

Validation report for SIMCA 17

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1 Introduction

The purpose of the **Validation report** is to summarize and document the found differences that require corrective actions from the validation activities performed.

The scope of the validation tasks performed are described in paragraph 2.1 in the Validation plan.

1.1 Notation and notes

'US' followed by a number refers to a User Story in Azure DevOps.

'WI' followed by a number refers to a Work Item in Azure DevOps. May be Bug, User Story, Feature etc.

'VTC' followed by a number refers to a Test Case in Azure DevOps that has been written as a Validation Test Case, VTC. All files referenced here can be found in the New functionality folder in the validation package.

Note: Approving this document includes approval of all subdocuments and results referred to in this document.

2 Validation report summary

The purpose of the **Validation report** is to summarize and document the found differences that needs corrective actions from the validation activities performed and listed in the Validation plan.

The numerical validation of SIMCA 17 was done versus specification using CompareSimcaData.

The CompareSimcaData report is included in the validation package together with the selected models as well as all projects.

The graphical validation versus SIMCA 16 was done on a number of projects and models under Windows 10. The copied/printed plots and lists are included electronically in the validation package.

New functionality was validated versus specification.

2.1 Validation package content

The validation package includes files and folders as follows:

- SIMCA 17 validation documentation pdf, a compilation of validation documents including this document, Validation report SIMCA 17.
- Bugs folder – Lists details for the bugs referenced in the validation package, if any.
- Graphical validation folder – Documents containing the compared graphs, lists and tables.
- Projects folder – SIMCA project files (.usps) used during the validation.
- New functionality folder – New functionality and improvements have been validated and available in a folder named 'New functionality' in the validation package.
- Numerical validation folder – Holding the background to the numerical comparisons.
- Automated regression folder – Results from automated non-numerical tests

3 Validation task results

3.1 Numerical comparison

In the numerical comparison versus specification, using CompareSimcaData and comparing lists in Excel, no differences that require a corrective action were found.

3.2 Graphical comparison

In the graphical comparison of plots and lists versus SIMCA 16, no differences that require a corrective action were found.

3.3 New functionality

New functionality, described in features implemented in user stories closed during the development of SIMCA 17, was validated. The results can be found in **Validation of new functionality summary**, with references to the validation test cases, and the New functionality folder content.



The differences found are listed below:

No.	Feature/Vector	Projects, models	Explanation	Action
3.	Workflow: Spectral data	All	Bug 30395. Defined Spectral ID not used in lists	May be fixed in future release.

4 Verification of installed software

To verify that your license of the software has been correctly installed follow the instruction here:

1. In SIMCA, click **File | Help** and under About SIMCA ..., verify that the version is SIMCA 17.0.0.24543.
2. Open one of the .pdfs in the Graphical validation folder in the full validation of SIMCA.
3. Open the corresponding project in the software, available in the Projects folder in the validation package.
4. Create and compare one of the 2D plots (column, line, or scatter) and one 3D plot (3D scatter, response surface, or wavelet power spectrum). The plots should content wise be identical.

5 Source code

All source code for the final version of a full release is transferred to electronic media and kept both at the Umeå office as well as in the safe of a local bank.

6 Routines

The relevant routines are stored in Azure DevOps in the QualityManual and QualityManagementSystem folders.

7 Bug handling

Work items describing bugs found are stored electronically in Azure DevOps. Bugs that require a corrective action are listed in the tables in paragraph 3.

8 Validation conclusion

All bugs found between the release of specification and the release of SIMCA 17 that remain not fixed were considered unimportant and therefore not fixed.

All differences found during the validation process are described in detail in the **Validation task results** document.

All differences that require a corrective action are listed under paragraph 3, and the WIs referenced to are stored in Azure DevOps and available in the Bugs-folder.

None of the found differences are serious. The used routines together with the validation ensure that SIMCA 17 gives correct results and is reliable.

