

EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

Author: Mr. Gil DENIS
Airbus Defence and Space, France, gil.denis@airbus.com

Mr. Alain Claverie
Airbus Defence & Space, France, alain.claverie@airbus.com

Mr. Xavier Pasco
Fondation pour la Recherche Stratégique, France, x.pasco@frstrategie.org

Dr. Jean-Pierre Darnis
Istituto Affari Internazionali, Italy, jp.darnis@iai.it

Mr. Benoît De Maupeou d'Ableiges
Airbus Defence & Space, France, benoit.demaupeou@airbus.com

Mrs. Murielle Lafaye
Centre National d'Etudes Spatiales (CNES), France, murielle.lafaye@cnes.fr

Mr. Eric Morel
Airbus Defence and Space (DS), France, eric.morel@airbus.com

TOWARDS DISRUPTIONS IN EARTH OBSERVATION? NEW EARTH OBSERVATION SYSTEMS
AND MARKETS EVOLUTION: POSSIBLE SCENARIOS AND IMPACTS**Abstract**

Earth observation systems for the most critical institutional needs are mainly dedicated assets owned and operated by governments or public organisations, often at national level.

Even in the case of dual use missions, the governmental and commercial operations are in general fully segregated for the very high resolution satellites.

Recent evolutions could affect this paradigm. Firstly, the increased performance of commercial satellites has a high degree of convergence with the defence needs: 25-30 cm resolution is now the benchmark or at least a very short term target for the commercial missions.

The second evolution is the development of hybrid procurement schemes, combining proprietary missions and data buy framework contracts, partly triggered by the budgetary constraints of public customers.

New space is another trend, more disruptive. Started in the Silicon Valley and spreading worldwide, it arouses sometimes excessive expectations. This new model involves not only start-ups but also large actors of the web sphere with a huge investment capacity. Both aim at transforming space as a commodity. Beside the massive constellations for broadband Internet access, some initiatives have been launched for Earth observation markets, targeting very high resolution and high revisit. Last but not least, more and more countries, the newcomers, invest in their own EO capacity, confirming the soft power dimension of space but also opening new opportunities for international or regional cooperation.

After a short presentation of the existing models, the paper proposes a critical review of new or future initiatives, addressing both commercial and institutional markets. New concepts for the very high resolution markets, in Europe and in the US, are the main focus of this analysis.

Two complementary perspectives are summarised: on the one hand, the system architecture and the operational performance and, on the other, the related business models, concepts of operation and ownership schemes.

The last part of the paper has a prospective dimension. It discusses the feasibility of possible scenarios and identifies their impacts on the EO landscape and the main stakeholders involved:

- The governmental and institutional actors, using Earth observation data for their operational missions, with an evolving balance between patrimonial assets and external services.
- The commercial operators of very high resolution satellites, with the new market opportunities and the possible emergence of worldwide champions.
- The satellite manufacturers and their competitiveness.
- The role of nations and space agencies, including the non dependence or national sovereignty and international cooperation dimensions.