

# QUASAR

*(Questionnaire for ATSEP Standard Assessment Routines)*

**A European initiative for harmonization of ATSEP Assessment**

## TERMS OF USE

Version 4.8 / Dec. **DRAFT**

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## **1. General information**

### **1.1. Background**

QUASAR (Questionnaire for ATSEP Standard Assessment Routines) was an initiative set up between FABCE and FABEC to harmonize the assessments for ATSEP at the INITIAL Training phases.

The defined routines and principles for using the commonly collected and developed material shall provide an independent and standardized assessment approach.

The material was developed based on existing material with considerable contribution from many experts of the participating organizations of the QUASAR Task Force (QTF).

### **1.2. Users of material**

The usage of the material is restricted to the actively contributing<sup>1</sup> QUASAR member organizations (see 6.)

For the specific case of conducting assessments for other organizations see 1.5

### **1.3. Confidentiality**

The assessment material (questions and answers) shall be handled confidentially (further details see “Copyright”).

### **1.4. Non-profit principle**

It is not allowed to sell the material or parts of it, charge any license fee for using it or make profit out of it in other ways.

It is accepted to charge an administration fee in special cases (see 1.5).

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<sup>1</sup> active contribution means creation of and expert reviews on question material

### **1.5. Conducting “stand-alone” assessments**

If QUASAR assessment is provided as a stand-alone examination (i.e. without providing a corresponding training), an administration fee of

**95 EUR (excl. VAT) per participant and per assessment**

shall be charged by the conducting organization.

This fee does not apply:

- if the assessment is part of training provision or other services,
- in case of re-assessment (after the first failure),
- for internal participants within QUASAR member organizations.

Before conducting the assessment(s) a specific agreement shall be signed between the QUASAR member organization and the external organization, asking for the assessments.

The agreement shall contain at a minimum:

- 1) the agreement to fully follow the QUASAR Terms of Use, especially the non-disclosure of question material
- 2) the latest version of the QUASAR Terms of Use
- 3) a contact person (and contact data) for each organization
- 4) the signature of the responsible persons of the organizations

This agreement can be embedded in another service contract.

For the first provision of assessments to a new organization it is recommended to agree on a supervision by the QUASAR member organization (including an agreement about travel costs)

If the QUASAR member organization is not directly supervising the assessment, the contact person of the external organization is fully responsible for the local handling of assessment(s) and the adherence to the QUASAR Terms of Use.

## 2. COPYRIGHT - Policy for sharing the material

\*\*\*\*\* Generally the usage of the material is **restricted** ! \*\*\*\*\*

The QUASAR-material is intellectual property of the QUASAR Task Force member organizations.

Any sharing or publishing of the QUASAR-questions and associated answers outside the organizations of the QUASAR Task Force (QTF) members without explicit confirmation of the QTF is prohibited (except defined samples for demonstration).

*The core purpose of this restriction is to avoid “public” sharing, publication via Internet, etc., and to avoid a common distribution among future students, giving them the possibility to learn every detail of the material just by heart instead of getting the specific knowledge based on working with their training material.*

It is the responsibility of the Organization using the QUASAR-material to take adequate steps to safeguard that the material is not copied or shared in any (unauthorized) way and the participants in QUASAR-as shall be briefed on that in an appropriate way.

It is the responsibility of the Organization, implementing the question sets in an on-line system (like LMS system), which is accessible via the public internet, to make the necessary efforts (e.g. IT security, strict regulation on the access of the system, identification of participants, supervision, etc.) to comply with the confidentiality and copyright principles written in this document.

In case the question material is provided to the ATSEP instructors in order to prepare for the teaching, the following rules shall be followed:

- Only the relevant parts (subject related to their specialization) are distributed to the instructors, not the entire set of question material.
- The question set is always accompanied with the Terms of Use.
- Instructors shall confirm in written their understanding of the Terms of Use, especially that it is NOT ALLOWED to share the question material with students.
- It is recommended to deliver always the latest version of the official PDF documents provided by QTF.

In case of severe violation of these rules, the QTF can decide to terminate the membership of the involved QTF member from the group.

### **3. Validation of questions and answers**

The QUASAR Task Force (QTF) collects, generates and releases DRAFT versions of question sets (questions and answers) for each part (Subject) of the INITIAL Training.

The DRAFT versions are then reviewed and validated by subject matter experts (SME) in participating organizations.

After that, the final approval is done inside the QTF before the final official question sets are delivered.

After delivery of question sets, they shall be implemented for assessment along the process described in chapter 5.

Updates of final question sets shall also be done by following the above mentioned validation process.

### **4. Requirements for creating questions**

- The questions should cover all the given objectives related to the subjects of the Eurocontrol-CCC (Spec-132) and be directly related to those objectives.
- All questions shall be designed and labelled according to the taxonomy level of the related objective of Eurocontrol-CCC (Spec-132) .
- The language for the question material is English.
- The questions (and related answers) shall be unambiguous and clear to understand.
- The questions are in multiple choice (single correct answer) or multiple selection (multiple correct answers) format.
- The pool of answers for each question can consist of min. 2 to max. 6 answers.
- The number of correct answers can be from min. 1 to all (max. 6) answers.
- Question with multiple correct answers shall be identified and labelled separately from those with single correct answers.

## **5. Guidelines for using the question sets for assessments**

### **5.1. General recommendation for assessments for Qualification parts**

It is recommended that assessment for Qualification parts should be conducted using a combination of the theoretical QUASAR examination set and other means (e.g. oral, written free text or practical examinations or any combination of it).

Reasons for recommending the adoption of this mixed mode assessment are:

- variations in national or local environment,
- practical aspects of some objectives,
- the complex understanding of the detailed matters in some parts and
- some of the objectives can't be fully assessed by the question types used in the QUASAR examination sets.

### **5.2. Participants briefing and debriefing**

Prior to starting QUASAR-assessments participants shall be briefed about the rules along this Terms of Use.

After the assessment the debriefing shall contain as a minimum

- the achieved score of the participant, and
- if requested by the participant, a view on the questions with incorrect answers

#### **Important:**

Students shall not be provided with any copy of the question material (either in paper or electronic form) and they are not allowed to make any copies or audiovisual records (fotos, videos, screenshots, etc.) out of it.

It is the responsibility of the examination supervisor to inform the participants about these rules and ensure their fulfillment.

### **5.3. Creating examination sets**

The examination set is a subset of the entire question set and the selection shall be based on the following rules:

- The selection shall include at least one question for each Subtopic (of each Subject).
- The selection of the questions shall be random.
- Question with multiple correct answers shall be distinguished from those with single correct answers
- Different examinations (at different times) shall be done by using different examination sets
- The total set (number) of selected questions for examination and the distribution of questions shall conform to the tables stated in the Annexes 1 to 7 in this document.

In all Annexes the Subjects and numbers of Subtopics and Objectives are extracted from Eurocontrol-CCC (Spec-132).

The tables in the Annexes 1 to 7 are showing the figures for the entire Training part and, if applicable, all corresponding streams.

### **5.4. Planned working time for examination**

- The calculation of the planned maximum working time for the examination in minutes shall be the summary of number of questions per taxonomy multiplied by taxonomy level.
- Example: for the examination of BASIC-part, the maximum working time is:

$$57_{(Tax-1)} * 1 + 43_{(Tax-2)} * 2 = 57 + 86 = 143 \text{ minutes}$$

- The individual maximum working time is given with the tables in the Annexes 1-7

### **5.5. Defined Points for questions**

- The maximum number of achievable points for multiple choice and multiple selection questions shall be
  - 1 point for Tax 1
  - 2 points for Tax 2 and higher



## **5.6. Scoring points for answered questions**

### **5.6.1. For questions with single correct answer:**

- Full score for the correct answer and/or
- Zero if one or more incorrect answer(s) are selected

### **5.6.2. For questions with multiple correct answers:**

- a) The score for each selected correct answer is defined as
  - the value of maximum achievable points for the question divided by the total number of selectable correct answers for the question.
- b) The score for each selected incorrect answer is defined as
  - the negative value of maximum achievable points for the question divided by the total number of selectable incorrect answers for the question.
- c) The minimum score for each question shall not be lower than 0 (no negative values).

## **5.7. Passmark for examinations**

The passmark to achieve the QUASAR-Examination standard is

- **75 %** of the achievable maximum points of the referred examination set.

If a different passmark is to be used due to local requirements, this passmark shall always be stated in conjunction with the achieved results. It is highly recommended, that this different passmark should not be below 70 %.

## **5.8. Reporting and Feedback**

Every usage of the QUASAR question material for examinations shall be reported to the QUASAR Task Force (QTF) or the QUASAR Focal Points (QFP) with the following data:

- date of examination(s)
- number of examinees
- subjects used in the examination
- achieved score, expressed as a percentage [%] for each examinee
- problems or suggested improvements

Data shall be submitted depersonalized.

\* \* \* \* \*

## 6. QUASAR Task Force contributors (QTF members)

Actual members:

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## 7. Document Change Records

<i>Date</i>	<i>Versio n</i>	<i>Description of changes</i>
04.10.2018	4.4	Numbering of chapters and corresponding references changed; list of document change records introduced; members list updated; correction in Annex 7; term “DP” changed to “DPR” (according to new terminology/prop. changes in Reg. 373-AMC); table of contents updated; text for scoring in 5.5.2 extended;
15.03.2019	4.5	Update of contributors list; distribution tables for QLF.COM and QLF.SUR (with all corresponding streams) added; values for maximum working time for each table included
11.07.2019	4.6	List of contributors updated; chapter 5.9 shifted to beginning of chapter 5 (as 5.1 now) due to importance; distribution table for DPR-DP added
24.10.2019	4.7	Q-Distribution tables for QLF.NAV / all Subjects and Streams added; QTF contributors updated; some editorial changes
20.12.2019	4.8d	draft text for external assessments introduced as chapter 1.5

## **Annex 1: Distribution table - BASIC**

The rules for creating examination sets for Basic Training, besides those defined in chapter 5.2, shall conform to the following table:

### **BASIC / all Subjects**

Max. working time: 143 min.

Subject	Nr. of Subtopics	Number of Objectives			Number of Questions		
		TAX-1	TAX-2	Total	TAX-1	TAX-2	Total
BAS.IND	10	7	19	26	2	7	9
BAS.ATF	5	10	9	19	5	5	10
BAS.AIS	1	7	-	7	3	-	3
BAS.MET	4	6	3	9	3	2	5
BAS.COM	7	23	9	32	11	5	16
BAS.NAV	12	20	10	30	10	5	15
BAS.SUR	12	21	8	29	10	4	14
BAS.DPR	6	8	12	20	5	8	13
BAS.SMC	6	9	8	17	5	4	9
BAS.MTN	1	1	3	4	1	2	3
BAS.FAC	2	4	1	5	2	1	3
	66	116	82	198	57	43	100

## **Annex 2: Distribution tables - Qualification COM**

The rules for creating examination sets for Qualification COM Training, besides those defined in chapter 5.2, shall conform to the following tables:

### **QLF – Communication / all Subjects**

Max. working time: 123 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
COM.VCE	10	1	12	7	5	25	1	13	7	5	26
COM.DTA	17	7	10	7	2	26	7	10	7	2	26
COM.TRP	5	-	2	4	-	6	-	2	4	-	6
COM.REC	2	-	4	-	-	4	-	4	-	-	4
COM.FST	2	1	1	-	-	2	1	1	-	-	2
	36	9	29	18	7	63	9	30	18	7	64

### **QLF – Communication / Stream "COM-VOICE"**

Max. working time: 75 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
COM.VCE	10	1	12	7	5	25	1	13	7	5	26
COM.TRP	5	-	2	4	-	6	-	2	4	-	6
COM.REC	2	-	4	-	-	4	-	4	-	-	4
COM.FST	2	1	1	-	-	2	1	1	-	-	2
	19	2	19	11	5	37	2	20	11	5	38

### **QLF – Communication / Stream "COM-DATA"**

Max. working time: 75 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
COM.DTA	17	7	10	7	2	26	7	10	7	2	26
COM.TRP	5	-	2	4	-	6	-	2	4	-	6
COM.REC	2	-	4	-	-	4	-	4	-	-	4
COM.FST	2	1	1	-	-	2	1	1	-	-	2
	26	8	17	11	2	38	8	17	11	2	38

### Annex 3: Distribution tables - Qualification NAV

The rules for creating examination sets for Qualification COM Training, besides those defined in chapter 5.2, shall conform to the following table:

#### QLF – Navigation / all Subjects

Max. working time: 169 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4/5	Total	TAX-1	TAX-2	TAX-3	TAX-4/5	Total
NAV.PBN	4	1	6	-	-	7	1	3	-	-	4
NAV.NDB	7	-	11	8	1	20	-	6	4	1	11
NAV.DFI	6	1	10	8	-	19	1	5	4	-	10
NAV.VOR	8	1	13	11	2	27	1	7	6	1	15
NAV.DME	10	1	15	10	1	27	1	8	5	1	15
NAV.ILS	9	2	23	6	4	35	1	12	3	2	18
NAV.MLS *1	8	2	24	5	4	34					
NAV.GNS	1	-	5	2	-	7	-	3	1	-	4
NAV.OBE	3	-	4	-	-	4	-	2	-	-	2
NAV.FST	2	1	1	-	-	2	1	1	-	-	2
	58	9	112	50	12	182	6	47	23	5	81

\*1 ... part MLS not supported, system not in use in Europe

#### QLF – Navigation / Stream "NAV-NDB"

Max. working time: 47 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4/5	Total	TAX-1	TAX-2	TAX-3	TAX-4/5	Total
NAV.PBN	4	1	6	-	-	7	1	3	-	-	4
NAV.NDB	7	-	11	8	1	20	-	6	4	1	11
NAV.GNS	1	-	5	2	-	7	-	3	1	-	4
NAV.OBE	3	-	4	-	-	4	-	2	-	-	2
NAV.FST	2	1	1	-	-	2	1	1	-	-	2
	58	9	112	50	12	182	2	15	5	1	23

**QLF – Navigation / Stream "NAV-DFI"**

Max. working time: 46 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4/5	Total	TAX-1	TAX-2	TAX-3	TAX-4/5	Total
NAV.PBN	4	1	6	-	-	7	1	3	-	-	4
NAV.DFI	6	1	10	8	-	19	1	5	4	-	10
NAV.GNS	1	-	5	2	-	7	-	3	1	-	4
NAV.OBE	3	-	4	-	-	4	-	2	-	-	2
NAV.FST	2	1	1	-	-	2	1	1	-	-	2
	58	9	112	50	12	182	3	14	5	0	22

**QLF – Navigation / Stream "NAV-VOR"**

Max. working time: 56 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4/5	Total	TAX-1	TAX-2	TAX-3	TAX-4/5	Total
NAV.PBN	4	1	6	-	-	7	1	3	-	-	4
NAV.VOR	8	1	13	11	2	27	1	7	6	1	15
NAV.GNS	1	-	5	2	-	7	-	3	1	-	4
NAV.OBE	3	-	4	-	-	4	-	2	-	-	2
NAV.FST	2	1	1	-	-	2	1	1	-	-	2
	58	9	112	50	12	182	3	16	7	1	27

**QLF – Navigation / Stream "NAV-DME"**

Max. working time: 55 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4/5	Total	TAX-1	TAX-2	TAX-3	TAX-4/5	Total
NAV.PBN	4	1	6	-	-	7	1	3	-	-	4
NAV.DME	10	1	15	10	1	27	1	8	5	1	15
NAV.GNS	1	-	5	2	-	7	-	3	1	-	4
NAV.OBE	3	-	4	-	-	4	-	2	-	-	2
NAV.FST	2	1	1	-	-	2	1	1	-	-	2
	58	9	112	50	12	182	3	17	6	1	27



**QLF – Navigation / Stream "NAV-ILS"**

Max. working time: 57 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4/5	Total	TAX-1	TAX-2	TAX-3	TAX-4/5	Total
NAV.PBN	4	1	6	-	-	7	1	3	-	-	4
NAV.ILS	9	2	23	6	4	35	1	12	3	2	18
NAV.GNS	1	-	5	2	-	7	-	3	1	-	4
NAV.OBE	3	-	4	-	-	4	-	2	-	-	2
NAV.FST	2	1	1	-	-	2	1	1	-	-	2
	58	9	112	50	12	182	3	21	4	2	30

**Annex 4: Distribution tables - Qualification SUR**

The rules for creating examination sets for Qualification SUR Training, besides those defined in chapter 5.2, shall conform to the following tables:

**QLF – Surveillance / all Subjects**

Max. working time: 126 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
SUR.PSR	11	2	17	4	2	25	1	10	2	1	14
SUR.SSR	13	1	35	3	1	40	1	21	2	1	25
SUR.ADS	9	4	12	3	-	19	2	7	2	-	11
SUR.HMI	4	3	6	-	-	9	2	4	-	-	6
SUR.SDT	2	-	2	3	-	5	-	1	2	-	3
SUR.FST	2	1	1	-	-	2	1	1	-	-	2
DPR.DPS Parts	1	-	3	2	-	5	-	2	1	-	3
	42	11	76	15	3	105	7	46	9	2	64

**QLF – Surveillance / Stream "SUR-PSR"**

Max. working time: 55 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
SUR.PSR	11	2	17	4	2	25	1	10	2	1	14
SUR.HMI	4	3	6	-	-	9	2	4	-	-	6
SUR.SDT	2	-	2	3	-	5	-	1	2	-	3
SUR.FST	2	1	1	-	-	2	1	1	-	-	2
DPR.DPS Parts	1	-	3	2	-	5	-	2	1	-	3
	20	6	29	9	2	46	4	18	5	1	28

**QLF – Surveillance / Stream "SUR-SSR"**

Max. working time: 77 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
SUR.SSR	13	1	35	3	1	40	1	21	2	1	25
SUR.HMI	4	3	6	-	-	9	2	4	-	-	6
SUR.SDT	2	-	2	3	-	5	-	1	2	-	3
SUR.FST	2	1	1	-	-	2	1	1	-	-	2
DPR.DPS Parts	1	-	3	2	-	5	-	2	1	-	3
	22	5	47	8	1	61	4	29	5	1	39

**QLF – Surveillance / Stream "SUR-ADS"**

Max. working time: 50 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
SUR.ADS	9	4	12	3	-	19	2	7	2	-	11
SUR.HMI	4	3	6	-	-	9	2	4	-	-	6
SUR.SDT	2	-	2	3	-	5	-	1	2	-	3
SUR.FST	2	1	1	-	-	2	1	1	-	-	2
DPR.DPS Parts	1	-	3	2	-	5	-	2	1	-	3
	18	8	24	8	0	40	5	15	5	0	25

## Annex 5: Distribution table - Qualification DPR-DP

The rules for creating examination sets for the Qualification Training for the stream DPR-DP, besides those defined in chapter 5.2, shall conform to the following table:

### **QLF – Stream Data Processing "DPR-DP"**

Max. working time: 128 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of Questions				
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3	TAX-4	Total
DPR.FSA	3	1	2	3	-	6	1	1	2	-	4
DPR.DPS	7	1	15	4	-	20	1	9	2	-	12
DPR.PRO	9	4	12	4	-	20	2	7	2	-	11
DPR.DAT	13	6	18	1	-	25	4	11	1	-	16
QLF.COM Parts	5	3	5	7	2	17	2	3	4	1	10
QLF.SUR Parts	13	1	13	3	-	17	1	8	2	-	11
	50	16	65	22	2	105	11	39	13	1	64

## Annex 6: Distribution table - Qualification SMC (in progress)

## Annex 7: Distribution table - Qualification Shared

The rules for creating examination sets for Qualification SHARED Training, besides those defined in chapter 5.2, shall conform to the following table:

### **QLF – Shared**

Max. working time: 48 min.

Subject	Nr. of Subtopics	Number of Objectives					Number of questions			
		TAX-1	TAX-2	TAX-3	TAX-4	Total	TAX-1	TAX-2	TAX-3/4	Total
SHR.SAF	5	3	13	2	1	19	1	5	1	7
SHR.HAS	3	5	-	-	-	5	2	-	-	2
SHR.HUM	14	8	29	10	-	47	3	10	3	16
	22	16	42	12	1	71	6	15	4	25