

# International Technical Symposium on Navigation and Timing

Ecole Nationale de l'Aviation Civile  
Toulouse - France

**Nov. 17- 18, 2014**  
Bellonte amphitheater

## Scope of the Symposium:

The objective of this symposium is to gather experts and innovators that will present their views/work on specific navigation- and/or timing-related topics, with an emphasis on technical aspects.

The symposium is composed of three sessions (this year "Navigation in Constrained Environments", "GNSS Signals and GNSS Performance" and "Air Navigation"). Each session will last for half a day and will consist of four presentations followed by a panel discussion that will allow the audience to interact with the experts.

A poster session to promote the work performed by PhD students is also organized.

### Gold partners:



### Silver Partners:



The EGNOS Service Provider

### Bronze partners:



## 2014 Invited Speakers:

- **Boubeker Belabbas**  
GNSS Integrity Group Leader, DLR, *Germany*
- **Axel Garcia-Peña**  
Assistant Professor, ENAC, *France*
- **Lionel Garin**  
Senior Director of Technology, Qualcomm QCA, *USA*
- **Andriy Konovaltsev**  
Scientific Assistant, DLR, *Germany*
- **Carl Milner**  
Assistant Professor, ENAC, *France*
- **Michel Monnerat**  
Manager of Positioning Solution and Security department, Thales Alenia Space, *France*
- **Mark Petovello**  
Professor, University of Calgary, *Canada*
- **Catherine Ronflé-Nadaud**  
Head of ENAC RPAS lab, ENAC, *France*
- **Jaume Sanz Subirana**  
Professor, Universitat Politècnica de Catalunya, *Spain*
- **Norbert Suard**  
Senior expert in GNSS/SBAS performances, CNES, *France*
- **AJ Van Dierendonck**  
AJ Systems, *USA*
- **Todd Walter**  
Senior Research Engineer, Stanford University, *USA*

## Registration:

The symposium is free-of-charge but the number of seats is limited, so register as early as possible.

You can register at the following address:

<http://cct.cnes.fr/content/international-technical-symposium-navigation-and-timing>

## Contacts:

### ENAC - Symposium Chair :

Olivier Julien ([ojulien@recherche.enac.fr](mailto:ojulien@recherche.enac.fr))

### CCT PDS :

Catalina Rodriguez and Marc Jeannot ([cct-pds@cnes.fr](mailto:cct-pds@cnes.fr))

# International Technical Symposium on Navigation and Timing

## Programme

### Monday Nov 17<sup>th</sup>, 2014

13:00-13:30 Registration

13:30-14:00 Welcome

#### Session 1 - Navigation in Constrained Environments

14:00-14:35 «Antenna arrays for robust GNSS in challenging environments»  
Dr. A. Konovaltsev (DLR, Germany)

14:40-15:15 «Integrating Sensors for Robust Navigation»  
Prof. M. Petovello (Univ. of Calgary, Canada)

#### Coffee Break

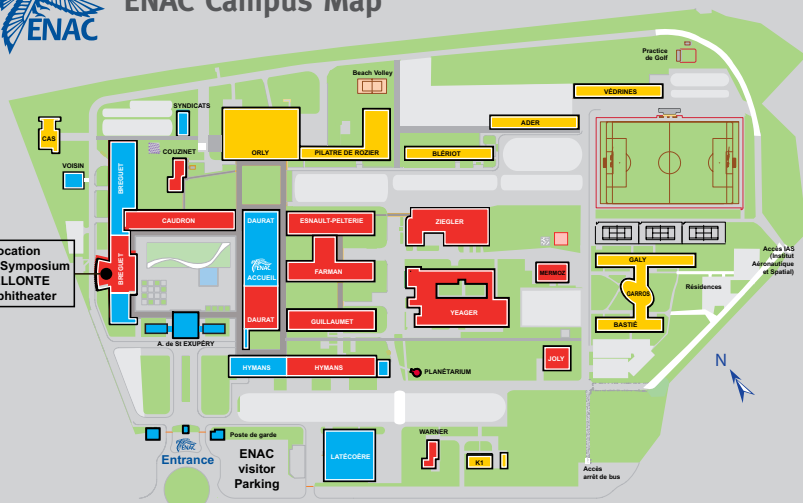
15:45-16:20 «Evolution of Navigation Platform in Smartphones»  
Dr. L. Garin (Qualcomm QCA, USA)

16:25-17:00 «Integrity in Multimodal Transport Application: Standards are on the Way»  
M. Monnerat (TAS, France)

17:05-17:50 Panel Discussion with all speakers  
Moderator: O. Julien (ENAC, France)

#### Cocktail

### ENAC Campus Map



ENAC address : 7, Avenue Edouard Belin, 31055 Toulouse, France

### Tuesday Nov 18<sup>th</sup>, 2014

#### Session 2 - GNSS Signals and GNSS Performance

8:30-9:05 «Benefits and Limitations of New GNSS Signal Design»  
Dr. AJ Van Dierendonck (AJ Systems, USA)

9:10-9:45 «GNSS Navigation Message Analysis and Perspectives»  
Dr. A Garcia-Peña (ENAC, France)

#### Coffee break

*PhD students Poster Session*

10:30-11:05 «Global High Accuracy Navigation»  
Prof. J. Sanz Subirana (UPC, Spain)

11:10-11:45 «GNSS Failure Analysis and Impact on User»  
N. Suard (CNES, France)

11:50-12:35 Panel Discussion with all speakers  
Moderator: C. Macabiau (ENAC, France)

#### Lunch

#### Session 3 - Air Navigation

14:00-14:35 «GBAS Perspectives»  
Dr. C. Milner (ENAC, France)

14:40-15:15 «The future of SBAS and RAIM»  
Dr. T. Walter (Stanford Univ., USA)

#### Coffee break

15:45-16:20 «Alternative Positioning, Navigation, and Timing (APNT) for Performance Based Navigation»  
B. Belabbas (DLR, Germany)

16:25-17:00 «How RPAS (Remotely Piloted Aircraft System) could be integrated in the airspace»  
C. Ronflé-Nadaud (ENAC, France)

17:05-17:50 Panel Discussion with all speakers  
Moderator: L. Azoulai (Airbus, France)

#### Conclusions and Farewell

#### Gold partners:

#### Silver Partners:

#### Bronze partners: