

At Gradiant, we design and develop advanced communications, sensing and signal intelligence systems, adapted to the real needs and specifications of industry, defense, security and critical infrastructures



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Advanced Communications for Critical and High-Performance Environments

Advanced Communications

by gradiant 

What we do?

Design and implementation of communications systems and waveforms for

- ✓ Cellular communications: advanced 5G and 6G
- ✓ Satellite communications, broadcast, wired systems (PLC)
- ✓ Proprietary waveforms for specialized operational scenarios.

Sensing and Communications Integration (ISAC)

Addressing the convergence between communications and sensing, where a single system allows information to be transmitted and knowledge of the environment to be obtained simultaneously.

Gradiant is working on this new 6G paradigm in

- ✓ Waveform design for radar/sensing integration and communications.
- ✓ ISAC experimental testbeds for vertical use cases.



Signal Intelligence – SIGINT

Gradiant develops advanced Signal Intelligence solutions to obtain information directly from the radio spectrum, without needing specific technology-compliant receivers, focusing on:

- ✓ Advanced RF signal monitoring and analysis.
- ✓ Automatic signal classification using advanced signal processing and AI.
- ✓ Detection of anomalies, interferences and misuse of the spectrum.

New frequency bands

Gradiant researches and explores the challenges posed using new bands and advanced spectrum management techniques, both in licensed and unlicensed bands, from sub-6GHz to sub-THz.



Our capabilities and know-how

● **Design and development of systems based on standard or ad-hoc specifications**

● **Mathematical simulation of algorithms and systems**

● **Signal processing algorithms and AI for communications**

● **Multi-technology communications stacks**

● **HW/SW flexible platforms for algorithm processing: SDR, SoC, FPGAs, heterogenous architectures.**

● **Radiofrequency, analog electronics and optronics.**

● **Embedded systems & middleware for communications systems**

● **Technology & PoC validation**