



## SUMMARY

This course covers Global Navigation Satellite System (GNSS), including:

- Components
- Operating principles
- Normal operations, including:
  - Satellite signals
  - RAIM
- GNSS Approaches, including:
  - Overlay approaches
  - RNAV GNSS
  - RNP APCH/AR operations
- Aircraft requirements
- Operational requirements
- Flight crew requirements
- Abnormal operational procedures

The course is available in versions for Boeing and Airbus aircraft.

## TARGET POPULATION

The Pelesys Global Navigation Satellite System (GNSS) course is designed for Professional Pilots requiring initial or recurrent training.

## REGULATORY COMPLIANCE

- ICAO / EASA / FAA / Transport Canada
- Maintain compliance with IOSA standards

Versions Available:  
Jeppesen  
Lido

Course Length:  
1 hr 20 min

## LESSON 01: Introduction

In this lesson we cover:

- Global Navigation Satellite Systems (GNSS)
- Components
- Operating principles

## LESSON 02: Navigation

In this lesson, we cover:

- Benefits
- User requirements
- Operation
- RAIM
- Abnormal situations

## LESSON 03: Approaches

In this lesson, we cover:

- Approach structure
- GNSS overlay approaches
- RNAV GPS approaches
- RNP AR approaches
- Abnormal situations

## LEARNING TIME AND RUN TIME

This course has a learning time of: (run time plus additional time per page to account for understanding learning points)

- 1 hr 20 min (Jeppesen / Lido)

This course has a run time of: (the base time for each page to be completed)

- 1hr 07 min (Jeppesen / Lido)

## Exam Generation System (EGS) Banked Questions

The total amount of banked questions for this course is:

Lesson Title	Standard Questions
Introduction	9
Navigation	7
Approaches	5
Human Factors	5
	<b>26</b>

## REFERENCE MATERIAL

The Pelesys GNSS course provides information for pilots and dispatchers regarding the structure, operation, and use of Global Navigation Satellite System (GNSS) in airline operations. Supplementary information regarding operational use of GNSS can be found in the Pelesys High Altitude Operations, PBN, NAT Operations, and Low Visibility Operations Courses. This course is based on information contained in:

### ICAO

- Annex 4, 11, 14 and 15
- Doc 8168 - Aircraft operations: Volume I: Flight procedures; and Volume II: Construction of visual and instrument flight procedures
- Doc 8168 - PANS-OPS
- Doc 9613 - Performance-Based Navigation (PBN) manual ICAO Doc 7030 Regional supplementary procedures
- Doc 9849 - Global Navigation Satellite System (GNSS) Manual
- JAA TGL 10 - Airworthiness and operational approval for precision RNAV operations in designated European airspace

### EASA

- AMC 20-26 - Airworthiness Approval and Operational Criteria for RNP Authorization Required (RNP AR) Operations
- AMC 20-27 - Airworthiness Approval and Operational Criteria for RNP APPROACH (RNP APCH) Operations Including APV BARO-VNAV Operations
- AMC 20-28 - Airworthiness Approval and Operational Criteria related to Area Navigation for Global Navigation Satellite System (GNSS) approach operation to Localizer Performance with Vertical guidance minima using Satellite Based Augmentation System (SBAS)

### FAA

- 90-100A - U.S. Terminal and Enroute Area Navigation (RNAV) Operations
- 90-107 - Guidance for localizer performance with Vertical Guidance and Localizer
- 91-003 - AIRCRAFT AND OPERATORS APPROVAL FOR RNAV 1 AND RNAV 2 OPERATIONS
- AC20-138C - Airworthiness Approval of Positioning and Navigation Systems
- AC 90-105A - Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S.
- Airman Information Manual
- FAR 91.175
- Instrument Procedures Handbook
- N 8900.218 - Alternate Airport IFR Weather Minimums
- Pilot's Handbook of Aeronautical Knowledge

### TC

- AC 700-023 - RNP APCH
- AC700-024 - RNP AR APCH
- AC 700-025 - RNP 1
- AC 700-027 - Radius to Fix Path Terminator
- AC 700-030 - PBN Enroute
- TP 312 - Aerodrome Standards and Recommended Practices - Land Aerodromes
- TP 14371 - Aeronautical Information Manual (AIM)

The operator remains responsible for obtaining approval from the regulatory authority.

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