GIANLUCA PALERMO, PhD

CURRICULUM VITAE

WORK EXPERIENCE

La Sapienza, Università di Roma - Dipartimento Ingegneria Meccanica e Aerospaziale - Rome, Italy

Academic Tutor

• Tutor for Concurrent Design Lab activities in favour of post-graduate grant students

La Sapienza, Università di Roma - Dipartimento Ingegneria Meccanica e Aerospaziale - Rome, Italy

Lecturer

• Class Lectures on the following topics:
  - System Engineering
  - SysML
  - Concurrent Design Principles
  - Concurrent Design Software and Procedures
  - Tradespace Exploration and Pareto Analysis Methods
  - Preliminary Architectural Design of LEO Satellite Constellations
  - Optimization of production models for spacecraft serial manufacture

La Sapienza, Università di Roma - Dipartimento Ingegneria Meccanica e Aerospaziale - Rome, Italy

Post-Doctoral Researcher

• Research activity:
  - Concurrent Design Engineering
  - Satellite Data Exploitation
  - Multi-objective optimization (Pareto Analysis)
  - System Architecting
  - Space Systems

Telespazio S.p.A. (Rome)

Teacher (external)

- Teaching (in favour of Telespazio personnel) of:
    - System Engineering fundamentals
    - Concurrent Design Techniques applied to Space Systems and Missions
    - Optimization methods based on Pareto Analysis
    - Optimization of satellite-constellation configuration
    - Optimization of deployment strategies of satellite-constellations

Thales Alenia Space Italy (Rome)

Trainer, Team Leader (external)

- Coordination and supervision of the concurrent design of a LEO satellite mission carried out by Thales Alenia Space personnel (satellite subsystem specialists) at the Thales-Alenia-Space-Rome's Concurrent Design Facility (ISDEC).
- (i) This has been the first project to be completed with the Thales-Alenia-Space-Rome's Concurrent Design Facility, newly implemented during the previous month.
- (i) The spacecraft and mission design obtained in the Concurrent Design Facility environment has been officially adopted for a proposal in response to a NASA invitation (RFI - Request For Information) to bid for a specific future NASA mission.

Thales Alenia Space Italy (Rome)

Expert Consultant, Technical Manager (external)

- Expert technical consultancy and direction for the design and implementation of a Concurrent Design Facility at Thales-Alenia-Space-Rome's premises.
- Additional expert technical consultancy on the software and hardware sides.
- On-site training course for the use of the facility in favour of Thales Alenia Space personnel.

Thales Alenia Space Italy (Rome)

Teacher (external)

- Teaching of System Engineering fundamentals and Concurrent Design Techniques applied to Space Systems and Missions, in favour of Thales Alenia Space personnel.

La Sapienza, Università di Roma - Dipartimento Ingegneria Meccanica e Aerospaziale - Rome, Italy

PhD student - Research activity:

- Concurrent Design Engineering
- Multi-objective optimization (Pareto Analysis)
- Systems Architecting
- Space Systems

EDUCATION

- **PhD in Space and Aeronautics Engineering** at University of Rome "La Sapienza" (Rome, Italy)

- **Master Course (II level) in Satellites and Space Systems** at the University of Rome "La Sapienza" (Rome, Italy)

- **Master's Degree in Electronic Engineering** ("vecchio ordinamento" five-years degree course) at the University of Rome "La Sapienza" (Rome, Italy)

PUBLICATIONS

Architecture Study of Low Earth Orbit Commercial Satellite Data Relay Systems - Gianluca Palermo, Alessandro Golkar, Paolo Gaudenzi - **20th Ka and Broadband Communications, Navigation and Earth Observation Conference**, October 1-3 2014 Vietri sul Mare/Salerno, Italy (available online at: http://www.kaconf.org/)

Earth Orbiting support Systems for commercial low earth orbit data relay: Assessing Architectures through tradespace exploration - Gianluca Palermo, Alessandro Golkar, Paolo Gaudenzi - **Acta Astronautica** - Volume 111, June–July 2015, Pages 48–60 (In Press, Available online 17 February 2015 at: http://www.sciencedirect.com/)

Optimization of satellite's onboard data processing workload and related system resources, by offloading specific CPU-intensive tasks onto external computational nodes - Gianluca Palermo, Paolo Gaudenzi - Cornell University - 3rd Federated Satellite Systems FSS Workshop – August 27-28, 2015 – Ithaca, NY

Networked optical constellations for prompt earth imagery acquisition and crisis management: a tradeoff analysis - Gianluca Palermo, Paolo Gaudenzi - 21th Ka and Broadband Communications, Navigation and Earth Observation Conference, October 12-14 2015, Bologna, Italy

Architectural Solutions for Space Infrastructure - Gianluca Palermo, Paolo Gaudenzi - Space Horizons 2014 Conference - February 19-20, 2014 - Brown University, Providence, RI

Progressive deployment of a LEO constellation providing support services to LEO client satellites: a trade-off analysis - Gianluca Palermo, Paolo Gaudenzi - 67th International Astronautical Congress (IAC) - 26-30 September 2016 - Guadalajara, Mexico

Europa Tomography Probe (ETP) mission feasibility – Spacecraft design - Virginia Notaro, Gianluca Palermo, et al. - 67th International Astronautical Congress (IAC) - 26-30 September 2016 - Guadalajara, Mexico

Perspectives of development of satellite constellations for EO and connectivity - Gianluca Palermo, Paolo Gaudenzi - 4th International Federated and Fractionated Satellite Systems Workshop - October 10-11, 2016 - Sapienza University, Rome, Italy

Evaluation of production models in large-scale satellite manufacturing - Gianluca Palermo, Paolo Gaudenzi - 5th Federated and Fractionated Satellite Systems Workshop November 2-3, 2017, ISAE SUPAERO – Toulouse, France

A small spacecraft to probe the interior of the Jovian moon Europa: Europa Tomography Probe (ETP) system design - Virginia Notaro, Gianluca Palermo, et al. - **Acta Astronautica** - Volume 166 (2020) Pages 137–146 (ELSEVIER)