

Global Navigation per Satellite Systems professional training course

Advanced training on GNSS systems, receiver technology, and augmentation systems



Synoptic table

Ref.:	GNSS/TC004
Title:	Advanced training on GNSS systems, receiver technology, and augmentation systems
Duration:	4 days (28 hours)
Prerequisites:	Basics on digital signal processing
Targeted audience:	This course is suitable for professionals wishing to have a detailed overall view on Global Navigation per Satellite Systems and augmentation systems principles, architectures, applications, and on receiver architectures, processing techniques and performances.
Training goals:	<ul style="list-style-type: none"> - To enforce knowledge on GNSS and augmentation systems principles and applications; - To enforce knowledge on architectures, principles, methods, algorithms and functions that operate in the signal processing chain of the GNSS receivers; - To enforce knowledge on performances and vulnerabilities of the system.
Content overview:	<ul style="list-style-type: none"> - Part I: Introduction, principles and concepts involved into the GNSS; - Part II: GNSS signal structures and properties; - Part III: Detailed description of the overall GNSS signal processing chain; - Part IV: Vulnerabilities into the GNSS signal processing chain, and robustness methods; - Part V : Augmentation systems, principles and applications.

Please turn the page for details...

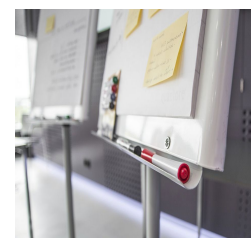
Detailed agenda

	9h00 - 12h30	Lunch break	14h00 - 17h30
Part I: Introduction, principles and concepts involved into the GNSS			
Day 1	Welcome and course introduction		<ul style="list-style-type: none"> – Description of the four major GNSS systems (<i>follow-up</i>): GALILEO, GLONASS, BEIDOU – Physical principles and concepts that get involved into the radio-navigation per satellites – Reference documents
	<ul style="list-style-type: none"> – Introduction on Global Navigation per Satellite Systems and Regional Navigation per Satellite Systems – Services provided by the GNSS – Description of the four major GNSS systems: GPS 		
Part II: GNSS signal structures and properties		Part III: Detailed description of the overall GNSS signal processing chain	
Day 2	<ul style="list-style-type: none"> – GNSS signal structures, modulation and properties 		<ul style="list-style-type: none"> – Architectures of the GNSS receivers – Detailed functional architecture
	<ul style="list-style-type: none"> – key requirements and expected performances 		
Part III: Detailed description of the overall GNSS signal processing chain (<i>follow-up</i>)		Part IV: Vulnerabilities into the GNSS signal processing chain, and robustness methods	
Day 3	<ul style="list-style-type: none"> – Detailed description of the signal processing chain: RF front-end, digitization, baseband, raw measurements provision, orbitography, PVT computation 		<ul style="list-style-type: none"> – Vulnerabilities into the RF front-end – Vulnerabilities into the baseband signal processing stage
Part V: Augmentation systems, principles and applications			
Day 4	<ul style="list-style-type: none"> – Architecture and principles of GBAS and SBAS – Provided services – the integrity concept 		<ul style="list-style-type: none"> – SBAS signal structures, data structures, broadcasted data and corrections

About the instructor

This training has been designed and is delivered by Fabrice Legrand, who is working on GNSS signal processing issues since 1998. He obtained his PhD in 2002 for his works dealing with models and properties of GPS signal digital tracking loops. During the last 20 years, his main fields of interest were the research, development and characterization of GNSS signal processing techniques, and the development of receiver prototypes on versatile technologies.

Watch his detailed references at https://gnssip.tech/en/team_faleg.php



Contact and information

Should you need additional information, please contact us at contact.info@gnssip.tech

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