

Appendix 5: Testing and approval

The purpose of testing is to verify and validate that the deliverables meet the functional and technical requirements, and that the deliverables work as intended and can be implemented. During the testing, focus should be on discovering and preventing errors and ensuring quality of the deliverables and user satisfaction.

This appendix describes test activities with conditions for acceptance and approval. Testing shall be done according to the Customer's established test routines, the guidelines listed in the agreement, in SSA-T, Appendix 5 and according to the deliverables, defined milestones and timeline as set forth in SSA-T, Appendix 4.

The Agreement, clause 2.1.4 Partial deliveries

The acceptance test is the Customer's test of the final system. The main purpose of the test is for the Customer to verify that the terms of the contract are fulfilled, and thereof accept the deliveries.

The Customer will run several acceptance tests during the implementation of the partial deliverables of the system to verify the system itself and the integrations with the Customer's systems.

At the end of the implementation period, the Customer will run an overall end-to-end acceptance test for all of the deliverables.

The Agreement, clause 2.2.2 Delivery and approval of the detailed specification

As the detailed specification is made by the Contractor, this shall be communicated to the Customer well in advance of approval. The Customer shall be given an actual possibility to understand how the proposed deliverables fulfil the requirements and project goals in order to give constructive feedback.

The deadline for approval of the detailed specification is set out in SSA-T, Appendix 4.

The Agreement, clause 2.4.1 Preparations for acceptance tests

The Customer must have access to the Contractor's test execution. This includes access to test material and test tools used by the Contractor. The Customer must also have the opportunity to participate in the Contractor's testing of the configured solution and the integrations. Test status and test reports must be delivered to the Customer on an ongoing basis during the Contractor's testing.

The Contractor must contribute to the preparation of the Customer acceptance test.

Preparation tasks include:

- Training of test users
- Assistance with preparing test scenarios for acceptance testing
- Preparation of user guidelines for the testers
- Installation of the acceptance test version of the software

The Agreement, clause 2.4.2 System ready for acceptance test

Before the system is made available to the Customer, the Contractor shall prepare the system for the relevant environment and test the system's modules and functions as far as possible.

The Contractor shall have carried out system and system integration tests, where the delivered system's components have been tested individually and collectively as a comprehensive solution in accordance with the requirements stated in the agreement. Both the plan and the report from the system and integration test must be presented and approved by the Customer before installation.

Specific criteria for start, execution and completion of the Customer's acceptance tests:

Start criteria

Generally, the following criteria applies to the acceptance test for each partial delivery:

- Contractor's system and integration test and related documentation is approved by the Customer
- Test plan for the acceptance test is produced by the Customer
- Test environment, as described in corresponding test plans, shall be made ready by the Contractor
- Test data shall be ready
- Test cases should cover all requirements (including non-functional requirements) in scope for the partial delivery
- There must be no errors that blocks the acceptance test or significant parts of it

Test completion

As a minimum, the following requirements applies for test completion in connection with a partial delivery:

- All test objects have been tested
- All errors are documented
- An error correction plan has been developed by the Contractor for the remaining errors
- The test process and the test results are documented in a test report

The Agreement, clause 2.4.3 Plan for the Customer acceptance test and the approval period

The Contractor should describe and document their test strategy.

The test strategy shall describe how the Contractor intends to carry out testing of the system throughout the project. The Customer and the Contractor will prepare a common test strategy and detailed test plans after contract signing. The documents must be approved by the Customer.

The test strategy must as a minimum contain:

- Roles and responsibilities of the Contractor and the Customer
- Test approach

- Test environment setup
- Test tools, monitoring and reporting
- Test data approach

[The proposed test strategy for the project shall be described by the Contractor in Appendix 2].

The Agreement, clause 2.4.4 Scope of the acceptance test

A detailed acceptance test plan will be prepared by the Customer after contract signing.

The scope of the Customer acceptance test shall cover all the Customer’s requirements as stated in SSA-T, Appendix 1 to ensure that the deliverables are ready to be put into regular operation in the proposed system.

The Contractor shall make all relevant test documentation from previous tests available in the test tool for reuse.

The Agreement, clause 2.4.5 Performance of the Customer acceptance test

A detailed acceptance test plan, based on the requirements, the milestones and the project and progress plan in SSA-T Appendix 1, Appendix 2 and Appendix 4, will be prepared by the Customer after contract signing.

In connection with the planned acceptance tests, the Customer will run several performance tests to ensure that the system will function as expected, given the estimated number of users.

The estimated needs for performance testing are included in the table below. The plan will be updated by the Customer during the planning of the acceptance tests.

	Approximate number of concurrent users
Q1-Q2, 2020	60.000
Q3-Q4, 2020	120.000
Q1-Q2, 2021	220.000
Q3-Q4, 2021	300.000

It is expected that the Contractor, on request of the Customer, will provide technical and functional assistance in the planning and implementation of the acceptance and performance tests.

The Agreement, clause 2.4.7 Commissioning

All installation preparation and commissioning shall be carried out by the Contractor. The Customer must provide the necessary capacity and expertise to assist the Contractor.

In relation to section 2.4.5 of the SSA-T, the acceptance testing of the deliverables shall meet the acceptance criteria listed below before the commissioning of the system.

Acceptance criteria for the Customer acceptance test include:

- None of type A errors
- None of type B errors
- As few as possible of type C errors

Although a maximum of type C errors is not stated explicitly above, it is expected that the system is of sufficient quality and a manageable number of errors.