



**Software
Test Plan
of Paperless GMP**

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1 Introduction

1.1 Document overview

This document is the software test plan of the Paperless GMP software development project. It contains the list of tests, which are executed during the phases of XXX integration and verification:

- Software Integration tests,
- Software Verification tests.

Some sections of this document are about the organization of tests and may already be described in the project management plan. If so, reference the matching section in the project management plan.

1.2 Abbreviations and Glossary

1.2.1 Abbreviations

Add here abbreviations

1.2.2 Glossary

Add here words definitions

1.3 References

1.3.1 Project References

#	Document Identifier	Document Title
[R1]	ID	Add your documents references. One line per document

1.3.2 Standard and regulatory References

#	Document Identifier	Document Title
[STD1]		Add your documents references. One line per document

1.4 Conventions

Add here conventions

2 Test environment

This section describes the environment of tests, from the point of view of organization and logistics. It is intended to ensure the smooth progress of tests (bugs apart) on each site.

Assumption: there are two test sites: one in your offices and one in customers offices. Duplicate the sub-sections below if there are more than two sites.

2.1 Integration and factory test site

2.1.1 Hardware test Platform

Describe where is located the test platform and opening hours, if necessary.

If by chance there are specific requirements about power supply, room, air conditioning, don't forget them.

Describe the hardware used to test your software in offices. Identify accurately the hardware items:

- If standard computers and servers
 - Hardware configuration
 - Processor
 - Memory
 - Hard disk
 - Network connections
 - Wireless capabilities : Wifi, Bluetooth
- If you use specific hardware (hardware simulator of a machine that you don't have, hardware lended by your customer or a 3rd party, electronic card, a medical device ...)
 - Their purpose
 - Name
 - Manufacturer
 - Configuration, version
 - Firmware version
 - Lot number, serial number
 - Anything else ...
- Consumables
 - CDRom, memory sticks, tapes ...
 - Printer cartridges , paper ...

You may draw a deployment diagram; define a network address plan, electric power supply plan, a room plan ...

2.1.2 Software test tools

Identify accurately the software used for test:

- OS's and service packs
- OS drivers (if specific for you)
- Backup / recovery tools
- Web, blogs, CMS, Databases engines,
- Memory, disk usage, CPU, and network analysers,

- Test coverage or test management tools
- Simulator, data generator of software or hardware that you don't have
- Any tiny (or big) software made by you to do the tests

For simple projects, most of these may be tools provided with the OS (df, du, ps, top, dmesg, taskmanager, control panel ...), or consumer products (MS Office, open office ...).

Describe also the bug repository tool and the way bugs are collected.

2.1.3 Test Data and documentation

Describe the sets of data used during tests. Their identification, structure, content, location, storage;

- input files,
- data files,
- scripts to generate data,
- Output files, log files

Describe which documentation is delivered for the tests (eg Software tests description, Instructions for Use ...), if it is printed or online.

2.1.4 Other test materials

If specific hardware is required

2.1.5 Installation, set-up, and maintenance

If necessary, describe the installation and set-up of the tests platform, before its use. Describe also maintenance operations, if any.

2.1.6 Personnel

If necessary, describe the persons or professional profiles of persons who do the tests, their number, the special skills required.

2.2 Customer/ Field test site

Repeat the pattern above

If your product is tested in an health care centre, or if your customer is a medical device manufacturer, have in mind that you may provide your customer with hardware, software, data and documentation. You may install it and maintain it. His opening hours may be constrained, his personnel shall have specific qualifications ...

If you work directly with praticians (of your medical advisory board, for example), who are going to test your product in their offices, some sub-sections may not be relevant, focus on how tests input/output data are managed, how tests logs and bugs reports are collected.

3 Tests identification

3.1 Testing phases

This test plan defines all tests to verify all requirements of Paperless GMP software in the following successive testing phases :

- Unit tests,
- Integration tests,
- Factory tests,
- End-user or Customer tests.

Change the list to fit your software development project.

Requirements are defined in SRS, ref XXX.

3.2 Test categories

Tests are distributed in categories, depending on the tests performed:

- Risk analysis mitigation tests,
- Human factors engineering tests,
- Main functions,
- Response time,
- Data exchange
- ...

Add your categories to the list, but keep the first line!

3.3 Test progression

The tests are progression depends on the testing phase:

- Unit tests:
 - The testing tool automatically sets the test progression. There is no dependency between unit tests.
- Integration tests: tests are executed according to the following rationale:
 - Integration with interface A alone
 - Integration with interface B alone
 - Integration with interface A and B
- Factory tests: test progression is defined according to the following rationale:
 - Inspection tests are done at first,
 - Tests in category xxx are done afterwards,
 - ...
- End-user tests:
 - Test progression is defined according operational scenarios.

Describe your own rationale.

3.4 Test coverage

Describe tests coverage rationale. Example:

Tests coverage depends on the testing phase:

- Automated tests cover all components of Paperless GMP software.
- Integration tests cover all interfaces requirements of Paperless GMP software.
- Alpha Tests cover all requirements defined in the SRS, excepted
- Beta Tests cover all requirements defined in the SRS,

3.5 Data recording, post-processing, and analysis

Describe how raw test data are recorded, if necessary post processed and analyzed.

For example, manual, automatic, and semi-automatic techniques for recording test results.

It may be a list of small procedures, which are launched before/after a session of tests or before/after a subset of tests.

Describe also where tests data is stored (scm repository, shared directory ...).

3.6 Test identification and content

Each test is unique and contains:

- A unique identifier,
- The tests category,
- A textual description of test objective,
- The traceability of the SRS requirement(s),
- The verification method (I, A, D, T),
- Data recording, post-processing and analysis procedure,
- Assumptions and constraints, if any
- Safety, security and privacy concerns, if any.

The identifier has the following structure:

- Define your own unique identifiers.
- For example, concat the chars "T-", the srs requirement ID being tested, "-", and an incremental number (if more than 1 test is need to verify the requirement).

A test identifier is unique. If a test has to be completely redefined between two versions of this test plan, the previous reference is cancelled and a new identifier is attributed to the test.

4 Planned tests

For each phase, a list of tests is defined with an order of execution if necessary.

4.1 Tests Phase xxx

4.1.1 Tests coverage

The tests of phase xxx cover the following range:

- For example: interfaces and critical requirements
- Requirements of §x and §y of SRS
- A functional domain
- All requirements

4.1.2 Planned tests

Planned tests of phase xxx are listed in the table below. They are executed in the same order.

Fill the table with your tests,

Identifier	Description	M	Category
T-SRS-REQ-010-1	Verify that XXX ...	I	xxx
T-SRS-REQ-010-2	Verify that XXX ...	I	yyy
T-SRS-REQ-020-1	Verify that XXX ...	D	Yyy
T-SRS-REQ-030-1	Verify that XXX ...	D	Yyy

Tests are fully described in the software tests description (STD) document.

4.2 Tests Phase yyy

Repeat the pattern for each phase

4.2.1 Tests coverage

The tests of phase yyy cover the following range:

- For example: interfaces and critical requirements
- Requirements of §x and §y of SRS
- A functional domain
- All requirements

4.2.2 Planned tests

Planned tests of phase xxx are listed in the table below. They are executed in the same order.

Fill the table with your tests,



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Identifier	Description	M	Category
T-SRS-REQ-010-1	Verify that XXX ...	I	xxx
T-SRS-REQ-010-2	Verify that XXX ...	I	yyy
T-SRS-REQ-020-1	Verify that XXX ...	D	Yyy
T-SRS-REQ-030-1	Verify that XXX ...	D	Yyy

Tests are fully described in the software tests description (STD) document.

5 Tests schedules

This either described in the project management plan, or here, or both, if some details were missing when the project management plan was written.

The schedule for conducting the tests is the following:

You may add a graphical representation of the schedule (ganttt, ...) if

Phase xxx:

- Set-up and installation of platform: from yyyy/mm/dd to yyyy/mm/dd
- Installation, copy of tests data
- Pre-tests, personnel training, dry-run
- Tests readiness review
- Tests execution
- Intermediate reviews
- Final test review

Phase yyy:

- Set-up and installation of platform: from yyyy/mm/dd to yyyy/mm/dd
- Installation, copy of tests data
- Pre-tests, personnel training, dry-run
- Tests readiness review
- Tests execution
- Intermediate reviews
- Final test review

6 Requirements traceability

Add here the traceability of SRS requirements.

Identifier	Description	SRS Requirement	M
T-SRS-REQ-010-1	Verify that XXX ...	SRS-REQ-010	I
T-SRS-REQ-010-2	Verify that XXX ...	SRS-REQ-010	I
T-SRS-REQ-020-1	Verify that XXX ...	SRS-REQ-020	D
T-SRS-REQ-030-1	Verify that XXX ...	SRS-REQ-030	D

The verification methods (I,A,D,T) in this table shall match the verification methods of SRS requirements in §3 of SRS.