

# ATSEP QUALIFICATION, NAV COMBINED

## Air Traffic Safety Electronics Personnel



### Course aim

The course is designed to impart domain-related knowledge and skills appropriate to the Navigation (NAV) Qualification streams in accordance with the EASA ANNEX XIII - Part-PERS requirements for service providers concerning personnel training and competence assessment Subpart A - Air Traffic Safety Electronic Personnel.

### Course objectives

After completion of the course, participants have:

- Knowledge and understanding of the subjects described below (see Content in brief) in accordance with the EASA ANNEX XIII - Part-PERS requirements for service providers concerning personnel training and competence assessment Subpart A - Air Traffic Safety Electronic Personnel.
- Knowledge and understanding of the importance of teamwork.

### Course overview

Our standard ATSEP qualification NAV Combined course comprises NAV-VOR, NAV-DME and NAV-ILS streams - the duration of the course is ten days. Other streams (NAV-NDB, NAV-DF, NAV-MLS) can be added upon client's request.

In addition to the ATSEP NAV Combined course, Entry Point North also offers courses [comprising the individual streams \(/training/?filter=atsep-qualification&tab=atsepcourses\)](/training/?filter=atsep-qualification&tab=atsepcourses).

The competency-based training consists of theoretical lessons and is delivered by professional international instructors. The theory comprises individual topics covering various aspects of operating and maintaining NAV equipment.

### Prerequisites

ATSEP Basic.

### Compliance with regulations

The course is compliant with Commission Implementing Regulation (EU) 2017/373 Annex XIII, subpart A.

## Content in brief

### Performance Based Navigation (NAV-PBN)

#### NAV CONCEPTS

Explain, describe, define and analyse operational requirements, performance-based navigation, area navigation concept (RNAV) and NOTAM.

### Ground Based Systems – VOR (NAV-VOR)

#### VOR

Explain, describe, define and analyse use of system, fundamentals of CVOR and/or DVOR, ground station architecture, transmitter sub-system, antenna sub-system, monitoring and control sub-system, on-board equipment, system check and maintenance.

### Ground Based Systems – DME (NAV-DME)

#### DME

Explain, describe, define and analyse use of system, fundamentals of DME, ground station architecture, receiver sub-system, signal processing, transmitter sub-system, antenna sub-system, monitoring and control sub-system, on-board equipment, system check and maintenance.

### Ground Based Systems – ILS (NAV-ILS)

#### ILS

Explain, describe, define and analyse use of system, fundamentals of ILS, 2F-systems, ground station architecture, transmitter sub-systems, antenna sub-system, monitoring and control sub-systems, on-board equipment, system check and maintenance.

### Global Navigation Satellite System (NAV-GNS)

#### GNSS

Explain, describe, define and analyse general view.

### On Board Equipment (NAV-OBE)

#### ON-BOARD SYSTEMS

Explain the on-board systems used for navigation.

#### AUTONOMOUS NAVIGATION

Describe inertial navigation.

#### VERTICAL NAVIGATION

Describe vertical navigation.

### Functional Safety (NAV-FST)

#### SAFETY ATTITUDE

State the ATSEP role in safety management routines.

#### FUNCTIONAL SAFETY

Describe the impact of functional failures in NAV systems.

**ATSEP QUALIFICATION, NAV COMBINED**  
Air Traffic Safety Electronics Personnel

### **Additional Topic: Ground Based Systems – NDB (NAV-NDB)**

NDB/LOCATOR

Explain, describe, define and analyse use of system, ground station architecture, transmitter sub-systems, antenna sub-system, monitoring and control sub-systems, on-board equipment, system check and maintenance.

### **Additional Topic: Ground Based Systems – DF (NAV DF)**

DF

Explain, describe, define and analyse use of system, VDF/DDF architecture, receiver sub-systems, antenna sub-system, monitoring and control sub-systems, system check and maintenance.

### **Additional Topic: Ground Based Systems – MLS (NAV-MLS)**

MLS

Explain, describe, define and analyse use of system, fundamentals of MLS, ground station architecture, transmitter sub-systems, antenna sub-system, monitoring and control sub-systems, on-board equipment, system check and maintenance.

Photo: Jörn Andre Andersen