which are yet to be fully appreciated.
- A radically different, **commercially-driven approach** for space programme development is also emerging (e.g. SkyBox Imaging - owned by Google - and PlanetLabs with their low-cost Earth-observation satellites, or by Space-X with its Falcon family of launchers), leading the way with products that provide significant value to customers.
- Interest in the space industry has increased and has created a surge of young entrepreneurs, providing the building blocks for future success. Venture capital firms and other investors are demonstrating interest in the potential of space to introduce world-changing technologies. In a future market with more players, more customer-oriented actions and lower barriers to entry, space is no longer the domain of a select few—space is for everyone.

# ESA IP evolves and adapts to this changing environment



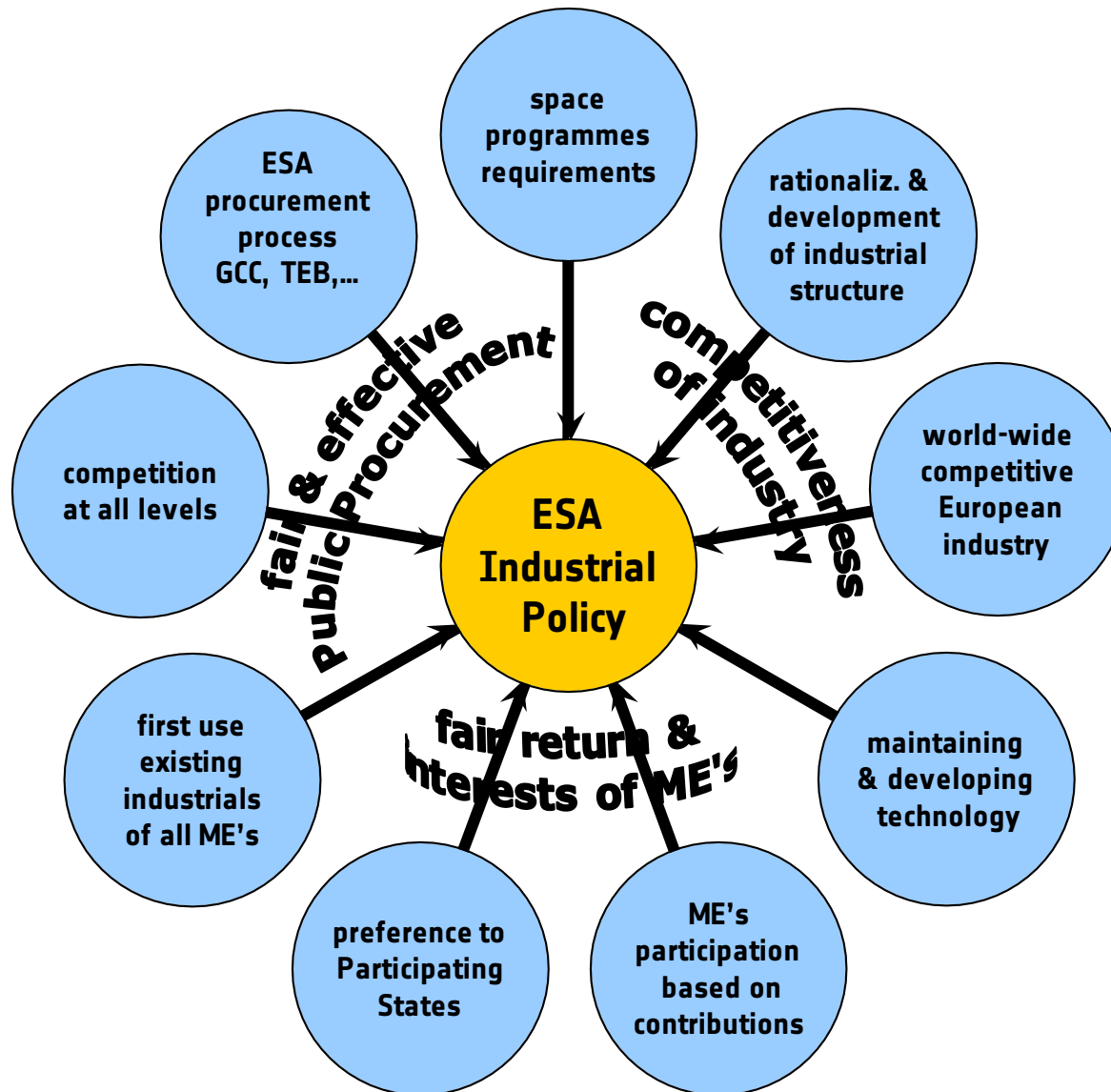
- Although ESA Industrial Policy objectives are in the Convention unchanged since 40 years, they have been applied in an **evolving and flexible manner tailored** to the needs of the programmes, respecting the mandates from Member States, and dynamically adapted to the evolution of industry within a rapidly changing market environment.
- This has been made possible only thanks to the Agency's **close proximity with and intimate knowledge of industry**. The two assets granting the long-term success of this partnership with industry are the ESA technical expertise (including the capability to anticipate the changes, to define trends in institutional and commercial markets, and to optimise the cost-efficiency of products) together with the Agency's right set of procurement tools and adapted partnering schemes.

# Innovative IP strategies: the example of the launch service market



- Europe has for years enjoyed a **very strong position in this market**.
- New players (commercial and institutional) putting **increased pressure on costs**, the technological evolutions in telecommunication satellites, the growing European institutional market, and the economic balance of Ariane 5 led to the need to develop a new-generation launcher able to continue to guarantee Europe's access to space in a competitive manner.
- European telecom operators and the launcher industry were involved from the start to identify needs and optimise the technical architecture and exploit the synergies offered by a **family concept**.
- New governance schemes and optimisation of industrial processes are leading to a target price of the kg-to-orbit some **50% cheaper** than the present generation of European launchers.
- The shift in paradigm in the **governance scheme** includes new responsibilities for industry in the commercial exploitation associated to a new distribution of risks, and also the design authority being given to industry to deliver on-time and on-cost the launcher Europe needs.

# ESA INDUSTRIAL POLICY: MORE THAN JUST "FAIR RETURN"



# The size of the European Space Industry



- In 2013, the **European space manufacturing industry** has been able to generate growth with an overall turnover that amounted to €6.8 billion in 2013 (compared to €6.5 billion in 2012) which corresponds to 10,2% of the global space manufacturing chain. The share of export revenues out of Europe has reached 22%, a level way above those of any non-European competitor.
- In the **European commercial market**, the satellite systems segment reached total revenues of €1.9 billion, of which €1.7 billion were linked to telecommunications (by far the most important segment in sales volume) and €0.22 billion to Earth observation systems. The importance of exports in telecommunications systems is particularly worth noting, representing alone 37% of the European space industry sales on the commercial market and 75% of total exports.
- In Europe, **space industry employment** increased in 2012 for the seventh consecutive year, with growth of 1.5%. The total direct employment of the European Space manufacturers has kept increasing to reach a historical level slightly above 36,000 in 2013.

# THE EUROPEAN SPACE INDUSTRY IS COMPETITIVE



- Europe – i.e. ESA, EU and national space programmes, with ESA representing 60% of European public investments in space - is first in number of missions and mass in orbit per public Euro invested.
- The European budget, even if significantly lower than the US one, has allowed:
  - Europe to lead in scientific missions (e.g. ESA's Rosetta, Planck, Earth Explorers) and public service missions (such as ESA/Eumetsat meteorological programmes), where it is ahead of the US by one generation of infrastructure, and in commercial launch services (Ariane);
  - The development of public technical centres concentrating key competences and infrastructure available for industry, in particular SME's;
  - 8 – The development of a worldwide competitive industry.



# ESA IP supports space programmes' positive impact on growth and employment in Europe



- The combined effects of the economic crisis and the intensification of global market competition require European governments to scrutinise and evaluate public investments with respect to the generated value-for-money. Public-funded space research is increasingly being called upon to sustain **growth, competitiveness, employment and entrepreneurial capacities**.
- Recent economic assessments showed, for instance, that in some ESA Member States the ratio of the additional turnover achieved by space sector companies to the funding they receive from the support programme or ESA contracts (the so-called spin-off factor) was estimated in a **range between 2 and 4.8** in 2012-2014.
- These examples (and the info-graphic in the next slide) show that it is essential that the institutions defining and financing European space programmes introduce the objective of leveraging at maximum Member States investments in space, from the outset in the programme selection and definition phases.

# Socio-economic impact of Ariane 5 and Vega

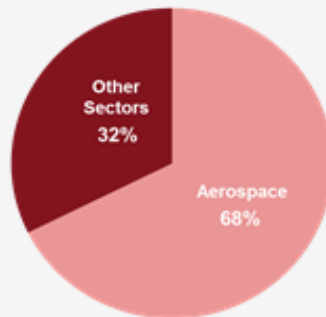


## ESA Launcher programmes' socio-economic impacts have multiple dimensions

### ESA investments in Launchers...

**€13.2 billion invested in Ariane 5 and Vega Programmes (1998-2012)**

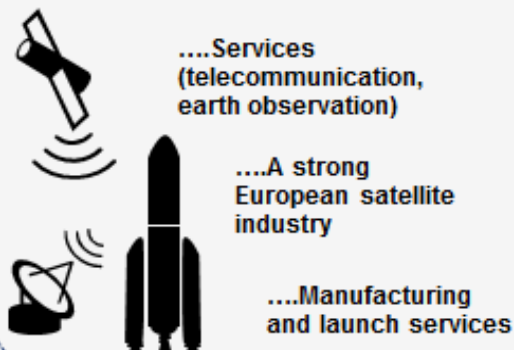
Directly reaching several non-aerospace industrial sectors



Cumulative ESA Spending on Launchers (1988-2012)

An economic stimulus that extends far beyond the space sector alone

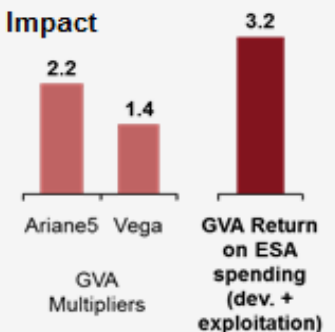
... and act as a significant market enabler in the EU economy



**€1 spent in the launcher programmes directly enabled €4.1 in the wider European economy** (and indirectly brought upon 4 additional euro when considering overall sales, for a total sales multiplier of 8.7)

... produce an immediate GDP Impact

**€1 spent in the programmes produces a total of €3.2 of value added in the economy** (considering also the additional GVA coming from exploitation)



**€6.6 billion in government revenues from ESA spending into Ariane 5**

**Employment multiplier = 2.0**  
For each new job supported in the space sector thanks to the launcher programmes 1 additional job was supported in the wider economy

... with an even wider social and economic reach.



1 – New technology developments exploited in non-space markets, within and outside the EU



2 – New infrastructures and production facilities



3 – Workforce skills improvements and human capital development, both in technical and management fields



4 – Positive Brand impacts



5 – Universities outreach impact, student enrolment, curricula development and scientific production

**>80 Patents**



**>150 publications**

# The IP in support of the downstream sector



- The downstream space sector is characterized by significant growth opportunities accounting for more than **90% of space industry revenue**, and it is essential that European industry reaps the full benefits of the European investments in space.
- R&D is by far the most important driver for company innovations, but companies need to be supported to translate scientific innovation into industrial advantage and operational applications and services.
- The challenge for all public entities is thus to maximise the benefits to the downstream sector, thus ensuring the link and motivation for companies in the downstream sector with a thorough knowledge of vertical markets (e.g. gas & oil, education. etc.), who have direct contact with final users (businesses and/or consumers), to integrate space systems as enablers to expand their business, and to develop new applications.
- ESA is ready, with national agencies and with the European Commission, to contribute to this challenge, as indicated in the Resolution on Evolution of ESA adopted at the last Council at ministerial level in December 2014, which emphasises the need for ESA to leverage on its investments to the benefits of economy and society.



Many thanks for your attention  
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**THE AGENCY FOR THE FUTURE**

European Space Agency