

Who We are

CNIT is a non-profit consortium, established in 1995 and bringing together 37 public Italian universities to perform research, innovation and education/training activities in the field of Information and Communication Technology (ICT). CNIT also cooperates with seven institutes of CNR, hosting a CNIT research unit. CNIT owns five National Laboratories: "Multimedia Communications", in Naples; "Photonic Networks & Technologies", in Pisa; "Radar and Surveillance Systems", in Pisa; "Smart, Sustainable and Secure Internet Technologies and Infrastructures", in Genoa; "Advanced Optical Fibers for Photonics" in L'Aquila.



More than 1.300 professors and researchers, belonging to the member universities, collaborate within CNIT, together with more than 100 CNIT own employees. CNIT's funding comes from private companies and competitive programs only. CNIT participated in hundreds of research projects, including EU coordinated projects, ERC grants and Italian nation-wide initiatives. In the EU H2020 program, CNIT has obtained 48 projects and coordinated 11 of them. The innovation and technology transfer of research results from universities towards end-users and industry is a primary mission for CNIT. CNIT also facilitates the cooperation between member universities and promotes the collaboration of the same universities with other research institutes and with national and international industries.

CNIT is also an editor, publishing technical reports on selected topics. CNIT is very active in 5G and related initiatives, participating in and coordinating several EU projects on 5G and related applications, being a member of 5GPPP (<https://5g-ppp.eu/>), participating in the 5G government-sponsored trials in Milan and organizing a national conference on such fundamental infrastructure (<https://www.5gitaly.eu/>).



application areas

Research and innovation activities at CNIT follow a multidisciplinary approach, addressing specific systems or application scenarios in an integrated way, in the following areas:

- Agriculture
- Cultural Heritage
- Energy
- Environment
- Health
- Industry 4.0
- Infrastructure protection
- Internet
- Media
- Public Administration and Defence
- Security
- Space
- Tourism
- Transports and Mobility

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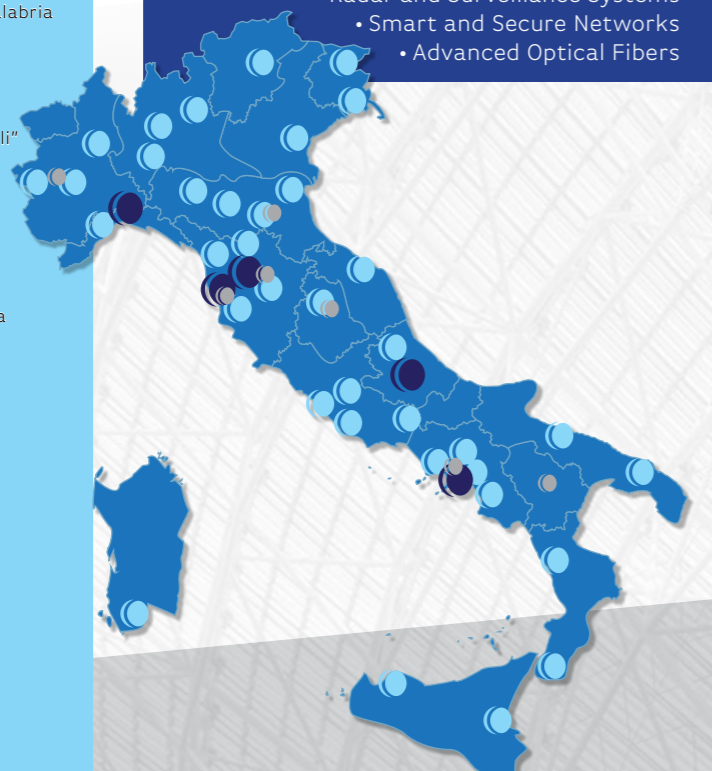
Discover our National Labs & Research Units

Research Units

- Polytechnic University of Bari
- Polytechnic University of Marche
- Polytechnic University of Milano
- Polytechnic University of Torino
- Sant'Anna School of Advanced Studies - Pisa
- University "Mediterranea" of Reggio Calabria
- University of Bologna
- University of Brescia
- University of Cagliari
- University of Calabria
- University of Campania "Luigi Vanvitelli"
- University of Cassino
- University of Catania
- University of Ferrara
- University of Firenze
- University of Genova
- University of L'Aquila
- University of Modena and Reggio Emilia
- University of Napoli "Federico II"
- University of Napoli "Parthenope"
- University of Padova
- University of Palermo
- University of Parma
- University of Pavia
- University of Perugia
- University of Piemonte Orientale
- University of Pisa
- University of Roma "La Sapienza"
- University of Roma "Tor Vergata"
- University of Roma Tre
- University of Salento
- University of Salerno
- University of Siena
- University of Torino
- University of Trento
- University of Trieste
- University of Udine

National Labs

- Multimedia Communications
- Photonic Networks & Technologies
- Radar and Surveillance Systems
- Smart and Secure Networks
- Advanced Optical Fibers



CNR Units

- IEIIT - Torino
- IFAC "Nello Carrara" - Firenze
- IIT/ISTI - Pisa
- IMAA of TITO SCALO - Potenza
- IREA - Napoli
- ISAC - Perugia
- IRPI - Bologna

RaSS | Radar and Surveillance Systems



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Lab RaSS carries out its activity in the field of radar, applied electromagnetism, remote sensing, telecommunication, signal processing and network security. The main research interests are related to wideband radar, SAR/ISAR, InSAR, interferometric imaging 2D/3D and full 3D, passive radar based on digital waveforms, wideband microwave radar (form X to W band), e.m. modelling, RCS numerical computation, target feature extraction by exploiting inverse scattering properties of the target, propagation modelling, antenna design, tracking with multiple radars. RaSS Lab staff consists of University consultants, CNIT personnel, Post-Docs, PhD students and short-term contract researchers and is currently composed of 40 people.

S2N | Smart and Secure Networks



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S2N activities cover the areas of Future Internet and its applications, with particular emphasis on cybersecurity, 5G and beyond, network sustainability, cloud-native virtualization and edge computing. The Lab staff has been involved in a large number of national and EU-funded research projects, also with coordination roles. S2N operates a highly flexible and large networking infrastructural testbed, able to control computing resources at bare-metal level and to autonomously instantiate virtual infrastructure managers or software components in a 4G/5G environment.

LNCM | Multimedia Communications



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LNCM is involved in R&D for wired/wireless networks, digital media, e-health platforms, in-fomobility and intelligent transport systems, immersive e-learning test beds and RFID technologies.

The Lab has highly valuable and sophisticated equipment for measurements on telecommunication systems and networks and a great competence in realizing complex test beds for in situ and remote performance evaluation of technologies, protocols and prototypes.

Fibers | Advanced Optical Fibers for Photonics



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The FIBERS lab provides a testbed for experiments in the area of optical communications. It relies on a unique fiber-optic infrastructure developed in the city of L'Aquila, which includes two optical rings consisting of about 100 km of multi-core fibers and 200 km of multi-mode fibers for Space-Division Multiplexed (SDM) transmission. It is the world-first installation of fibers for SDM transmission, and its main mission is to support the experimentation of a wide range of schemes and technologies for fiber-optic transmission, including secure transmission based on classic and quantum cryptography.

PNTLab | Photonic Networks & Technologies



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The PNTLab carries out basic and applied research activities on photonic networks and integrated photonics. Photonics and integrated photonics are key enabling technologies in several fields: wireless communications, sensing, security and biology, allowing applications that will permeate our everyday lives. The PNTLab can count on a fully equipped laboratory. The Integrated Photonics Design Center provides from basic design of passive and active photonic building blocks to creation of design libraries compliant with microelectronics IC design environments.

JLAB PORTS | Joint Labs CNIT - North Tyrrhenian Port Network Authority



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The lab operates on a standard cloud architecture for ICT services offered to the port communities. In this framework, it cooperates with the authority to gather application-layer requirements from final users; it integrates added-value services which are then offered to final users; it extends the scope of the services provided by the Port Authority to the landside (i.e. city of Livorno city and related corridors) and through the sea. The lab experiments cutting-edge technologies, such as 5G, Connected Vessel, Cooperative ITS, IoT, Blockchain in the remarkable testbed of the Port of Livorno, also exploiting many projects funded at national and EU levels.