



# Ivan Iudice

## Curriculum Vitae

### Personal information

First name Ivan  
Last name Iudice  
Place and date of birth Livorno, Italy, November 23, 1986  
Nationality Italian

### Languages

Italian Mother tongue  
English Fluent

### Education

- 2014–2017 **Ph.D. degree in Information Technology and Electrical Engineering**  
*Università di Napoli Federico II, Naples, Italy.*  
Thesis: Equalization of CPM signals over doubly-selective aeronautical channels.  
Supervisor: Prof. Giacinto Gelli.
- 2008–2010 **Master's degree in Telecommunications Engineering**  
*Università di Napoli Federico II, Naples, Italy.*  
Thesis: Un nuovo approccio alla stima della direzione d'arrivo.  
Supervisors: Prof. Amedeo Capozzoli, Dr. Claudio Curcio, Dr. Giovanni Iadarola,  
Prof. Angelo Liseno.
- 2005–2008 **Bachelor's degree in Telecommunications Engineering**  
*Università di Napoli Federico II, Naples, Italy.*  
Thesis: La trasformata di Radon near-field per la tomografia delle aree vegetate.  
Supervisors: Prof. Amedeo Capozzoli, Dr. Claudio Curcio, Prof. Angelo Liseno.

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## Experience

since 2012 **Research Engineer**

*CIRA – Italian Aerospace Research Centre, Capua (Caserta), Italy.*

Research and developments of algorithms and technologies for prototyping modern communication systems to be used in the aerospace environment.

Detailed achievements:

- within the TECVOL-II internal project, communication algorithms have been developed for the implementation of the baseband functional blocks composing a re-configurable data-link, according to the software-defined radio paradigm;
- within the TELEMACO national project, funded by the Italian Ministry of Education, University and Research (MIUR), methods for electronic beam steering of two-dimensional arrays with non-uniformly shaped elements were developed;
- within the RAID European project, co-funded by SESAR Joint Undertaking, electromagnetic computer simulations were carried out to tackle the antenna placement problem on the CIRA flying laboratory FLARE, moreover support was provided during all of the flight tests;
- within the USV3 internal project, feasibility studies on the mission were carried out, electromagnetic problems due to the plasma phase during space vehicle re-entry were considered, and methods for the on-board assessment of the antenna patterns were analyzed.

2019–2020 **System Engineer**

*PNRA – National Program of Antarctic Researches.*

Within the project 2015/AZ1.02, funded by PNRA, design, integration and installation of remote stations for monitoring of nanoclimatic parameters in Antarctic cryptoendolithic communities have been provided; the remote stations have been installed throughout the Victoria Valley during the XXXV Italian Antarctic summer campaign resorting Mario Zucchelli station logistics.

2011–2012 **System Engineer**

*CIRA – Italian Aerospace Research Centre, Capua (Caserta), Italy.*

Within the TECVOL-II project, analysis of the main critical issues relating to beyond line-of-sight (BLOS) communications of unmanned aerial vehicles (UAVs) were carried out and Systems and methods involving the software defined-radio paradigm were identified.

2011 **System Engineer at Selex Galileo**

*Info Solution S.p.A., Vimodrone (Milano), Italy.*

Design and test of range estimation algorithms for infra-red search and track (IRST) on-board systems.

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## Awards

2020 **Best Idea in Response to COVID-19 Outbreak in Italy**

*IEEE CommSoc/VTS Italian Chapter.*

Project: Safe and reliable public transportation systems (SALUTARY).

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## Research interests

- Physical layer cybersecurity.
- Signal and array processing for mobile communications.

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## Services to scientific societies

- since 2017 **Reviewer for several international journals.**
- IEEE: Transactions on Communications, Access, Signal Processing Letters, Communications Letters.
  - Hindawi: Wireless Communications and Mobile Computing.
  - MDPI: Mathematics, Applied Sciences, Signals, Energies, Sensors, Electronics.
- since 2018 **TPC member for several special sessions in international conferences.**
- **Cybersecurity on the fly**, IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2018), Bologna, Italy, September 9-12, 2018.
  - **Overcoming interference in next-generation wireless networks**, 26th European Signal Processing Conference (EUSIPCO 2018), Rome, Italy, September 3-7, 2018.

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## Major scientific collaborations

- since 2014 **SPRINT research group**  
*Signal PROcessing and INnovative Transmissions.*  
<http://sprint.dieti.unina.it>
- **Prof. Giacinto Gelli**, Università di Napoli Federico II, Naples, Italy.
  - **Prof. Francesco Verde**, Università di Napoli Federico II, Naples, Italy.
  - **Prof. Donatella Darsena**, Università di Napoli Parthenope, Naples, Italy.

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## Publications

### Refereed journal papers

- [J1] D. Darsena, G. Gelli, I. Iudice, and F. Verde, Separable MSE-based design of two-way multiple-relay cooperative MIMO 5G networks, *MDPI Sensors*, 20(21):6284, 2020.
- [J2] D. Darsena, G. Gelli, I. Iudice, and F. Verde, Design and performance analysis of channel estimators under pilot spoofing attacks in multiple-antenna systems, *IEEE Transactions on Information Forensics and Security*, 15:3255–3269, 2020.
- [J3] D. Darsena, G. Gelli, I. Iudice, and F. Verde, Equalization techniques of control and non-payload communication links for unmanned aerial vehicles, *IEEE Access*, 6:4485–4496, 2018.
- [J4] D. Darsena, G. Gelli, I. Iudice, and F. Verde, Second-order statistics of one-sided CPM signals, *IEEE Signal Processing Letters*, 24(10):1512–1516, Oct. 2017.

### Refereed conference papers

- [C1] D. Darsena, G. Gelli, F. Verde, and I. Iudice, LTV equalization of CPM signals over doubly-selective aeronautical channels, In *2016 IEEE Metrology for Aerospace (MetroAeroSpace)*, pages 75–80, June 2016.
- [C2] D. Darsena, G. Gelli, I. Iudice, and F. Verde, Widely-linear transceiver design for amplify-and-forward MIMO relaying, In *2016 IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM)*, pages 1–5, July 2016.
- [C3] D. Darsena, G. Gelli, F. Verde, and I. Iudice, Blind LTV shortening of doubly selective OFDM channels for UAS applications, In *2015 IEEE Metrology for Aerospace (MetroAeroSpace)*, pages 557–561, June 2015.
- [C4] A. Manco, I. Iudice, and V. Castrillo, Design of basic receiving functions for an SDR based QPSK base band demodulator for a reconfigurable data-link, In *2013 Wireless Innovation European Conference on Wireless Communications Technologies and Software Defined Radio (SDR-WInnComm-Europe)*, pages 90–95, June 2013.
- [C5] R. V. Montaquila, I. Iudice, and V. U. Castrillo, Design of a radio channel simulator for aeronautical communications, In *International Telemetry Conference*, Oct. 2012.
- [C6] A. Capozzoli, C. Curcio, I. Iudice, A. Liseno, and S. Savarese, Fast imaging of vegetation on GPUs based on non-uniform FFTs, In *2011 International Conference on Electromagnetics in Advanced Applications*, pages 1205–1208, Sept. 2011.

Bellona, December 14, 2020.

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