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GNSS professional training course leaflets
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Global Navigation per Satellite Systems professional training course

Advanced training on GNSS signal processing

Synoptic table

|	
Ref.:	**GNSS/TC003**
Title:	**Advanced training on GNSS signal processing**
Duration:	3 days (21 hours)
Prerequisites:	- Basics on digital signal processing (linear filtering, Fourier transform, correlation, spectral analysis); - Basics on GNSS (the training courses GNSS/TC001 and/or GNSS/TC002 are advised for the trainees having no prerequisite on GNSS).
Targeted audience:	This course is suitable for professionals wishing to deepen their knowledge on **GNSS signal processing** issues in prevision of future specification or development activities closely related to the **GNSS technology core**.
Training goals:	- To understand and acquire the principles, methods and algorithms, and characteristics of the functions that operate in the signal processing chain of a GNSS receiver; - To know how to characterize such functions in term of computation complexity, implementation issues, performances and vulnerabilities.
Content overview:	Part I: GNSS signal structures and properties Part II: Detailed analysis of the GNSS signal processing chain The course includes tutorials based on Gnss IP.tech's IP core modules operating on COTS computing platforms.

Please turn the page for details...

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Detailed agenda

	9h00 - 12h30		Lunch break	14h00 - 17h30	
	Part I: GNSS signal structures and properties				**Part II: Detailed analysis of the GNSS signal processing chain (1/3)**
Day 1	Welcome and course introduction – Introduction on GNSS, operating principles, and key performance parameters of a GNSS receiver	– Structures and properties of the GNSS multiplexes (CDMA, FDMA); – Structures and properties of the GNSS modulations (BPSK, QPSK, BOC, CBOC, TMBOC and ALTBOC);		– Structures and properties of the navigation data messages (NAV, CNAV, INAV, FNAV, ...);	– Overall processing chain architecture – Radio-frequency front-end processing and digitization stages
	Part II: Detailed analysis of the GNSS signal processing chain (2/3)				
Day 2	– Baseband processing: Acquisition techniques	– Baseband processing: Tracking techniques		– Base band processing: Raw measurements provisioning	Tutorials
	Part II: Detailed analysis of the GNSS signal processing chain (3/3)				
Day 3	– Navigation data demodulation	– Orbitography and Position-Time-Velocity solution computation		Tutorials	Conclusion and open discussions

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
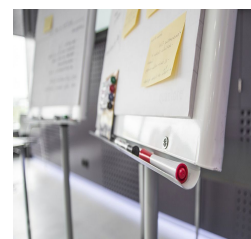
Contact and information

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

Please visit our web page to get informed about our latest available training courses at https://gnssip.tech/trainings