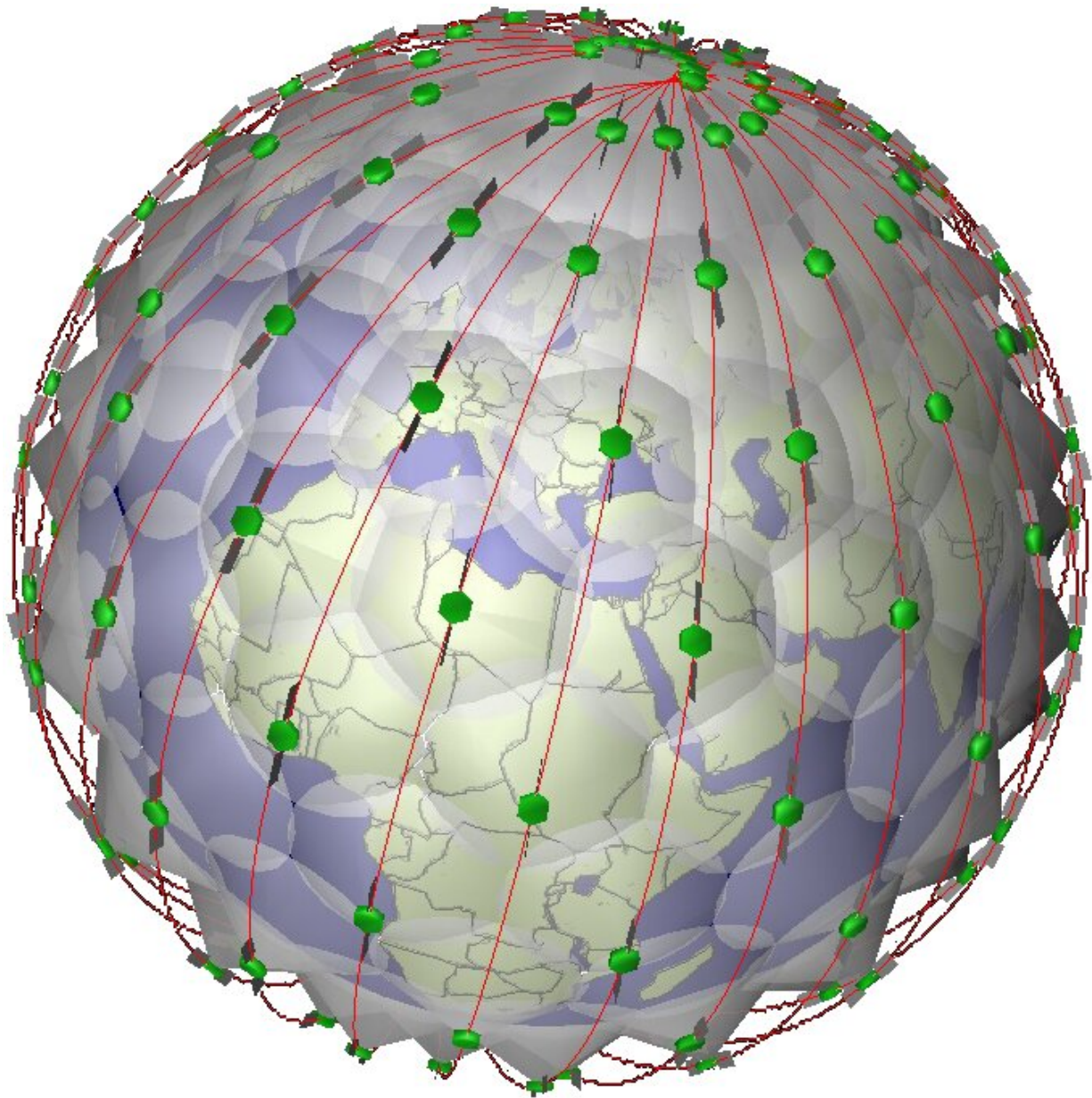


Satcom to foster resilient digital systems

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Credit: Image created with SaVi

Telecommunications are becoming increasingly crucial to our society, economy and security. ESA is supporting the European satellite communication industry's efforts to identify how to meet future worldwide demands for more secure and resilient digital systems.

Earlier this month ESA initiated two [parallel studies](#) to envisage the shape of the future secure telecommunications [market](#) and to clarify which solutions and disruptive technologies will be needed.

The results will inform work undertaken between 2021 and 2023 as part of its program of Advanced Research in Telecommunications Systems. This will enable ESA to help European and Canadian industry to prosper in the highly competitive global market for secure satellite communications.

The telecommunications satellite market is changing. A wave of innovation has created a wide range of new solutions and services, such as very high capacity [geostationary satellites](#), flexible spacecraft for dynamic resources allocation, constellations of nanosatellites providing internet-of-things services and large constellations of broadband satellites operating in low Earth orbit.

These innovations could equip Europe or other regions with a satellite infrastructure able to provide services for safety critical applications.

Air-traffic management, maritime management and civil protection, as well as private markets such as industrial processes monitoring and financial markets all need ubiquitous, secure, autonomous, accessible and resilient communication. Adding a tailor-made, large-scale next-generation satellite communications component to existing global digital infrastructure would make this a reality in Europe and worldwide.

Two consortia—one led by satellite manufacturer Airbus and one led by satellite operator Eutelsat—have won contracts to clarify how to achieve this technically and programmatically in the most effective, cost-efficient and timely way.

They will examine such considerations as: what is the optimal combination of satellite configurations? Should the next generation of satellite infrastructure rely heavily on large high-throughput geostationary satellites and what role could be played by constellations of much smaller satellites in low Earth orbit? Is there a case for a combined use of the two within an integrated, evolutionary system? What are the key underlying technologies to enable the new infrastructure, both for space and ground components? What timescales are involved in their deployment? And what is the right balance of public and private contributions?

The collaborations between ESA and Airbus, on the one hand, and Eutelsat on the other, shall help to quickly identify ways to make the next-generation satellite communication infrastructure available as soon as possible, in line with other projects in other parts of the world.

Elodie Viau, director of telecommunications and integrated applications at ESA, said: "These two parallel studies will detail the visions of the next-generation, end-to-end satellite communication systems. The studies will help define how best to prepare industry in Europe and Canada for future world competitiveness in the secure satellite market. The results may also help support any European initiative to ensure its [satellite communication](#) system remains one of the most advanced in the world. We look forward to working with all the relevant European bodies to realize this vision."

The consortia are due to make their reports by the end of February 2021.

Provided by European Space Agency

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