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SATCOM IN THE CONNECTIVITY MIX FOR THE CAR OF THE FUTURE

Abstract

The digital transformation of the automotive industry is currently disrupting its traditional business and challenging its competitiveness on the global scene. Connectivity is a pre-requisite for innovation in this domain. Moreover, road transport and mobility in general is central to efforts of curbing greenhouse gas emissions – a prominent political priority and admittedly the challenge of our time.

At the same time, the satcom industry is also at an inflection point, moving away from TV broadcast with a few GEO satellites, to data communication using large constellations of LEO satellites to address the new needs of major industry verticals, including the automotive. New actors join the space domain due to lower entry barriers. These include even some car-manufacturers, which look to space to fuel their future growth.

Europe has both the capabilities and the motivation to maintain its industrial lead on the global scene. The automotive and the space industries in Europe have been traditional champions on their respective markets.

The ESA Directorate for Telecommunications and Integrated Applications has been working on bringing the two industrial ecosystems and capabilities together, as an opportunity for both industries and for Europe to channel to the market pioneering connectivity solutions for the future connected car.

Indeed, the connectivity solutions of tomorrow will have to consider all technological capabilities and a correct mix of options: terrestrial and space connectivity together can ensure optimal delivery for future applications. Hybrid solutions are the way forward.

However, the antenna and terminal technologies, the communication for connected cars as well as the constellations able to serve fully serve these needs today are not readily available for scale-up. The first steps in the development of such sustainable mobility solutions are complex, risky and expensive. The rationale for a close collaboration between stakeholders is all the stronger.

This paper discusses the rationale for partnering with automotive OEMs and other stakeholders in the connectivity added-value chain, use cases, examples of state-of-the-art ESA lead projects with industry, and expected socio-economic impact of such developments, including in terms of European industrial sovereignty and global competitiveness.