

## GNSS for Civil Aviation (1/2)

réf. **GNSS-AC**

Code OACI 179

ENAC - SINA/EES/ELE

### FORMATION EN ANGLAIS

#### DURÉE

5 jours

#### PLACES OFFERTES

18

#### DATES ET LIEUX

No session in 2016, recast in progress

#### CONDITIONS DE PARTICIPATION

Frais pédagogiques :  
Catégorie A  
• 2015 : 1836 €  
• 2016 : 2064 €

Informations pratiques :  
voir en fin de catalogue

#### CONTACT ADMINISTRATIF ENAC

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Bulletin d'inscription obligatoire :  
voir en fin de catalogue

### Objectifs

To give a solid foundation of GNSS use for civil aviation applications, GNSS fundamentals and civil aviation requirements overview.

To give details on the source and nature of various error sources on measurements, their impact on position precision, integrity monitoring requirements, and various augmentation systems.

Awareness on the future of GNSS.

### Participants concernés

Engineers and executives.

### Contenu

#### GNSS Principles and Characteristics

- Civil aviation needs
- GNSS history and concepts
- Time and space reference
- Multi-lateration principles
- Space, Ground and User segments
- Navigation message concept

#### GPS Signal Structure and Processing

- Basics on spread spectrum theory
- GPS Signal structure
- Acquisition
- Tracking
- Computation of the position solution

#### Measurements Errors and Position

Error Sources Analysis, UERE

- Receiver technologies and tracking loops
  - Antenna technologies
  - Satellite orbit errors and clock errors
  - Signal Multipath Error characterization and mitigation techniques
  - Ionosphere and Troposphere error sources, characterization and mitigation Precision criterions, DOP concepts
- Susceptibility to interference

#### Lab on GPS Measurement and Position Quality : Measurement of the effect of different sources of error and analysis of important parameters

#### Civil Aviation Constraints and Integrity Monitoring Performance

- Definition of Accuracy, Availability, Continuity and Integrity
- Presentation of Integrity Monitoring Concepts
- Integrity Monitoring Performance: Definition of Protection Levels

### RESPONSABLE(S) DU STAGE

Anaïs MARTINEAU [Systèmes Informatiques]