

COMETS

CONVERTERS broadband low power high performance for Telecommunications in Space

MAKING EUROPE A WORLD LEADER IN DIGITAL SATELLITE TECHNOLOGY

Satellites are essential in today's world, and enhancing their performance is paramount for technological development. The project COMETS leads the way, supporting the development in Europe of a technology for the future.

Telecommunications payloads, which will use more and more digital processing to make best use of scarce spectrum and to offer the top operational flexibility to operators will benefit from High Speed, Broadband Analogue to Digital Converters (ADC), in various ways:

- Allowing removal of Radio Frequency (RF) down-conversion stages, resulting in significant mass reduction and cost savings.
- Allowing frequency plan optimization thanks to the flexibility of digital processing.
- Opening opportunities in existing markets such as cellular communications, broadband multimedia, and in new markets demanding higher dynamic range (e.g High Definition TV in moving vehicles).

- Ensuring future-proof compatibility in digital output interconnectivity when digital processing component speeds and capacities increase.

Today such converters are not available for production in Europe, hampering further developments of the European space industry, which currently holds worldwide leadership in the area of commercial satellites.

Therefore the COMETS project responds to the demand for a high performance ADC conversion capacity, as it undertakes the development of such converters in Europe.

In doing so, the project aims at enhancing the performance of ADCs, pushing technological barriers further by turning current state-of-the-art 10-bit converters into 12-bit converters. Such an improvement will enhance the data rate ability of satellite signals, moving Europe from technological dependency into world leadership in this field of critical space technologies.



VÉRONIQUE ROZAN
IS PROJECT COORDINATOR

QUESTIONS & ANSWERS

What do you want to achieve with this project?

We want to offer the space industry the Broadband ADCs needed for digital telecom satellites. Our goal is to make available space qualified 10b/1.5GSps ADCs, and move the State-of-the-art to 12bit, offering higher dynamic performance at low power in addition to radiation tolerance.

Why is this project important for Europe?

The COMETS project is important for the European space industry to remain competitive in broadband satellite telecommunications. Also, the results of the activity will allow Europe to keep control on the supply chain of strategic ADCs, to ensure the production independence of Europe.

How does your work benefit European citizens?

COMETS will benefit European citizens as it will allow for new services in the communications and TV domains. Moreover, project outcomes benefit the competitiveness of the European Space Industry, whereby the project helps keeping jobs in Europe.



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COMETS aims for European strategic non-dependence in future space based telecommunications by supporting the development of Analogue to Digital (ADC) converters that are required by the European space industry to stay competitive.

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LIST OF PARTNERS

- E2V Semiconductors SAS, France
- Infineon Technologies AG, Germany
- Thales Alenia Space France, France
- Astrium Limited, United Kingdom
- Centre National d'Études Spatiales - Cnes, France
- Centre National de la Recherche Scientifique, France

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PROJECT INFORMATION

COntverters broadband low power high performAncE
for Telecommunications in Space (COMETS)

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EU Contribution: € 1.994.943,70

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