



UNIVERSITY: Public University of Navarre (UPNA)

WIT PROGRAMME'S RESEARCH LINE NAME:

High capacity communications in THz – Analysis of beam forming networks type ODIN (Overlapped Distribution Network).

DOCTORAL PROGRAMME: Doctorate in Communications Technology, Bioengineering and Renewable Energies: <https://www.unavarra.es/escuela-doctorado/doctorate-programs/current-plan/engineering-and-architecture/doctorate-in-communications-technology-bioengineering-and-renewable-energies?languageId=1>

COMPLETE DESCRIPTION OF THE LINE

Overlapped Distributed Networks (ODIN) seek to be the optimal and easiest solution for multiple array antenna systems, maintaining a fully symmetrical and passive network. The structure itself is able to control the distribution of power within the network itself, managing to reduce the couplings with the neighboring beams below 17dB, maintaining quite good adaptation levels, below 20/30dB. It is a totally new structure, as it has been recently proposed and is in the process of being protected by means of the corresponding European Patent application.

RESEARCH GROUP NAME:

Antenna Group

COORDINATOR:

- Last and first name; link to the “Portal of scientific production”:



Del Río, Carlos

<https://academicos.unavarra.es/CawDOS/?id=2884ace1018025e3&idio=es&tipo=activ&elmeucv=N>

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MEMBERS OF THE LINE RESEARCH:

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- Biurrun Quel, Carlos
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- Liberal Olleta, Iñigo
- Teniente Vallinas, Jorge

ANOTHER RESEARCH LINES OF THE GROUP: list of them

- Antennas
- Metamaterials and periodic structures
- THz technology and applications
- Quantum technologies
- Sensing
- Thermal emission
- Microfabrication

- Entities involved in research lines and contact person:

✓ Academic entities:

- KTH-Royal Institute of Technology, Sweden (Prof. O. Quevedo, oscarqt@kth.se)



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– Asociación de la Industria Navarra, AIN (Pilar Herrera, pherrera@ain.es)

- Brief group overview

UPNA's Antenna Group has been actively working on different areas of applied electromagnetics for more than 20 years. During these years, it has become a world reference group in metamaterials and nanophotonics, as well as in other areas of applied electromagnetics, such as terahertz technology and corrugated horn antennas.

The group has 6 permanent members, 1 Ramón y Cajal fellow, 4 Post-Docs and 8 PhD students. During the last decade the group averages yearly more than 18 journal publications and attracts funds over 500.000 € per year from public and private sources. Out of these, the group is currently involved in 4 international research projects, among them projects ERC-2020-STG-948504 (ERC Starting Grant), H2020-FETOPEN-964450 and H2020-MSCA-ITN-2019-MENELAOS^{NT}.

Its state-of-the-art facilities for manufacturing and test comprise an ISO-7 clean room for microfabrication and test equipment from RF to the IR, including the THz range.

<http://www.unavarra.es/antennas-group>

- Link of the group to the "Portal of scientific production"

<https://academicos.unavarra.es/CawDOS/?id=90701b928ac24ad4&idio=es&tipo=actGrupo>

REQUIRED QUALIFICATIONS: Engineering, Technology, Computer Science

Use of full-wave electromagnetic simulators. MSc Thesis in a topic in the fields of electromagnetics/RF/antennas.