

ATSEP-Training and Certification in Austria and the Relation to Reg. 2017/373

A view on AUSTRO CONTROL's heading

Presentation for EASA 373 implementation WS, June 2018

Austro Control Engineering Services / Ing. Robert Horak

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SICHERHEIT LIEGT IN DER LUFT



Who is the presenter ?

A short curriculum

- ▶ **ATSEP-Education and Engineering** career started in 1983
(at the former Austrian CAA, the “Bundesamt für Zivilluftfahrt”)
- ▶ followed by **25 years as operational ATSEP**
 - at the main Austrian Airport Vienna (VIE)
 - 10 years of that as Teamleader for 1 of the 3 ATSEP-Teams located at the Airport Vienna
- ▶ **Since 2009 ATSEP Training Manager** for the Engineering Department of Austro Control



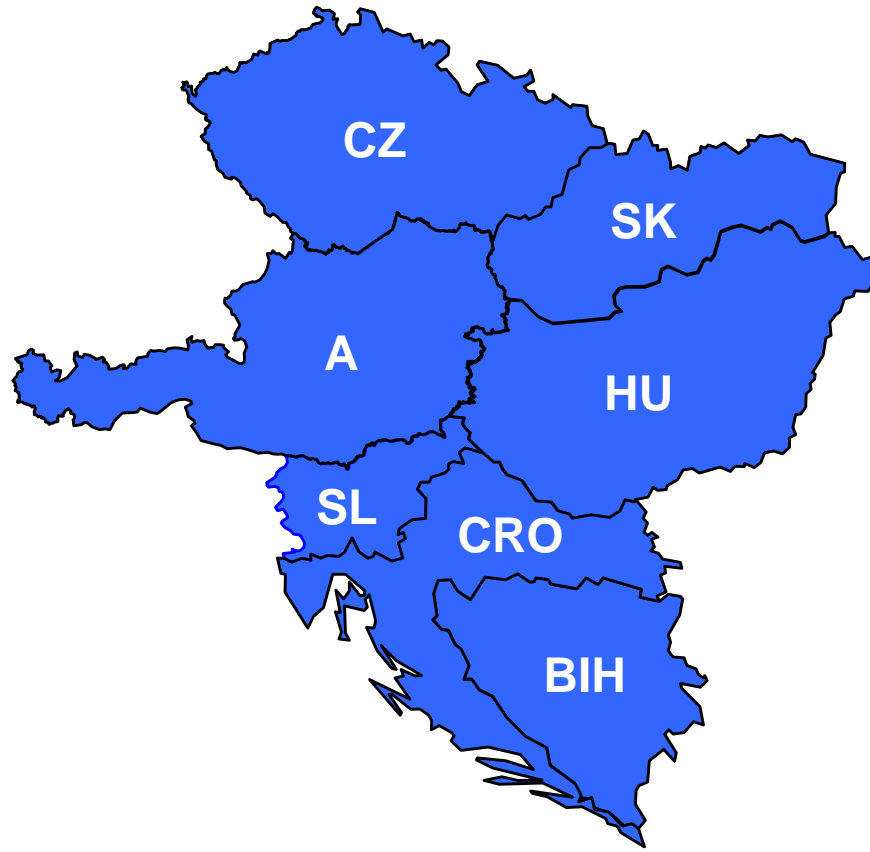
During that times contributing to

- [Eurocontrol Task Force \(ATM TS TF\)](#) building up the CCC
- [EASA-Working group](#), for transforming the CCC-content into Draft for NPA 2013-08
- [FAB-CE ATSEP IT \(implementation team\)](#) with the core initiation and setup of the QUASAR-Initiative
- [EASA-Rule making task \(RMT0719\)](#), for reviewing/updating the Training objectives (and rules) of Annex XIII of Reg. 373

- ▶ Austro Control's European embedding
- ▶ Engineering Dept. / Introduction
- ▶ „ATSEP Essentials“ of Reg. 2017/373
- ▶ Recruitment and Selection
- ▶ Induction phase at Austro Control
- ▶ The phases of ATSEP-Training at Austro Control
- ▶ AARP – Austrian ATSEP Rating Program

Austro Control

FAB-CE Member-/Partnership



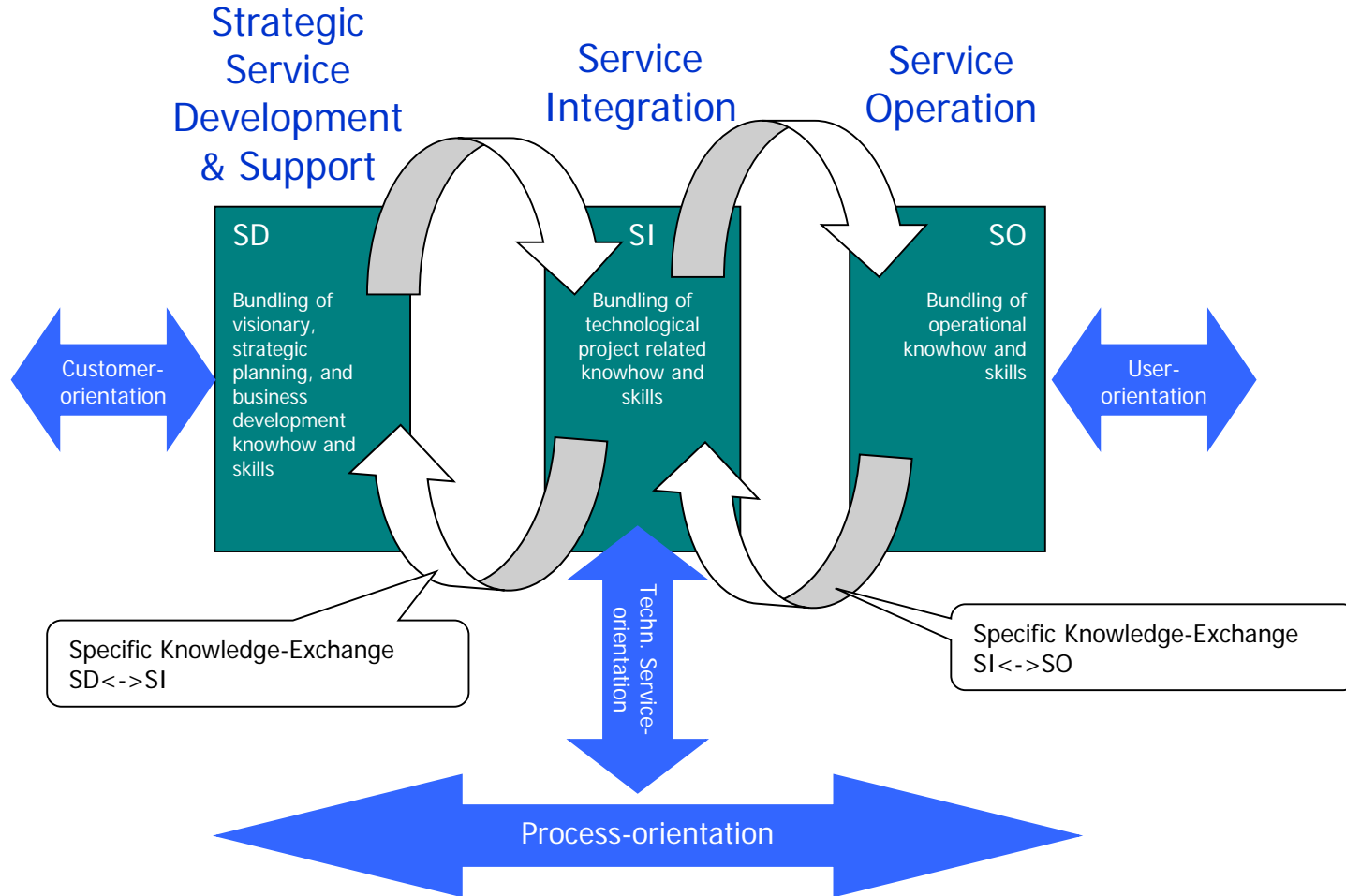
Austro Control

in COOPANS (www.coopans.com)

- ▶ COOPANS = COOPeration between ANS-providers
- ▶ Successful cooperation of 5+ ANSPs (with industrial partner)
 - LFV / Sweden
 - IAA / Ireland
 - Naviair / Denmark
 - Croatia Control / Croatia
 - Austro Control / Austria
 - Thales (as the manufacturer of the TopSky system)and
 - NAV Portugal as the youngest member (March 2018)
- ▶ The primary goals (of this world wide unique example):
 - Common development of the ATM-System (dev.-cost sharing)
 - Common use of the same software (and aligned upgrades)
 - Cooperation for SESAR 2020, Deployment Mgr. and Funding



Austro Control Engineering Services (AES) Organisational Concept



Austro Control Engineering Services (AES)

Basic figures *(actual status per Oct/2017)*

- ▶ *Austro Control with ~1000 Employees in total*
- ▶ *AES: (235 „heads“ and „230“ FTE (full time equivalents))*
 - Strategic Service Development (SD): 15
 - Service Integration (SI): 89
 - Service Operation (SO, inkl. SCC) 121
 - Other staff functions 10
- ▶ „Rated“ ATSEP, total ~160
- ▶ ATSEP with operational S/E-Ratings ~140

EU Reg. 373/2017 → „ATSEP-Regulation“

Title

COMMISSION IMPLEMENTING REGULATION (EU) 2017/373
of 1 March 2017

laying down **common requirements for providers of air traffic management/air navigation services** and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011

Link to EASA „Easy Access Rules“:

<https://www.easa.europa.eu/document-library/general-publications/easy-access-rules-air-traffic-managementair-navigation>

EU Reg. 373/2017 → „ATSEP-Regulation“

Annex I - Definitions

...

- (20) ‘**air traffic safety electronics personnel (ATSEP)**’ means any authorised personnel who are competent to operate, maintain, release from, and return into operations equipment of the functional system;

...

- (56) ‘functional system’ means a combination of **procedures, human resources and equipment, including hardware and software**, organised to perform a function within the context of ATM/ANS and other ATM network functions;

EU Reg. 373/2017

Annex III - COMMON REQUIREMENTS FOR SERVICE PROVIDERS (Part-ATM/ANS.OR)

ATM/ANS.OR.A.005 Application for a service provider certificate

- (a) Application for a service provider certificate or an amendment to an existing certificate shall be made in a form and manner established by the competent authority, taking into account the applicable requirements of this Regulation.
- (b) In accordance with Article 6, **in order to obtain the certificate, the service provider shall comply** with:
 - (1) the requirements referred to in Article 8b(1) of Regulation (EU) No 216/2008;
 - (2) **the common requirements set out in this Annex;**
 - (3) **the specific requirements set out in Annexes IV to XIII,** where those requirements are applicable in light of the services that the service provider provides or plans to provide.



The mandatory part (reminder)

➤ The implementing rules in the Regulation

- *Section I – General requirements*
- *Section II – Training requirements*
- *Section III – Competence assessment requirements*
- *Section IV – Instructors and assessors requirements*

➤ The related Appendices

- *Appendix 1 – Basic Training (shared)*
- *Appendix 2 – Basic Training (streams)*
- *Appendix 3 – Qualification Training (shared)*
- *Appendix 4 – Qualification Training (streams)*



The optional part (reminder)

ATSEP.OR.205 Basic training

(a) The basic training of ATSEPs shall comprise:

(1) the subjects, topics, and sub-topics contained in Appendix 1 (Basic training — Shared); and

(2) where relevant to its activities, the subjects contained in Appendix 2 (Basic training — Streams).

(b) A service provider may determine the most suitable educational requirements for its candidate ATSEP and, consequently, adapt the number and/or level of subjects, topics or sub-topics referred to in point (a) where relevant.



Option to chose one or more subjects, but no need to chose all of them

Appendix 2

Basic training — Streams

Subject 3: AERONAUTICAL INFORMATION SERVICES

Subject 4: METEOROLOGY

Subject 5: COMMUNICATION

Subject 6: NAVIGATION

Subject 7: SURVEILLANCE

Subject 8: DATA PROCESSING

Subject 9: SYSTEM MONITORING & CONTROL

Subject 10: MAINTENANCE PROCEDURES



The optional part (reminder)

ATSEP.OR.210 Qualification training

The qualification training of ATSEPs shall comprise:

- (a) the subjects, topics, and sub-topics contained in Appendix 3 (Qualification training — Shared); and
- (b) where relevant to its activities, at least one of the qualification streams, contained in Appendix 4 (Qualification training — Streams).



Option to chose one or more streams, but no need to chose all of them

Appendix 4	
Qualification training — Streams	
1. COMMUNICATION — VOICE	
Subject 1: VOICE	
TOPIC 1 — Air-Ground	
Sub-topic 1.1 — Transmission/Reception	
Sub-topic 1.2 — Radio Antenna Systems	
Sub-topic 1.3 — Voice Switch	
Sub-topic 1.4 — Controller Working Position	
Sub-topic 1.5 — Radio Interfaces	
TOPIC 2 — COMVCE — Ground-Ground	
Sub-topic 2.1 — Interfaces	
Sub-topic 2.2 — Protocols	
Sub-topic 2.3 — Switch	
Sub-topic 2.4 — Communication chain	
Sub-topic 2.5 — Controller working position	
Subject 2: TRANSMISSION PATH	

► All the training objectives are

- more or less similar to Eurocontrol CCC content
- embedded in the same (streams) structure of
 - SUBJECTS, TOPICS and SUB-TOPICS
 - defined in the IR
- defined with corpus, content and taxonomy on AMC-level

and

- **currently under review/update (also with the rules) by permanent rule making task RMT.0719**
(next workgroup meetings scheduled June + Sept 2018)

Example for structure of training objectives

(Qualification stream „Primary Surveillance Radar“)

Annex XIII to ED Decision 2017/001/R

Stream SURVEILLANCE — PRIMARY SURVEILLANCE RADAR

SUBJECT 1: PRIMARY SURVEILLANCE RADAR

TOPIC 1: ATC SURVEILLANCE

SUB-TOPIC 1.1: Use of PSR for Air Traffic Services

1.1.1	Describe the operational requirements of an en-route or an approach PSR	2	Range, resolution, coverage, availability
1.1.2	Relate key parameters of PSR to system performance	4	Key parameters: PRF, signal energy, frequency diversity, antenna gain, update rate, polarisation, receiver MDS, beamwidth Performance: range, accuracy, resolution, extractor minimum target threshold, weather influence, PD, blind speed, ambiguities, capacity <i>e.g. weather channel</i>

SUB-TOPIC 1.2: Antenna (PSR)

1.2.1	Describe antenna types, accuracy and problems	2	Antenna beam(s), side lobes, reflector antenna, active (phased array) antenna, rotating joints, waveguide interface, pressurisation, dehumidification, polarisation, azimuth encoding, drive systems
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SUB-TOPIC 1.3: Transmitters

1.3.1	Describe the basic characteristics of a	2	Supply EHT RF source (appropriate to type chosen)
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EU Reg. 373 / Annex XIII (#1)

General requirements

- ▶ *ANNEX XIII*
- ▶ **REQUIREMENTS FOR SERVICE PROVIDERS CONCERNING PERSONNEL TRAINING AND COMPETENCE ASSESSMENT (Part-PERS)**
- ▶ SUBPART A — AIR TRAFFIC SAFETY ELECTRONIC PERSONNEL SECTION 1 — GENERAL REQUIREMENTS
- ▶ **ATSEP.OR.100 Scope** (a) This Subpart establishes the requirements to be met by the service provider **with respect to the training and the competence assessment** of air traffic safety electronics personnel (ATSEP).

ATSEP.OR.105 Training and competence assessment programme

In accordance with point ATM/ANS.OR.B.005(a)(6), the service provider employing ATSEP **shall establish a training and competence assessment programme** to cover the duties and responsibilities to be performed by ATSEP.

When ATSEP are employed by a contracted organisation, the service provider shall ensure that those ATSEP have received the applicable training and competences foreseen in this Subpart.

EU Reg. 373 / Annex XIII (#3)

Records

ATSEP.OR.110 Record-keeping

In addition to point ATM/ANS.OR.B.030, the service provider employing ATSEP shall **maintain records of all the training completed by ATSEP, as well as the competence assessment of ATSEP** and make such records available.

EU Reg. 373 / Annex XIII (#3)

Competence Assessment

ATSEP.OR.300 Competence assessment — General

A service provider shall ensure that ATSEP:

- (a) **have been assessed as competent** before performing their duties;
- (b) are subject to ongoing competence assessment in accordance with point ATSEP.OR.305

ATSEP.OR.305 Assessment of initial and ongoing competence

A service provider employing ATSEP shall:

- (a) establish, implement and document processes for:
 - (1) **assessing the** initial **and ongoing competence of ATSEP**;
 - (2) addressing a failure or degradation of ATSEP competence, including an appeal process;
 - (3) ensuring the supervision of personnel who have not been assessed as competent;
- (b) define the following criteria against which initial and ongoing competence shall be assessed:
 - (1) technical skills;
 - (2) behavioural skills;
 - (3) knowledge.

EU Reg. 373 / Annex XIII (#4)

Training instructors and assessors

SECTION 4 — INSTRUCTORS AND ASSESSORS REQUIREMENTS

ATSEP.OR.400 ATSEP training instructors

A service provider employing ATSEP shall ensure that:

- (a) ATSEP training instructors are suitably experienced in the field where instruction is to be given;
- (b) on-the-job training instructors have successfully completed an on-the-job-training course and have the skills to intervene in instances where safety may be compromised during the training.

ATSEP.OR.405 Technical skills assessors

A service provider employing ATSEP shall ensure that technical skills assessors have successfully completed an assessor course and are suitably experienced to assess the criteria defined in point ATSEP.OR.305(b).

Austro Control Engineering Services (AES)

Recruiting and selection

Specific procedures for different jobs:

- Initial entry test, i.e.
 - Technical knowhow
 - Language prof. (English)
 - Stress test
- Selection by former/existing qualification(s)
 - special skills, industrial experience, etc.
- and Interviews / Hearings

Recruiting, Selection, Entry

Austro Control Engineering Services (AES)

Introduction phase – „Onboarding“

The first introduction *provided by*

- HR (Human Resources dept.) and
- SQ (Safety and Quality dept.)

- Company view (organisation and structure)
- HR-services and -mechanisms
- Quality management procedures/documents
- ACG-Security management instruction
 - Security management
 - Fire protection
 - Information and data security
 - Health and (workplace) safety

„Onboarding“ at Austro Control

Recruiting, Selection, Entry

Austro Control Engineering Services (AES)

Introduction phase - AJIP

The aim:

- giving first direct contact with services, systems, structures and organisation and tasks of the various AES-teams
- direct personal contact with people in the units
- based on that supporting a broad and individual networking-fundament for future collaboration

AJIP – AES Job Introduction Program

„Onboarding“ at Austro Control

Recruiting, Selection, Entry

Austro Control Engineering Services (AES)

Introduction phase - AJIP

How is it done?

- Schedule of time to spend with/at the units
(„AJIP-Matrix“ defined via line-managers arranged with the employee)
- several days in total (avg. 5-15, depending on defs.)
- site visits
- attending maintenance tours or tasks
- guided by local „mentors“ and/or experts

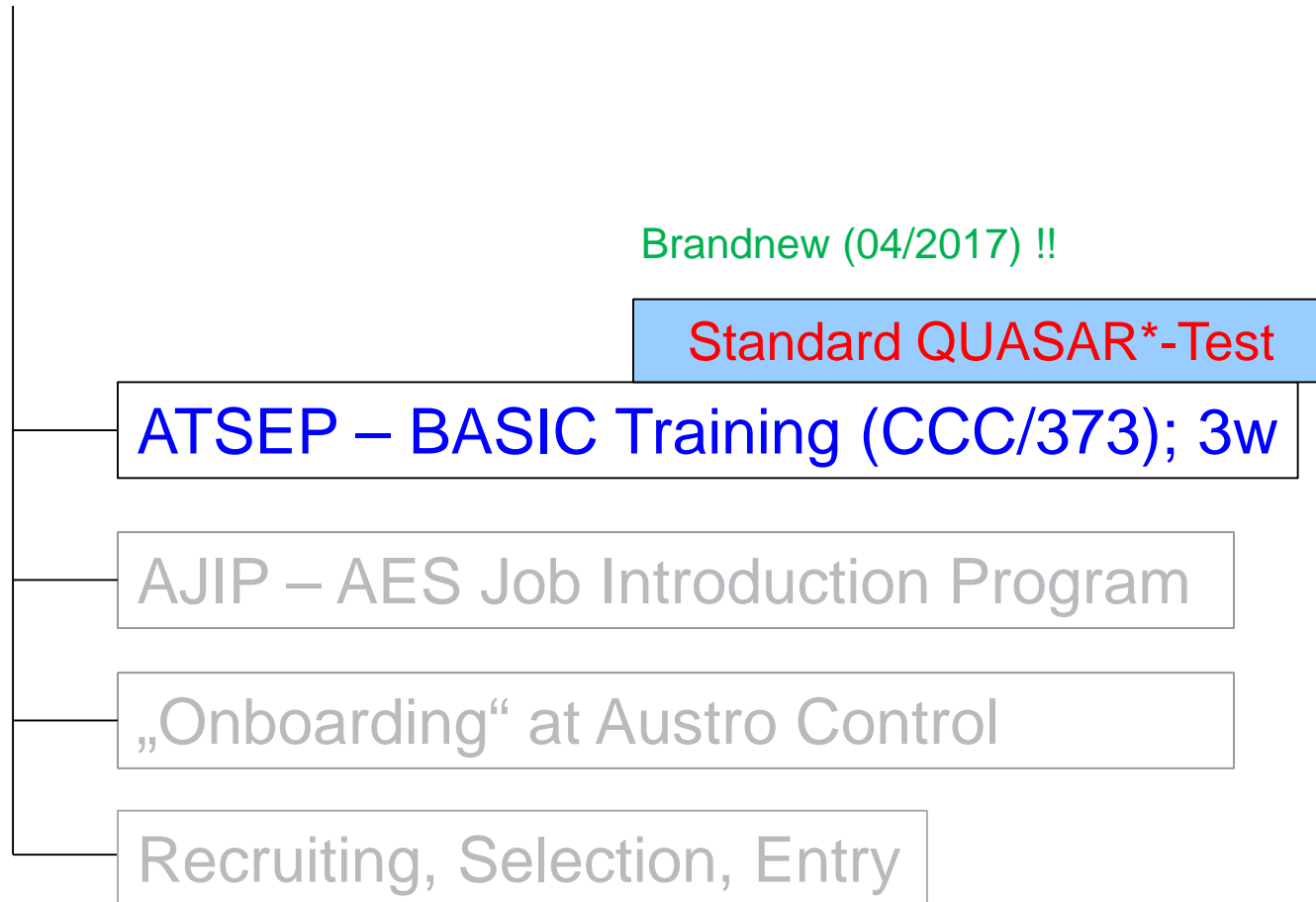
AJIP – AES Job Introduction Program

„Onboarding“ at Austro Control

Recruiting, Selection, Entry

Austro Control Engineering Services (AES)

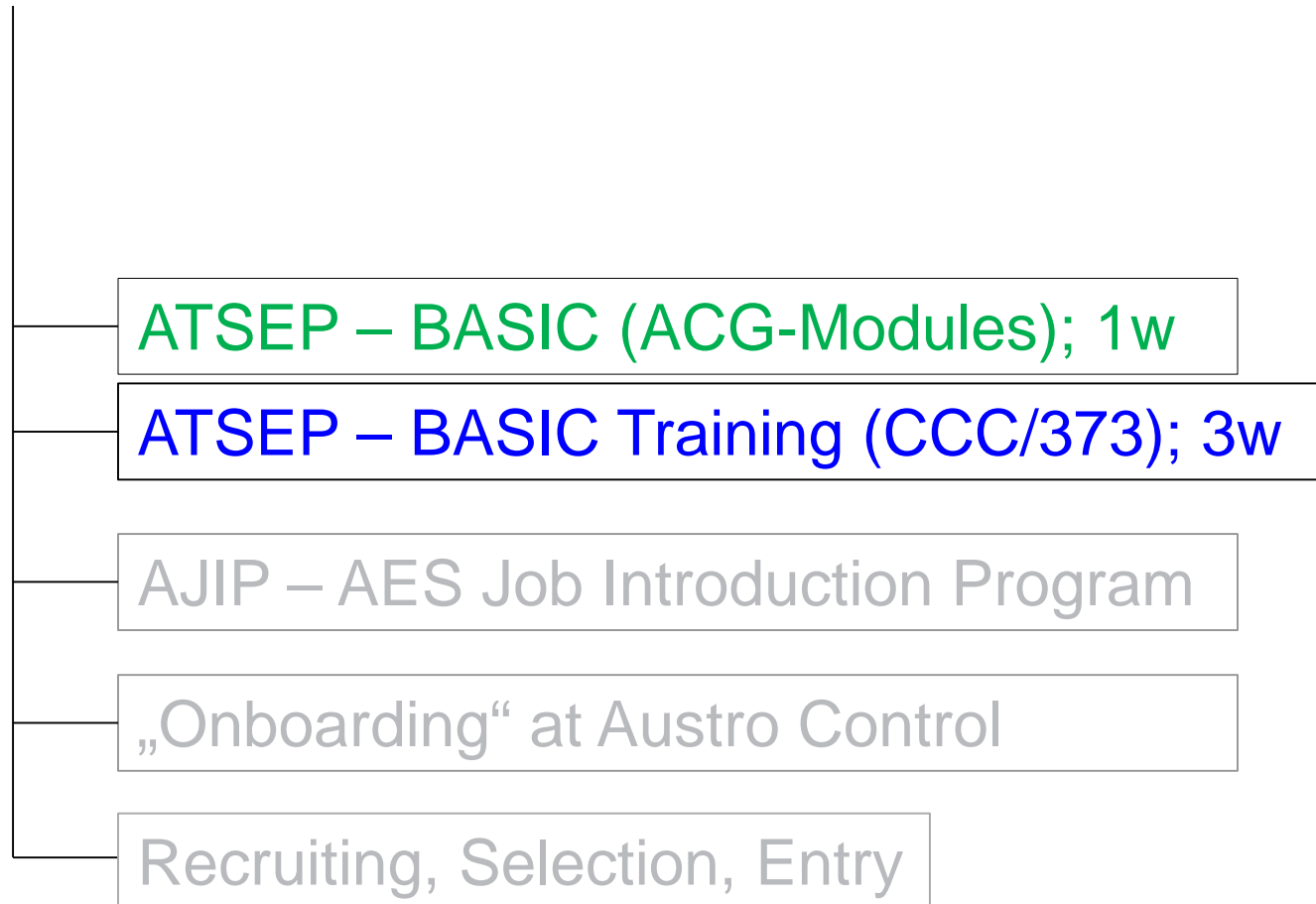
ATSEP-BASIC Training phase



***Q**uestionnaire for **A**TSEP **S**tandard **A**ssessment **R**outines

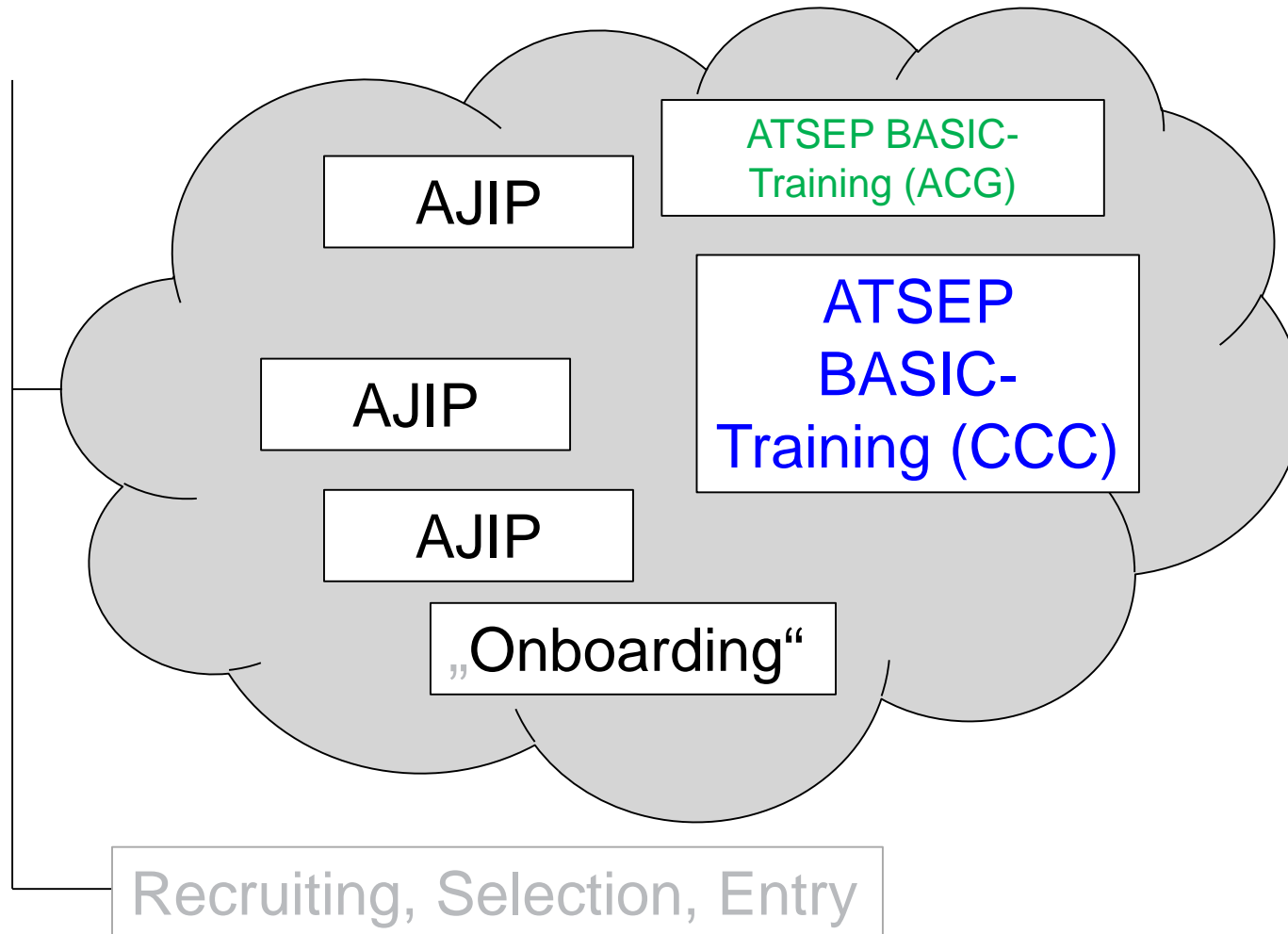
Austro Control Engineering Services (AES)

ATSEP-BASIC Training phase



Austro Control Engineering Services (AES)

Introduction and ATSEP-BASIC phase - Timelines



Austro Control Engineering Services (AES)

ATSEP-BASIC Training – General strategy

The strategy of the Managing Board of the Austro Control Engineering Services Department (AES) regarding ATSEP BASIC-Training is:

Every technical employee of the Engineering Services Department shall complete the entire ATSEP BASIC-Training.

The big picture, i.e. the overview of all the services, service elements and their interactions are a vital part for a comprehensive understanding and the fundament for future work at Austro Control.

(This strategic goal is still unchanged since 2008)

Austro Control Engineering Services (AES)

ATSEP-QUALIFICATION Training (CCC)

- Qualification-parts/domains needed for the job
- Primarily external sources used (since 2010)
- Employees sent to entire qualification domains
 - (no splitting into „streams“)
- 2-4 weeks per Qualification domain in avg.
- Completion of defined parts is required for first level of AARP-Certification

ATSEP – QUALIFICATION Trg. (CCC)

ATSEP – BASIC Training (CCC+ACG)

Introduction phase
(Entry, „Onboarding“ and AJIP ...)

Austro Control Engineering Services (AES)

ATSEP-QUALIFICATION Training (CCC)

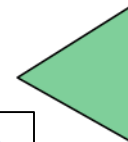
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**AARP
Field-
Rating(s)**

ATSEP – QUALIFICATION Trg. (CCC)

ATSEP – BASIC Training (CCC+ACG)

Introduction phase
(Entry, „Onboarding“ and AJIP ...)



Austro Control Engineering Services (AES)

ATSEP-QUALIFICATION Training (USQ*)

* USQ ... Unit Specific Qualification Training

- Unit specific skills and special trainings needed
- Mostly done internally (unit/team internal instructors) or
- Specific individual external courses
- (USQ is not S/E-Rating Training, it is individual preparation for that)

ATSEP-USQ-Trg.(ACG Unit-Specific QLF)

(First part of)
„Unit Training“

ATSEP – QUALIFICATION Trg. (CCC)

ATSEP – BASIC Training (CCC+ACG)

Introduction phase
(Entry, „Onboarding“ and AJIP ...)

Austro Control Engineering Services (AES)

System/Equipment Rating Training (SERT)

- Normally „dozens“ of system and/or equipment specific trainings for each ATSEP
- Number depending on the system portfolio of the responsible unit
- Training by manufacturer and/or internally

ATSEP S/E-Rating Training

ATSEP-USQ-Trg.(ACG Unit-Specific QLF)

ATSEP – QUALIFICATION Trg. (CCC)

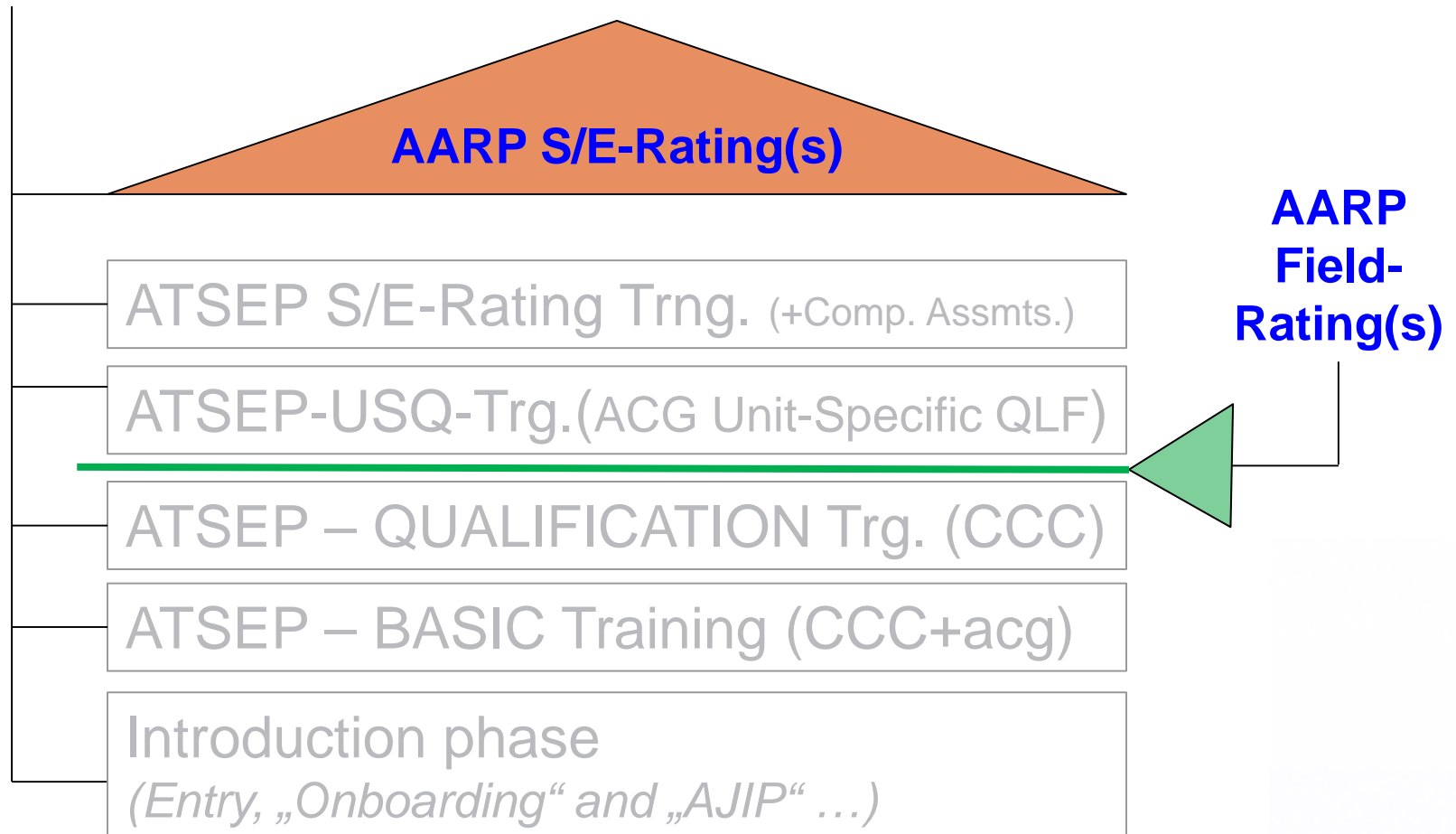
ATSEP – BASIC Training (CCC+ACG)

Introduction phase

(Entry, „Onboarding“ and AJIP ...)

} „Unit Training“

Austro Control Engineering Services (AES) System/Equipment Rating Training (SERT)



Austrian ATSEP-Training overall
has a

DROPOUT-Rate = 0

(Period under consideration: 2008-2018)

AARP

Austrian ATSEP Rating Program

Guideline for Certification of ATSEP of Austro Control GmbH

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Presentation for Eurocontrol ATT-14, Apr. 2018

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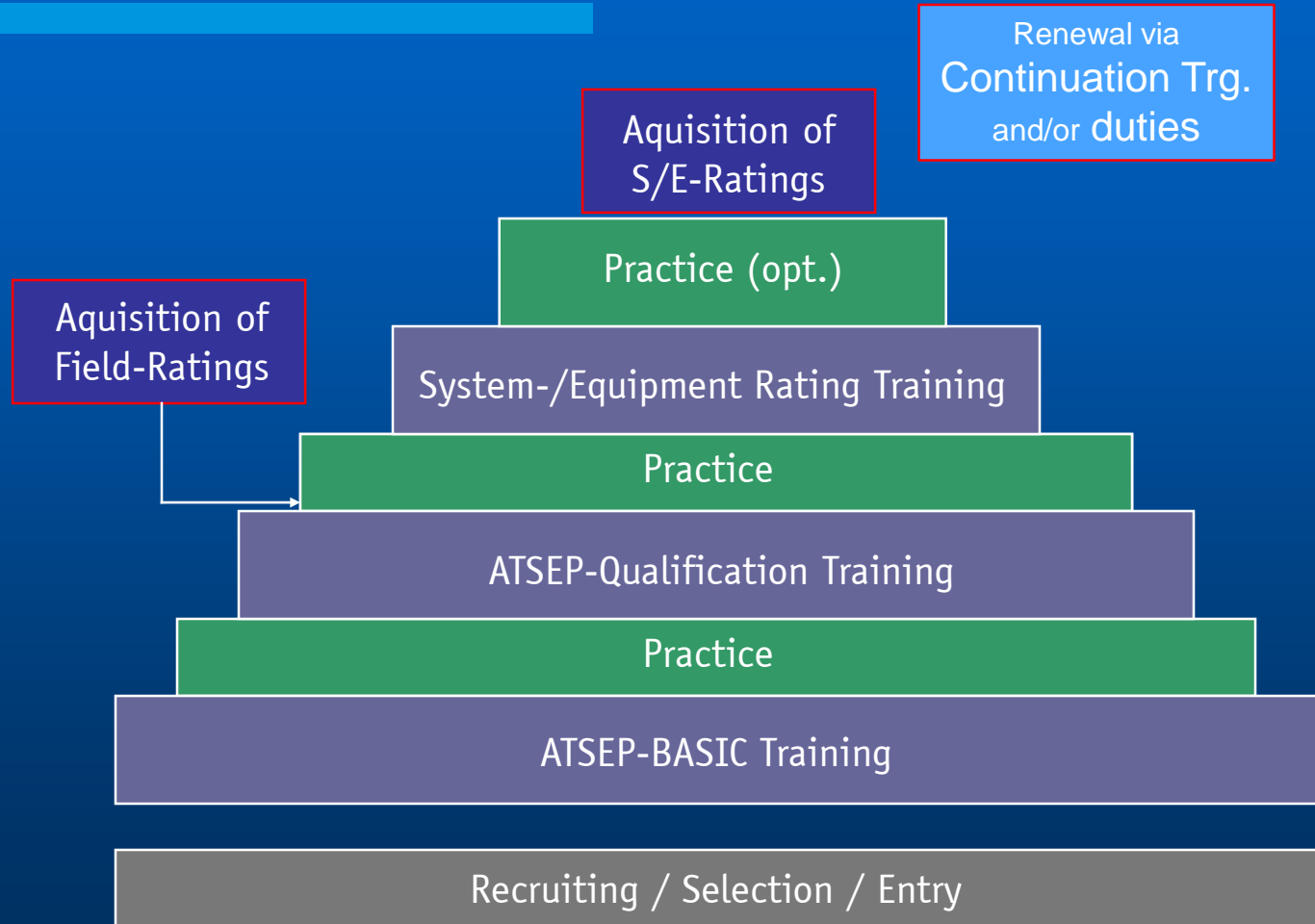


Aims of AARP

AARP started operational in 2007 and in the meantime it has been multiply audited by the Austrian NSA.

- Fulfilling ESARR-5 and EU 1035/2011 (and 373 ...)
- Ensuring appropriate quality for ATSEP-Training
- Ensuring proper competency of staff
- Certification for „Safety Related Systems“
- National and international documentation
- Preparation for internat. contest and comparison
- Alignment to nat. and int. specifications and law

Training and Rating Overview



Field-Rating

- After completion of min. 2 ATSEP Qualification Domains Trg.
 - ❖ „Shared“ (SHR) + min. 1 of COM/NAV/SUR/DAT/SMC (FAC, MET in Austria)
- Aquisition of more than 1 Field-Rating possible (and probable)
- Valid for a period of 5 following years
- Valid all over the ACG locations in Austria
- Not operational; is prerequisite for aquisition of S/E-Ratings
- Renewal via
 - prepared Renewal-form (signed by employee and manager; 4-eyes principle!), or
 - automatically through renewal of assigned S/E-ratings

ATM / CNS - Fields

- DATA COM - Data Communications
- VOICE COM - Voice Communications
- DAT – Data Processing Systems
- SUR - Surveillance
- NAV - Navigational Systems
- MET - Meteorological Systems
- SMC - System Monitoring and Control
- FAC - Facilities

Based on Eurocontrol: Model for Task and Job Description for ATS Technical Staff - „Fields of Competence“

S/E-Rating („Type-Rating“)

- After completion of the defined ATSEP S/E-Rating Training for the specific system or system group
- Required for autonomous ATSEP-work with sole responsibility
- Usually combinations of several S/E-Ratings
- Valid all over in Austria (exception: S/E-Ratings SCC)
- Valid for a period of 3.3 following years
- Renewal via
 - prepared Renewal-form (signed by employee and manager; 4-eyes principle!) **and**
 - documentation for appropriate training and/or work on the referenced system(s) during the last period of the certificate

S/E-Rating („Special Type-Rating“)

for specific working areas or workplaces, like:

- SMC (SCC Service Control Center in Austria) on duty
 - “SCC-SUP” (Supervisor), “SCC-ATM” and/or “SCC-AIM” Network Administrator
- Flight Inspection (Flight Calibration)
- TCMS-Systems (Technical Control and Monitoring System over all ANS-systems)
- Specific conditions defined for renewal for each special Type-Rating
- Period of validity 3.3 years (like for standard S/E-Ratings)

AARP-Certificate / Example

Datum der Erstaussstellung / Date of initial issue: 24.05.2017		Fachzertifikate, Gültigkeit / Field-Ratings, Validity																
Dienstort des Inhabers / Place of employment: LOWW		31.12.2022	31.12.2022	31.12.2022		31.12.2022	31.12.2022	31.12.2022	31.12.2022		31.12.2022							
		COM DATA	COM VOICE	DAT		SUR	NAV	MET	SMC	FAC								
		Typenzertifikate, Gültigkeit / System/Equipment-(S/E-) Ratings, Validity																
		COM DATA-S	COM VOICE-S	ATM-S	AIM-S	SUR-S	NAV-S	MET-S	SMC-S	FAC-S								
		30.4.2021	30.4.2021	30.4.2021	30.4.2021	30.4.2021	30.4.2021	30.4.2021		30.4.2021								
<p>Der Inhaber dieses Zertifikats ist berechtigt, unter Einhaltung der aktuell gültigen Betriebsverfahren an den in den System-/Equipment Ratings definierten Flugsicherungssystemen der Austro Control eigenverantwortlich zu arbeiten.</p> <p>Austro Control bestätigt, dass der Inhaber ein den Regulativen entsprechendes Training absolviert hat. Die Richtlinie AARP in der aktuell gültigen Version definiert die Details zum Zertifikat.</p> <p>The holder of this certificate is authorised to work in accordance with the currently valid operation regulations - on ANS systems of Austro Control as defined in the System-/Equipment Ratings.</p> <p>Austro Control confirms that the owner of this certificate has received the training required in accordance with the regulations.</p> <p>All certification details are part of AARP Guideline.</p>		CBB	x	ATIS		CFDP		AIM AWP	x	ASR	x	DME	x	DMAS	x	OMC	EPS	x
		CNW		Volmet	x	CSDP		AIMP		AWAM		GEO		MEDAS	x		UPS	x
		DLS		DATALOG	x	CMAP		AMSS		MLAT	x	ILS	x	MET APPL				
		LAN	x	FX	x	SNPS		SDM		RSR		MKR		MET Sens	x			
				VCS IP		SDP-IRT				SMR	x	NDB	x	METSW				
				VCS VCX	x	TERM	x			WPR	x	VDF	x					
						FLOW				WXR	x	VOR	x					(ATM-S):
						CWP												FSP
						ATM-NWK												
						ATM-SPS												
				TMCS-SPS														
				ATM-LAU														
				RELEASE														
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		Spez. Typenzertifikate, Gültigkeit / Special System/Equipment-(S/E-) Ratings, Validity																
		30.4.2021																
SCC-SUP	SCC-ATM	SCC-AIM	Flight Inspection (NAV)			TCMS-OPS	TCMS-SYS											



Success is
when preparation
meets opportunity!