
UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II
**DOTTORATO DI RICERCA / PHD PROGRAM IN
INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING**

Module Title: Advanced Topics in Radar Signal Processing

Lecturer:

Prof. Alfonso Farina

*Technical Consultant, previously with Selex ES (retired)
Rome, Italy*



CV: *Alfonso Farina received the Doctor degree in electronic engineering from the University of Rome, Rome, Italy, in 1973. In 1974, he joined Selenia, then Selex ES, where he became the Director of the Analysis of Integrated Systems Unit and subsequently the Director of Engineering of the Large Business Systems Division. In 2012, he was a Senior VP and Chief Technology Officer of the company, reporting directly to the President. From 2013 to 2014, he was senior advisor to the CTO. He retired in October 2014. From 1979 to 1985, he was also a Professor of Radar Techniques with the University of Naples. He is the author of more than 800 peer-reviewed technical publications, books, and monographs published worldwide, some of them also translated into Russian and Chinese. He is a Visiting Professor with the University College London, U.K., and a Visiting Professor with Cranfield University, U.K.. Dr. Farina was a recipient of the Finmeccanica Award for Innovation Technology (2004), IEEE Dennis J. Picard Medal for Radar Technologies and Applications (2010), Oscar Masi Award (2012), IET Achievement Medal (2014), IEEE SPS Industrial Leader Award (2017). His main best paper awards include the B. Carlton of IEEE Transactions on Aerospace and Electronic Systems (2001, 2003, and 2013), the IET Proceedings on Radar Sonar and Navigation (2009-2010), and the International Conference on Fusion (2005). He is also a Fellow of the IET, Fellow of the Royal Academy of Engineering, U.K. (2005), Fellow of the EURASIP, and a member of the European Academy of Science. From 2019 to 2021 he is a member of the IEEE AESS Board of Governors.*

Overview

The course provides an overview on some advanced topics in radar signal processing. Firstly the ubiquitous role of radar from underground to outer space applications is highlighted. Then modern phased array architectures for the next generation radar systems are presented with emphasis on technological issues. The important function of target tracking is thoroughly explained with reference to both single-sensor and multi-sensor contexts. The second part of the course addresses state of the art topics concerning cognitive radar and adaptivity. Finally, an overview on the passive green radar concept is given together with sustainability aspects.

Credits: 2

Schedule

Lecture	Date	Time	Topics	Lecturer
1	18/05/2021	14.30-16:30	Radar from Underground to Outer Space Phased Array Architectures	A. Farina
2	19/05/2021	14:30-16:30	Target Tracking Multi-sensor Target Tracking	A. Farina
3	25/05/2021	14.30-16:30	Adaptivity in Radar Cognitive Radar	A. Farina
4	26/05/2021	14:30-16:30	Green Radar Radar and Sustainability	A. Farina
	TBD	TBD	Assessment test	

Online lectures are provided via Microsoft Teams
Team Code: **c577v67**

For information: Dr. Vincenzo Carotenuto (DIETI, UniNA) – vincenzo.carotenuto@unina.it