

# 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

To become a qualified ATSEP, you need to complete the ATSEP Basic course, the ATSEP Shared course, and at least one ATSEP Qualification course. This Initial Training can be completed in two different orders: ATSEP Basic > ATSEP Shared > ATSEP Qualification, or ATSEP Basic > ATSEP Qualification > ATSEP Shared

This means that the only prerequisite for starting this Qualification course is to have completed the ATSEP Basic course. However, to become a qualified ATSEP you will need to either complete an ATSEP

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Shared course before taking the Qualification course, or complete an ATSEP Shared course after you completed the Qualification course.

### **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, zF-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.

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### **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.

### **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