

FLEXCOM project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101004233



FLEXible phased array system for sat-COM applications

FLEXCOM project Kick-off Meeting

The FLEXCOM project has officially kicked off on December 1st, 2020

On December 1st, 2020, the partners of the European Project FLEXCOM had successfully held the kick-off meeting. FLEXCOM is the acronym of "FLEXible phased array system for sat-COM applications". The Research and Innovation (RIA) action is funded under the Horizon 2020 program of the European Commission within the call SPACE-29-TEC-2020, Subtopic -d.

FLEXCOM aims at building a new class of phased arrays technology for airborne, spaceborne, and Earth segment satellite communications with an unprecedented level of flexibility and reconfigurability. Precisely, FLEXCOM will deliver a highly integrated antenna tile conceived to be the building block through which several SatCom antenna types can be built. The FLEXCOM tiles are designed to be used in different scenarios and for different applications, responding to the needs of a continuously evolving SatCom market and enforcing a significant reduction of life-cycle costs.

The developed tiles will provide:

- Broadband TX/RX operations at K/Ka-band in a single radiating aperture;
- Possibility to adopt two different beamforming cores, namely Hybrid Analog/Digital beamforming or, for the first time for K-Ka SatCom applications, fully-digital beamforming with direct conversion;
- Electronic steering, multibeam and smart antennas functionalities.

FLEXCOM will develop and integrate into each tile the following beyond the state-of-the-art subsystems:

TX/RX K/Ka band Analog Front Ends (AFE) based on multicore SiGeBiCMOS RFICs, including phase shifters and down conversion stages;

- A Digital Beamforming processor dedicated to SatCom applications;
- Dual-band radiating apertures covering K/Ka SatCom and 5G bands.

The FLEXCOM technology will be demonstrated by building and testing three prototypes relevant to real use cases:

- a prototype for the Internet of Things and Machine to Machine applications;
- a conformal integrated on a UAV platform;
- a feed for a transmit array, intended for High Altitude Platform application.

FLEXCOM will contribute to the development of the European research and technology ecosystem combining in the consortium, a robust industrial partnership covering both the SatCom (THALES and TTI) and the 5G network (NOKIA and SIAE) area as well as key players in the supply chain (TE2V, ANTECNICA, and EVATRONIX). This partnership will include two academic institutions (CNIT-UNICAL, ULM) and a research center (IHP).

Project coordinator:

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Partner N°	Partner name	Acronym	Country
1 (Co)	Consorzio Nazionale Interuniversitario per le Telecomunicazioni	CNIT	Italy
2	Ulm University	UULM	Germany
3	SIAE Microelettronica	SIAE	Italy
4	EVATRONIX SPOLKA AKCYJNA	EVA	Poland
5	IHP GmbH	IHP	Germany
6	THALES SA	THALES	France
7	Nokia Bell Lab	NOKIA	Germany
8	Antecnica	ANT	Italy
9	Teledyne E2V	TE2V	France
10	TTI Norte S.L.	TTI	Spain