Partnerzy projektu: IETU aquateam COWI Gdańska Fundacja Wody

Facilitating the use of ETV to increase energy efficiency in water sector

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Environmental Technology Verification Body IETU

Training for water technologies test and certification bodies, research centres and laboratories
Building capacity for high quality test data generation on innovative energy efficient technologies for water sector for the needs of ETV
Aquateam COWI, 24.10.2017, Oslo, Norway

Norway grants

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I. General requirements and responsibilities of the actors involved in the test data generation process according to the General Verification Protocol of the EU ETV Programme

II. *Performing testing for the needs of ETV: test planning, implementation and reporting requirements*

III. *Test system assessment as a quality assurance element of the ETV process*

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Norway grants

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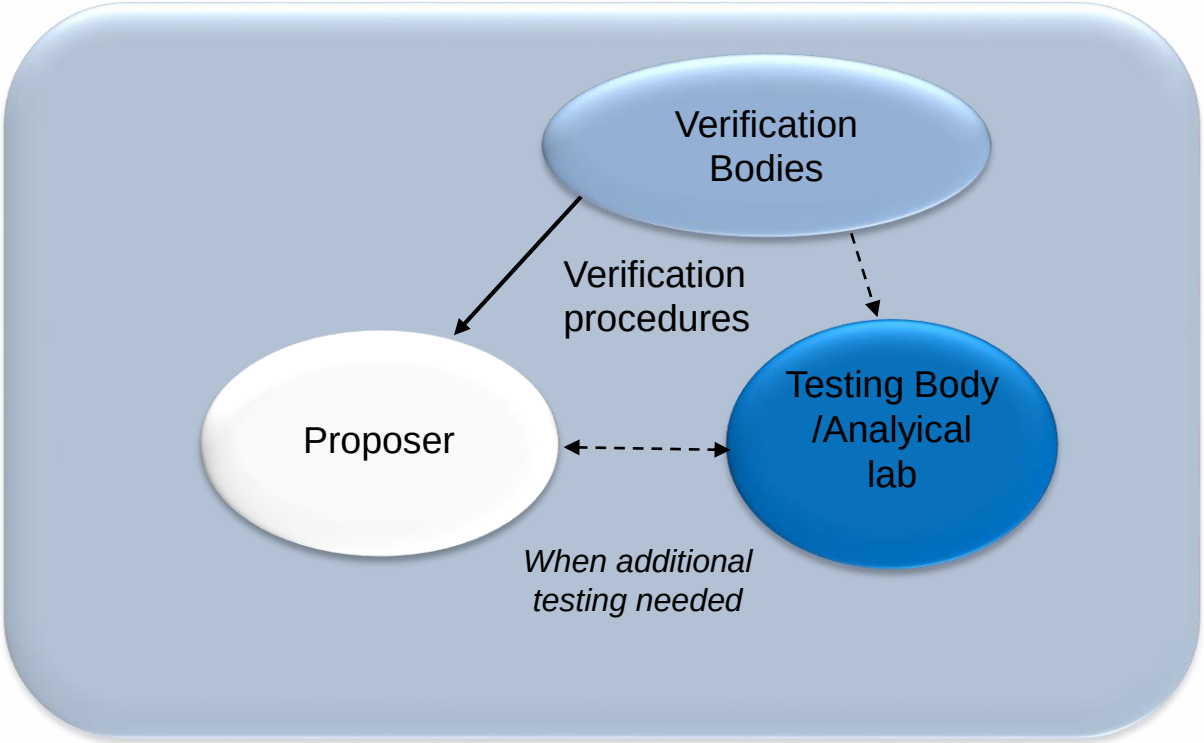
I. General requirements and responsibilities of the actors involved in the test data generation process according to the General Verification Protocol of the EU ETV Programme

Actors involved in the test data generation process

Verification structure



Role of a Verification Body

Verification Bodies

Verification bodies implement the GVP for the technology scope for which they are accredited

They are responsible for :

- Ensuring compliance with the quality management requirements and general test requirements of the GVP of any test bodies involved in their verifications, taking account of the possible accreditation or certifications of the test bodies.
- Where appropriate, requiring or validating test methods, witnessing tests, assessing and accepting test data provided by a test body, or by the proposer in case of in-house testing, as compliant with the requirements set in the GVP and the specific verification protocol.

Who are test bodies

Test bodies

Test bodies are organisations responsible for **planning, performing and reporting** the testing of an environmental technology in accordance with the specific verification protocol.

- The test body shall be an entity that can be held **legally responsible**
- may be a part of a larger organization
- The staff of the test body shall **not be the same** as those responsible for the evaluation of the test results in the Verification Body and they shall not be dependent upon these.

Role of test bodies

A test body:

- **drafts the test plan**, in accordance with:
  - the relevant procedures of the GVP,
  - the specific verification protocol
  - in agreement with the Verification Body and the proposer.

- When there is a **coordinating test body**, the verification body and proposer may agree that the coordinating test body drafts an overall test plan that applies to all test bodies. In such case the other test bodies may be exempted from preparing a specific test plan by the Verification Body, if deemed appropriate;

Role of test bodies

A test body:

- **performs the tests** according to the test plan, ensuring the level of quality required by the specific verification protocol;
- **performs analyses** (if applicable), ensuring the level of quality assurance required by ISO/IEC 17025;
- **drafts the test report** on the tests performed and provides it to the proposer and Verification Body.

Role of the proposer

The proposer initiates and supports verification of the technology from the first contact with the Verification Body until completion of the ETV process and use of the Statement of Verification unless the process terminates prematurely.

The proposer:

- enters into contractual arrangement with the Verification body and the **test bodies** and pays for any contracted services.
- **provides timely access to the technology, accessories, user manuals and training for** the Verification Body and **test bodies**
- **proposes the performance parameters** and their numerical values to to be verified
- reviews and approves the specific verification protocol and **test plan**(s),
- **reviews the test report(s**)

II. Performing testing for the needs of ETV: test planning, implementation and reporting requirements

Performing testing for ETV

When additional testing is decided:

After completion of the **specific verification protocol, based on the assessment of the existing test data against the test design and other requirements specified in the specific verification protocol made by the Verification Body**

Steps to be undertaken as part of the testing phase are:

a) Test plan (B.V.2 GVP)
b) Testing (B.V.3 GVP)
c) Test report (B.V.4 GVP)

The test body (bodies) are designated by the **proposer** in agreement with the Verification Body.

Test Plan

- Drafted by the **test body** and approved by the proposer and the Verification Body.
- A table of contents for the test plan is given in ***Appendix 7 Table of Contents for the test plan and test report*** (GVP) and shall be followed

Test plan shall include:

- a part describing the quality assurance for the specific test planned, as provided in C.III.2 (GVP)
- Test schedule

- **The descriptions of test operation shall allow the test staff to perform the tests as required in the specific verification protocol and to replicate operations with the least possible variation during the test.**
- **The description shall allow tracing of any errors back to sources with equipment, methods, operations or staff.**

Testing

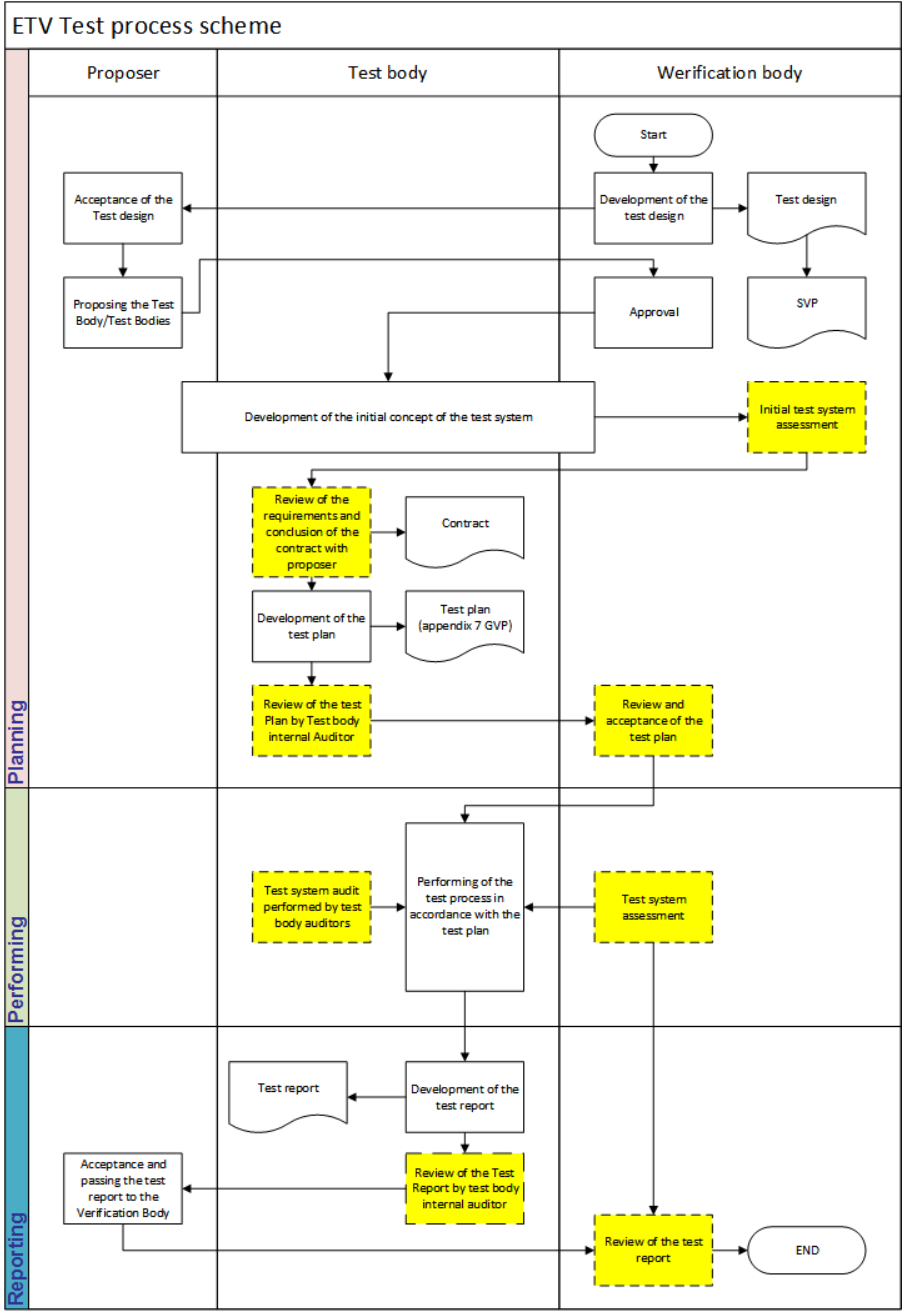
- Testing shall be done according to the test plan
- Amendments to and deviations from the test plan shall be recorded and approved by the **proposer** and the **Verification Body**.
- The amendment and deviation forms shall be recorded as part of the records of testing.

Test report

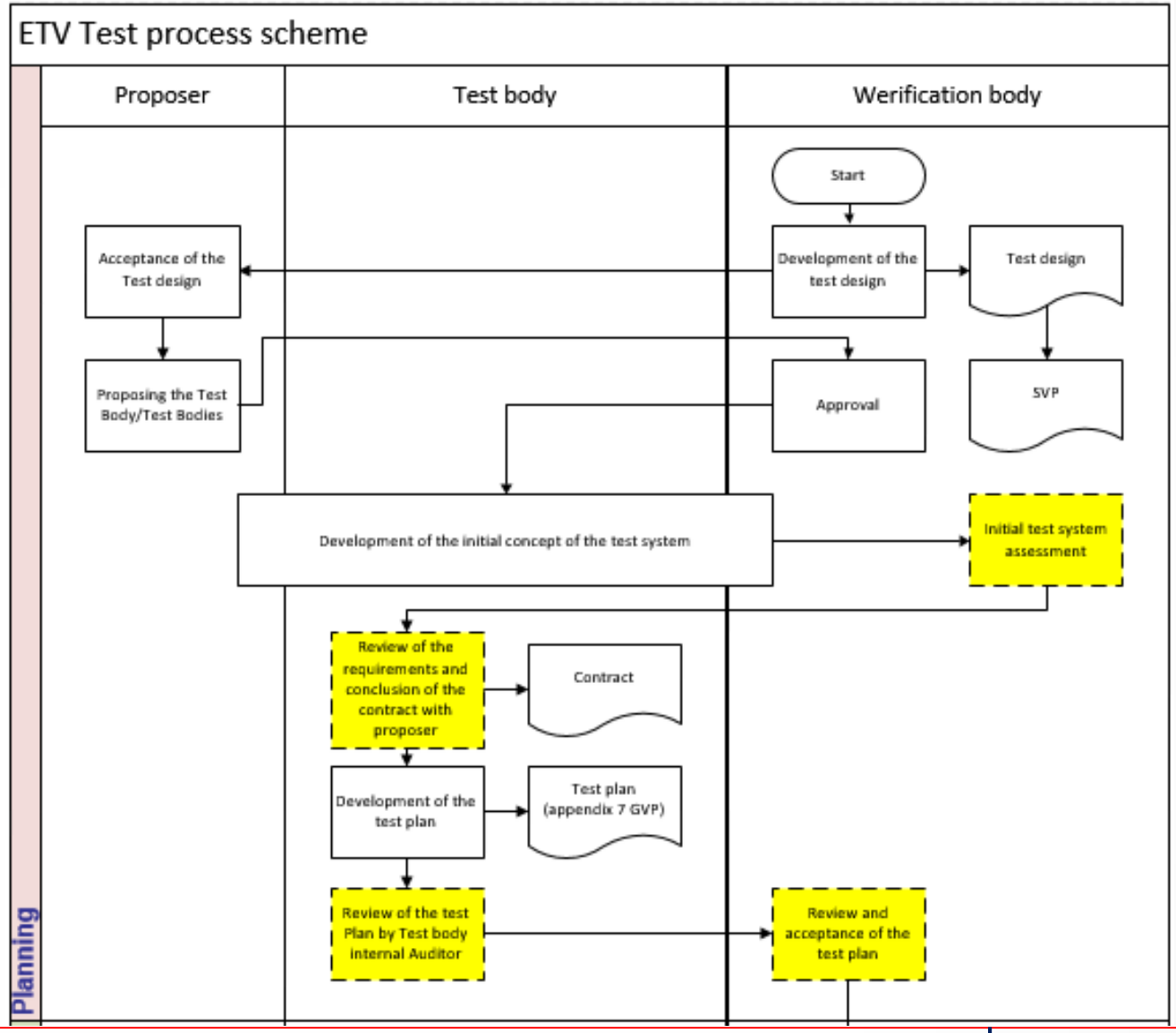
- Drafted by the **test body**
- Communicated to the proposer and Verification Body for review and acceptance.

The format of the test report to be used is given in ***Appendix 7 Table of Contents for the test plan and test report*** (GVP).

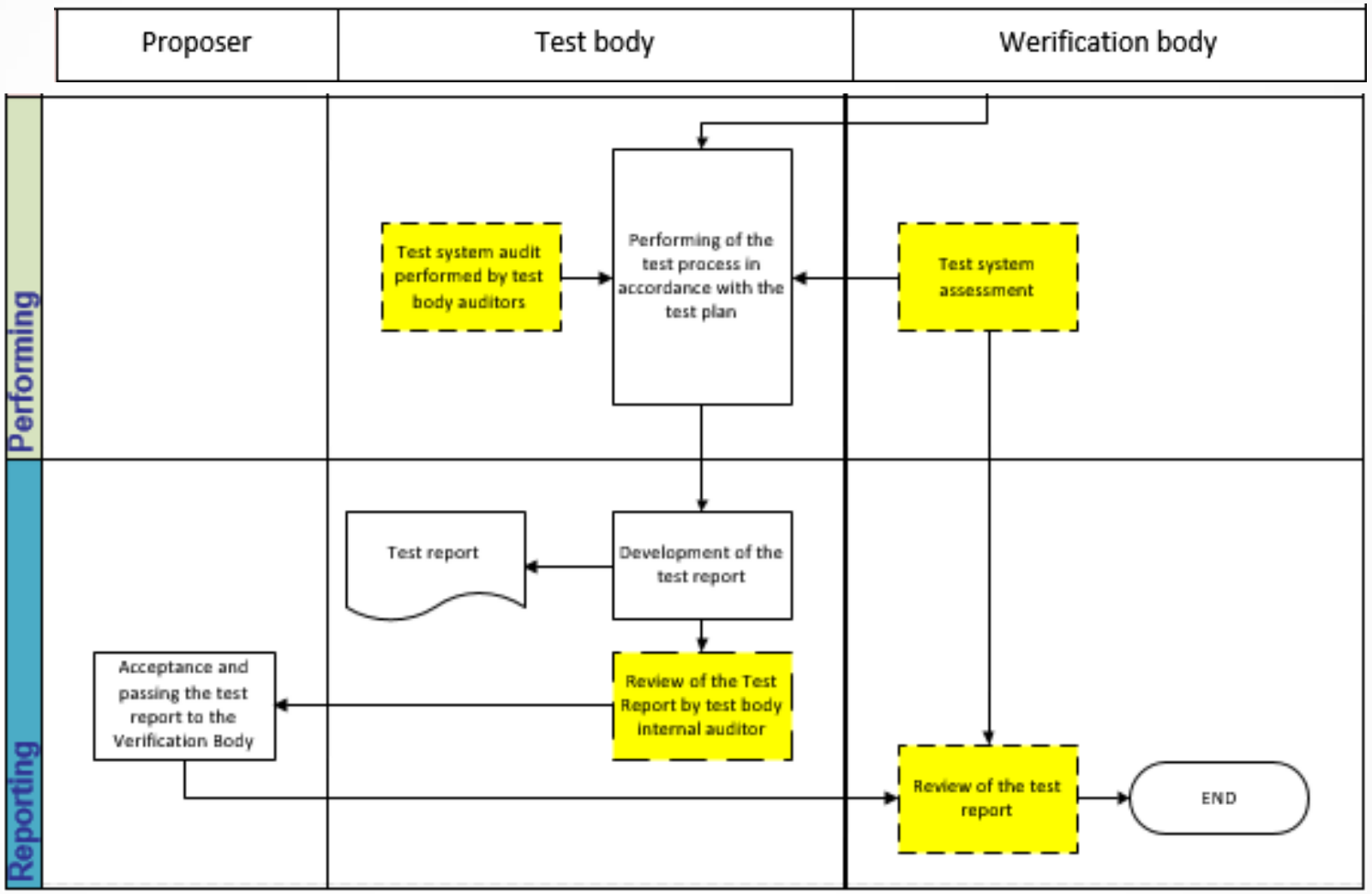
ETV Test process scheme



ETV Test process scheme



ETV Test process scheme



III. *Test system assessment as a quality assurance element of the ETV process*

Test system assessment & audit

(23) '**Test system assessment**' means **determining** whether the test system and quality management system applied by a test body to generate data for verification purposes comply with the requirements of the General Verification Protocol and of the specific verification protocol.
It includes the review of the relevant accreditations, and may include a test system audit.

(24) '**Test system audit**' means the **examination of a test system and of a quality management system**. It is achieved through:

- review of relevant procedures,
- observation of actual practices
- evaluation of test performance.
- may include examination of control data for relevant period,
- participation in proficiency testing and/or control of calibration of measurement devices.

It is aimed to provide the necessary evidence for the test system assessment.

Test system assessment

The Verification Body:

- **has the overall responsibility** for ensuring that the verification is conducted according to the General Verification Protocol.
- **ensures** that the **test bodies** involved in a verification meet the quality management requirements and the general test requirements of the GVP.
- **controls** that the **test body** performs test planning, execution and reporting according to the requirements of the GVP and of the relevant specific verification protocol.

Test system assessment

Requirements for test bodies

The quality management and general test requirements of the GVP are those **requirements of ISO 17025 that are considered relevant for the tests to be performed**. A list of requirements that need to be considered can be found in Appendix 10.

A **test body** can demonstrate meeting these requirements **by accreditation** according to ISO/IEC 17025 for the methods of testing and calibration relevant for the specific verification process concerned.

Test bodies performing analyses for the purpose of verification shall be accredited according to ISO/IEC 17025 for the relevant **methods of analysis.**

In order to ensure that the relevant quality management and general test requirements are fulfilled, a **test system audit is mandatory for the test activities that are not covered by an ISO17025 accreditation**.

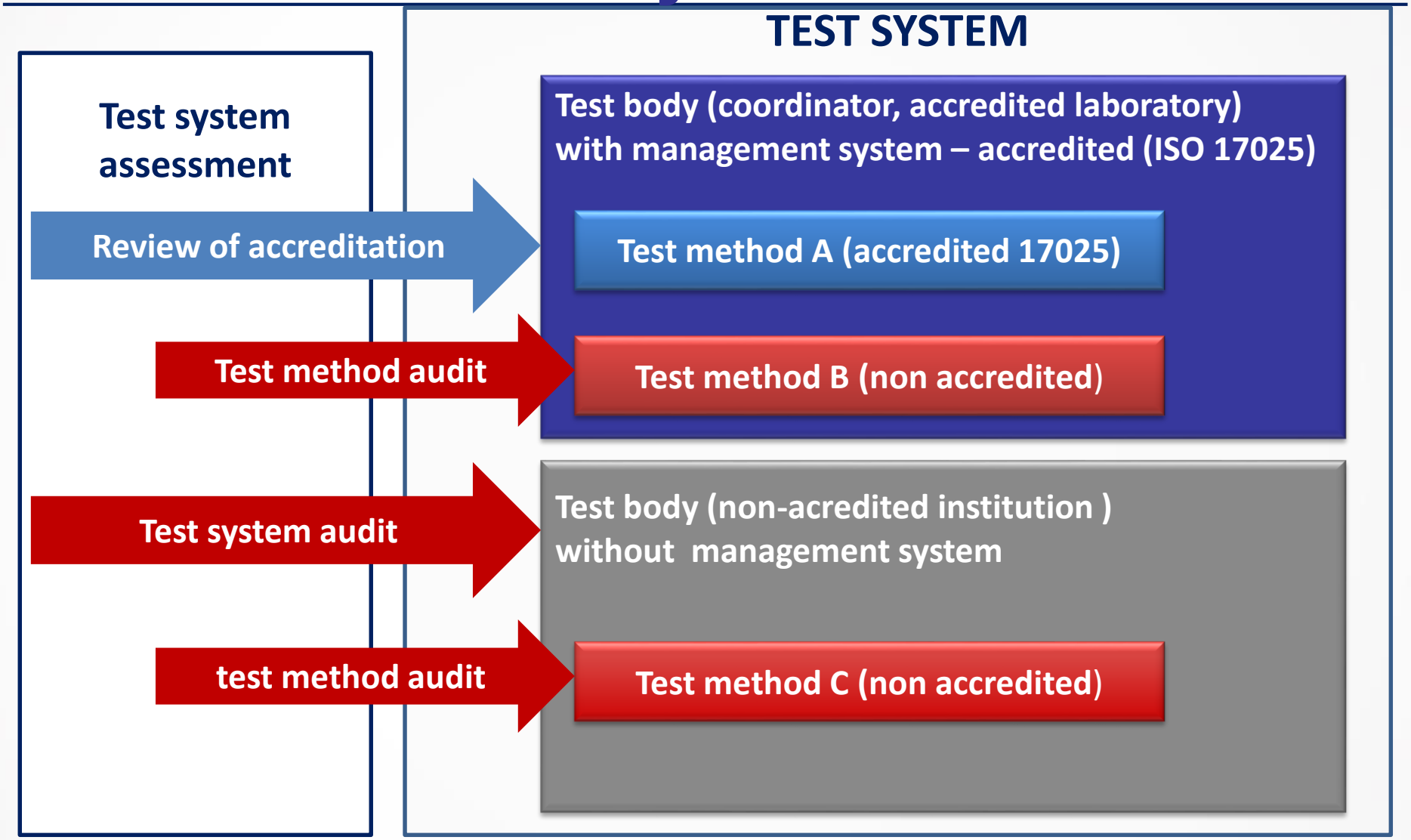
Test system assessment

Requirements:

- Appendix 10 of the GVP includes list of requirements of ISO 17025 that need to be considered by the verfication Body
- Verification Body is responsible for deciding which requirements of ISO/IEC 17025 are relevant for the test body
- They thall be clearly indicated in the specific verification protocol established for the technology to be tested

If the tests consist of **analyses**, the test body performing those analyses shall be accredited to applying ISO/IEC 17025 for the relevant analytical methods.

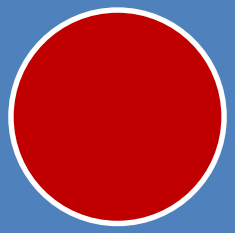
Test system assessment



Test system assessment

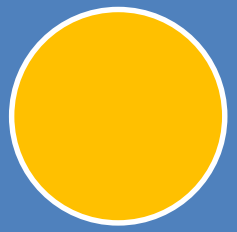
List of ISO 17025 requirements to be considered as part of the quality management and general test requirements of the GVP (Appendix 10)

Appendix 10, of GVP distinguishes **3 types of requirements** in ISO 17025 for the purpose of ETV:



Essential

- should be considered relevant in all circumstances in which they apply



Important

- that may or may not be relevant depending on the nature of the test(s) and of the body performing the tests (considered on a case-by case basis)

Minor

- that may or may not be relevant depending on the nature of the test(s) and of the body performing the tests (considered on a case-by case basis)

Test system assessment

Table 7: Relevance of ISO17025 requirements for the quality of specific tests in the context of EU-ETV

ISO-17025 Requirement	Relevance for EU-ETV			Comment
	Essential	Important	Minor	
4. Management requirements				
4.1 Organization	4.1.1 4.1.3 4.1.4 4.1.5 a) b) d) e) f) g) h) i) k)	4.1.2	4.1.5 c) j) 4.1.6	
4.2 Management system	4.2.1 4.2.5 4.2.6	4.2.2 4.2.7	4.2.3 4.2.4	
4.3 Document control	all			
4.4 Review of requests, tenders and contracts		all		focus should be on the review of the contract(s) applicable to the verification
4.5 Subcontracting of tests and calibrations	all, if applicable			

Test system assessment

4.6 Purchasing services and supplies	4.6.1 to 4.6.3	4.6.4		focus should be on the services and supplies that are used in the tests applicable to the verification
4.7 Service to the customer	4.7.1		4.7.2	
4.8 Complaints		all		
4.9 Control of nonconforming testing and/or calibration work	4.9.1	4.9.2		
4.10 Improvement			all	
4.11 Corrective action	all			Essential when the nonconforming work could reoccur during the tests related to the verification
4.12 Preventive action			all	
4.13 Control of records	all			
4.14 Internal audits		all	-	Includes audits foreseen in C.III
4.15 Management reviews			all	

Test system assessment

5. Technical requirements				
5.1 General	all			
5.2 Personnel	5.2.1 5.2.3 5.2.4 5.2.5	5.2.2		
5.3 Accommodation and environmental conditions	all			
5.4 Test and calibration methods and method validation	all			
5.5 Equipment	all			
5.6 Measurement traceability	all			(whenever applicable)
5.7 Sampling	all			
5.8 Handling of test and calibration items	all			
5.9 Assuring the quality of test and calibration results	all			
5.10 Reporting the results	5.10.1 5.10.5 to 5.10.9		5.10.2 5.10.3 5.10.4	5.10.2 and 5.10.3 are replaced by appendix 7 of the GVP as far as test reports are concerned

Thank you for your attention

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