



Istituto di Elettronica
e di Ingegneria
dell'Informazione e
delle Telecomunicazioni

Thursday seminars

*Taking a Look at the Future:
a cocktail hour event!*

ThalesAlenia
a Thales / Leonardo company Space



Dr. Vincenzo Schena
(Thales Alenia Space)

5G/Beyond 5G/6G Non-Terrestrial-Network (NTN): an overview on the involvement of Thales Alenia Space

The space is undergoing an epochal renewal that is leading it to rapidly change its niche technology paradigm to become something much closer to the common sense of consumer-type products and services as is already the case today for mobile telephony, access to the Internet and so on. The peculiarity of space systems to be able to guarantee global coverage in all parts of the world including at the poles and the need for connectivity of users and systems that is becoming increasingly widespread and pressing, is allowing satellites to become elements or nodes of a network as today done in the Internet by the routers and servers. Alongside the technological development accelerated also by the current geo-political situation, first with COVID now with the Russo-Ukraine war, it is increasingly stimulating and pushing the implementation of space systems in the configuration of satellites in constellation, or interconnected each other and with the terrestrial network. This is setting up a more "three-dimensional" view of the concept of access to the network, more extensive than how we live it today as users, i.e. with the possibility of being connected not only to the radio link closest to our smartphone but, tomorrow, also to the satellite closest to it. To allow this, one of the enabling technologies is represented by the introduction and definition of the 5G protocol in the context of space systems in its Non-Terrestrial-Network meaning, abbreviated to NTN. In this direction, the activity that is being carried out by space stakeholders such as, in fact, Thales Alenia Space (TAS), is to allow a technical, implementation and programmatic vision of what the 5G/beyond 5G and 6G NTN space infrastructure will actually be in the present and in the immediate future, capable of providing services for the vertical (i.e. dedicated) and "consumer" market segments, while ensuring levels of performance, reliability, resilience and security as promised by standards and also how to best distribute them effectively and quickly. This seminar aims to provide a realistic and updated vision of what is being done in this direction, briefly describing some concrete examples of project initiatives within the European Space Agency (ESA) that are laying the foundations for effectively implementing the concept of a 3D space network. Earth. In conclusion, some technologies and initiatives will be briefly illustrated and commented on.

[Registration form](#)

Teams Webinar • 10 November 2022 – 17:30

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