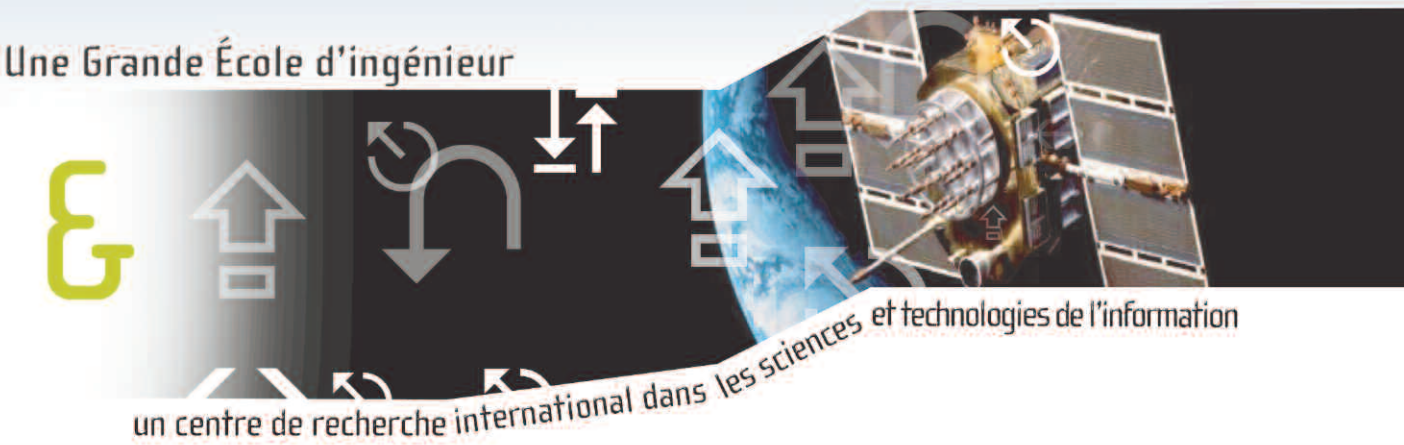
Mastère spécialisé

Space Communications Systems

Accrédité par la Conférence des Grandes Écoles



INP ENSEEIHT
www.enseeiht.fr

isae

TELECOM SudParis

TELECOM Bretagne

Campus de Brest — Campus de Rennes — Campus de Toulouse

Space Communications Systems

→ Programme objectives

A truly unique programme located in Toulouse, heart of the European Aerospace Industry:
- Providing the student with a systems engineering approach integrating the constraints from the environment and supporting technologies in order to derive a global assessment of system performance,
- Contributing to developing technical expertise in aerospace communication techniques:
  - digital communications,
  - signal processing,
  - networking.

→ Programme organization

Key features:
- Courses are taught in English,
- About 400 hours of classroom teaching and seminars from September to August organized on two neighbouring campuses: Enseeiht and Isae,
- Three projects for a total duration of 100 hours,
- A placement:
  - In a company or research centre,
  - In France or abroad,
  - For a duration of 4 to 6 months,
  - Validated by means of a public defense.

→ A strong academic partnership

This Post-Master Professional Certificate is co-organized by Télécom Bretagne, Isae, Enseeiht and Télécom SudParis. And is accredited by the Conférence des Grandes Écoles.

This unique partnership makes it possible to gather the very best experts in their respective scientific fields. Several of our lecturers also come from Industry.

→ Teaching techniques

- Courses, seminars, workshops, simulations using Matlab, Opnet and dedicated software suites,
- Conferences, lab demonstrations, experiments with RF links, telecommunication and navigation receivers,
- Projects.

→ Career opportunities

After graduation, our students hold engineering positions for the design and development of aerospace communications systems.

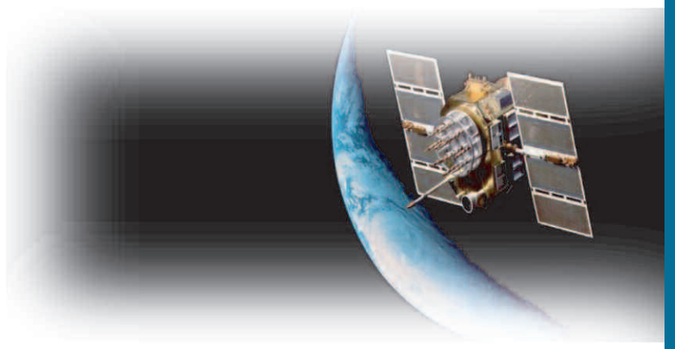
Our training programme is widely recognized by:
- Telecommunication manufacturers in France and abroad: Thalès Alenia Space, EADS, Thalès, Safran, ST Micro...,
- Telecommunication operators: Eutelsat, SES-ASTRA, Telespazio, Hispasat...,
- Research centres and space agencies: Cnes, DSNA, DLR, Esa...,
- SME and consulting agencies: M3Systems, Altran, France Développement Conseil, Athos Origin, ...

→ Requirements

- Bac+5 (French system) or a 5 year higher education degree :
  - Engineering degree,
  - Master or higher degree.
- Selection is based on written application and interview.

Johan Celhay

(year 2008) Thalès Services, currently working at Thalès Alenia Space "Through this Post-Master Professional Certificate, I had the chance to get new skills in this "hot" domain covering both spacecom cutting-edge topics (satellite payload, orbits, applications, current market trends) and also topics which are relevant to digital communications at large: payloads, antennas, link budgets, networking, navigation. I am delighted to have attended the SCS Post-Master Professional Certificate, both from the quality standpoint and the recognition you earn from the Industry after completing the programme."



→ PROGRAMME

September - March:
Classroom teaching, workshops and projects

Transferal units (20 h)
Project management

Basics (145 h)
- Signal processing and source coding
- Digital communications
- Spread spectrum techniques
- Coding applied to the satellite channel
- Network & Telecommunication protocols
- Microwave and antennas
- Tools for network simulation
- Tools for digital communication simulation
- Project

Space systems building blocks (175 h)
- Orbits and satellite platforms
- Propagation & RF links
- Space telecommunication systems
- Satellite based navigation and localization systems
- Telecommunication & navigation payloads
- Digital filters
- Telecommunication & navigation digital receivers
- Earth stations & terminals
- Project

Space applications (160 h)
- Satellite based computer networks
- Embedded systems
- Multimedia & mobile communications
- Financial & legal aspects
- Overview of applications via satellites
- Project

April – September: Placement in a firm and professional thesis

Application :
Application form to be downloaded at :
www.telecom-bretagne.eu
Deadlines for application: several admissions committees scheduled from April to June 2011

Scholarship fees :
- €6,500 for students still in the course of their studies, recent graduates (2 years) without work experience and unemployed
- €12,500 otherwise (company sponsored training, etc)
- An additional - non refundable - fee of €65 is requested for administrative processing

Contact admissions :
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