Checking Used System Calls (SFC) in STEP 7 Projects for the Upgrade to the new SIMATIC S7-300 CPUs

S7-300 Upgrade Check

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SIMATIC
S7-300 Upgrade Check

Upgrade Check

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1 Automation Task

1.1 Overview

Introduction

Due to their further development, the CPUs with MMC of the SIMATIC S7-300 automation platform exhibit a partially different system response in comparison with their predecessors. This manifests itself mainly in revised system calls (SFCs).

Definition of “new” and “old” S7-300 CPU

In the following text, the new generation S7-300 CPUs (with MMC and without backup battery) are referred to as “new S7-300 CPUs” and the old generation S7-300 CPUs (with MC card and backup battery) as “old S7-300 CPUs”. The following list shows the CPUs that are affected.

“Old” SIMATIC modules (old S7-300 CPUs, product discontinuation in 2003):

Table 1-1

Previous S7-300 CPUs	≤ FW x	Order no.
CPU312 IFM	1.2.1	6ES7312-5AC0x-0AB0
CPU 313	1.2.1	6ES7313-1AD0x-0AB0
CPU 314	1.2.1	6ES7314-1AE0x-0AB0
CPU 314 IFM	1.2.1	6ES7314-5AExx-0AB0
CPU 315	1.2.1	6ES7315-1AF0x-0AB0
CPU 315-2 DP	1.2.1	6ES7315-2AF0x-0AB0
CPU 316-2 DP	1.2.1	6ES7316-2AG00-0AB0
Previous interface modules	≤ FW x	Order no.
IM151-7	1.0.3	6ES7151-7AA00-0AB0

“New” SIMATIC modules (new S7-300 CPUs, delivery approval from 2002 onward):

All SIMATIC S7-300 CPUs with firmware revision level ≥ 2.x, including CPU 314C-2DP, CPU 313C-2DP, CPU 313C-2PTP.

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2 Automation Solution

2.1 Overview

Automation solution

S7-300 Upgrade Check provides you with optimum support when checking the compatibility of your STEP 7 program for the upgrade to a new SIMATIC S7-300 CPU. The tool searches the block folder of your program for used system calls (SFCs). The subsequently displayed test report can be saved as an HTML or .txt file.

Fields of application/customer benefits

S7-300 Upgrade Check offers you the following advantages:

- S7-300 Upgrade Check supports you in checking the compatibility of a STEP 7 program for the upgrade to a new SIMATIC S7-300 CPU.
- The generated test report can be saved for documentation purposes.
- Project Explorer enables the user to navigate through all local projects.
- S7-300 Upgrade Check can be performed in German and English. The language changes automatically when using Change Language in the SIMATIC Manager.

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2.2 Usable hardware and software components

S7-300 Upgrade Check can be used with the following components:

Standard software components

Table 2-1

Component	Qty.	MLFB/order number	Note
SIMATIC STEP 7 Version 5.3	1	6ES7810-4..	Or higher

Additional software components

Operating S7-300 Upgrade Check requires that .NET Framework V2.0 be installed on your PG/PC.

.NET Framework V2.0 will be installed when installing STEP7 Version 5.4 or higher. If you are using STEP7 V5.3, you have to install .NET Framework V2.0 separately. To do so, please go to:

http://www.microsoft.com/downloads

Sample files and projects

The following list contains all files and projects that are used in this example.

Table 2-2

Component	Note
13337010_S7-300_Upgrade_Check_CODE_v11.zip	S7-300 Upgrade Check
13337010_S7-300_Upgrade_Check_DOKU_V11_e.pdf	This document

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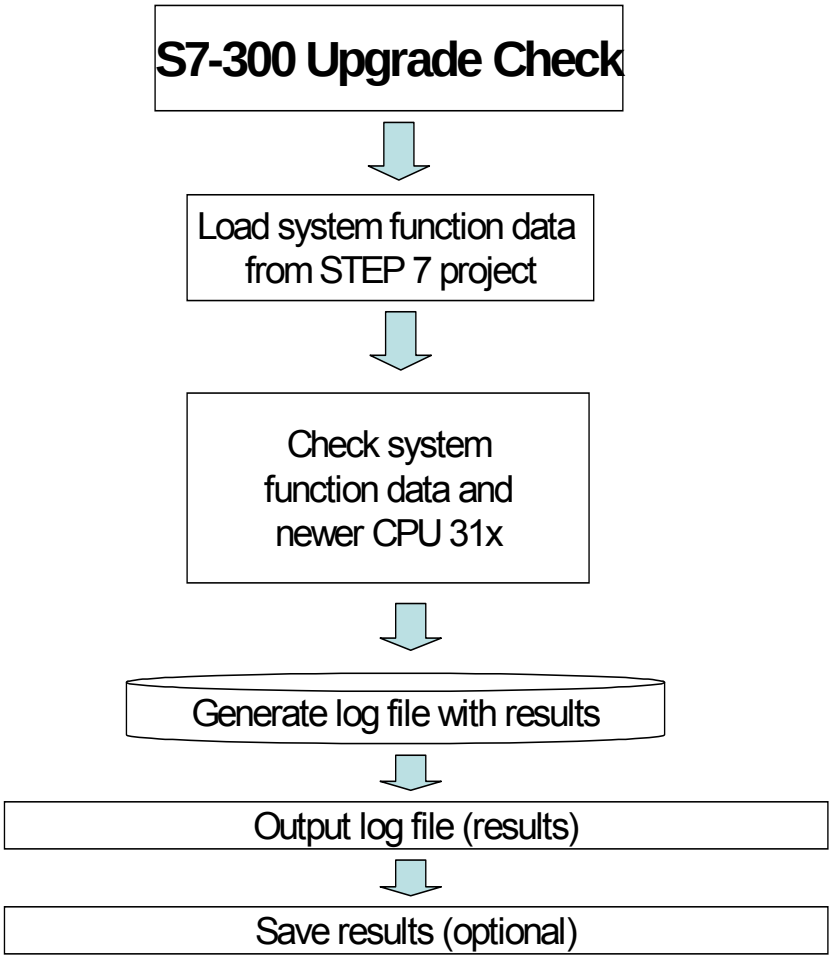
3 Function Mechanisms of this Tool

3.1 Overview

The schematic overview below shows the basic process for checking a STEP7 project.

Figure 3-1



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4 Installation

4.1 Installation of S7-300 Upgrade Check

Software requirements

S7-300 Upgrade Check can be used with the following operating systems:

- MS Windows 7 Ultimate/Professional
- MS Windows XP Professional with SP2 or SP3
- MS Vista 32 bit Ultimate and Business with or without SP1
- MS Windows Server 2003 SP2 Standard Edition with or without R2 as workstation

Installation of S7-300 Upgrade Check

Unzip the 13337010_S7-300_Upgrade_Check_CODE_V11.zip file and run the setup.
After installing, the tool is available in Start->SIMATIC.

Note S7-300 Upgrade Check works with STEP 7 projects. For this reason, STEP 7 must have been installed on the computer. If STEP 7 has not been installed, the installation of S7-300 Upgrade Check will be aborted.

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5 Operation of the Tool

5.1 Overview of the functions of S7-300 Upgrade Check

This chapter describes all functions of S7-300 Upgrade Check.

Generating a test report (analysis)

S7-300 Upgrade Check enables you to have a selected STEP 7 project analyzed. The analysis routine searches the selected project for used system calls (SFCs) and system calls that have been revised for the new CPUs. The test report lists all system calls (SFCs) that are not compatible with the new SIMATIC S7-300 CPUs. It additionally displays a description allowing the user to solve the compatibility problems that were found.

Saving the test report

S7-300 Upgrade Check allows you to save the generated test report if necessary. You can select either an HTML or .txt file.

Project Explorer

Project Explorer is available on the left side of the user interface.

Project Explorer lists all projects in the SIMATIC Manager in a tree view.

In this tree view, the user can navigate to any block folder and start the analysis.

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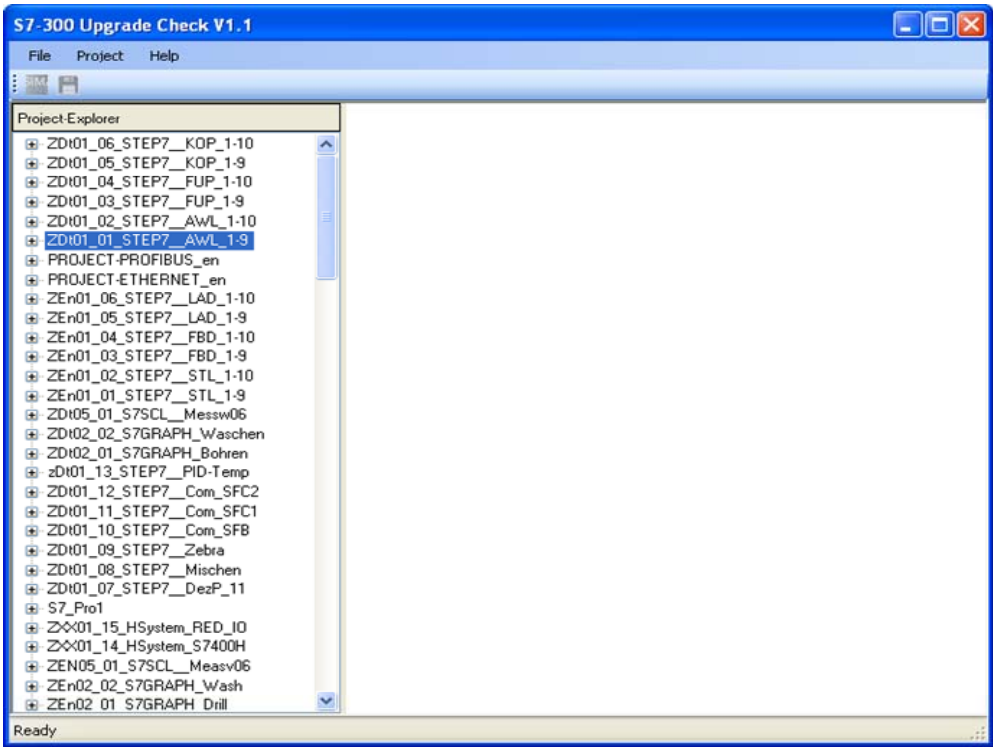
5.2 General information on the user interface

The following sections describe the user interface of S7-300 Upgrade Check from an overall view.

Start screen form

Figure 5-1



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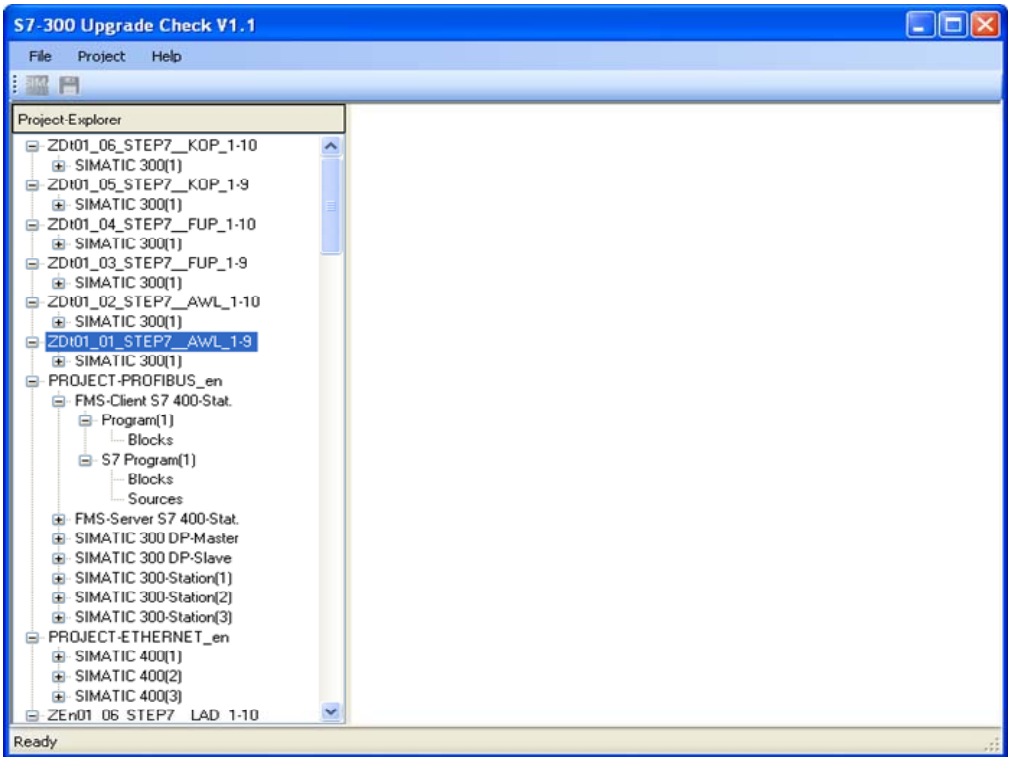
Selecting a block folder

Figure 5-2



In Project Explorer, a block folder of a STEP7 project must be selected for the analysis.

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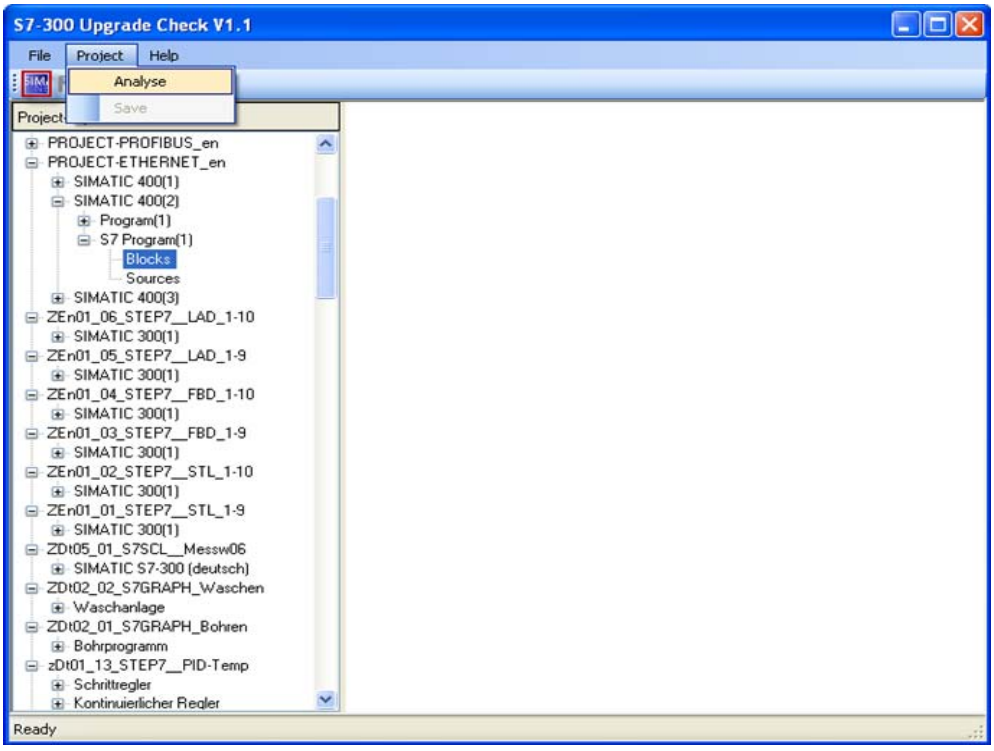
Starting the analysis

Figure 5-3



To start the analysis, use the icon in the toolbar or select the “Project” -> “Analyse” menu option.

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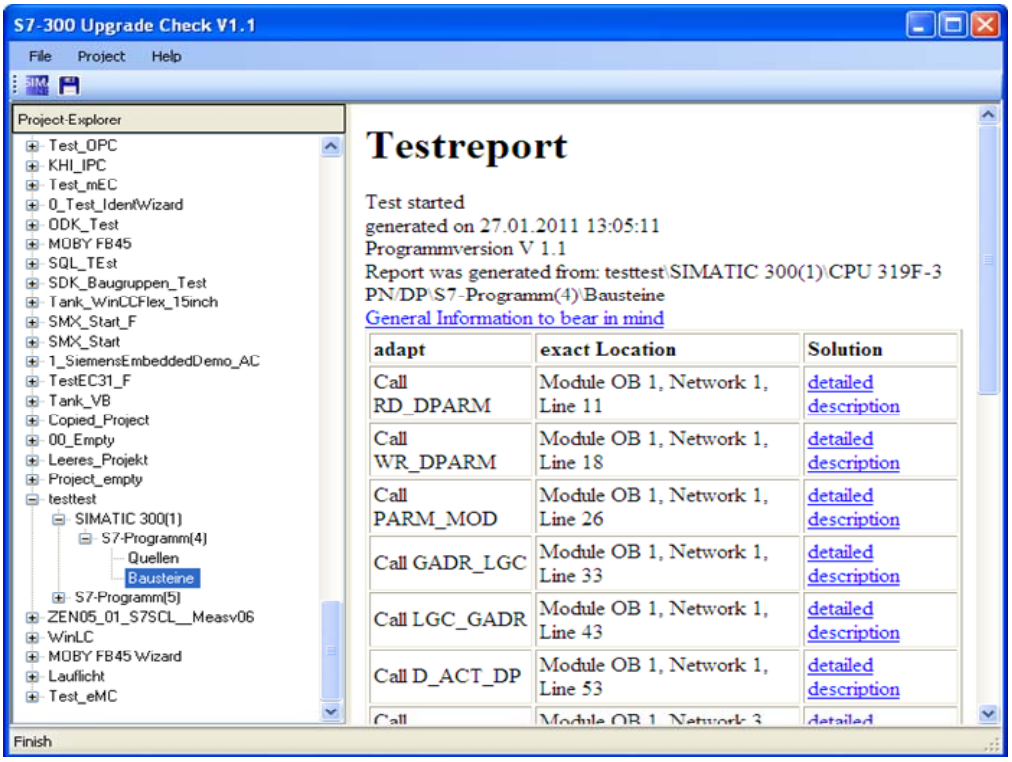
Displaying the test report

Figure 5-4



After the analysis, the test report is displayed in the right browser.

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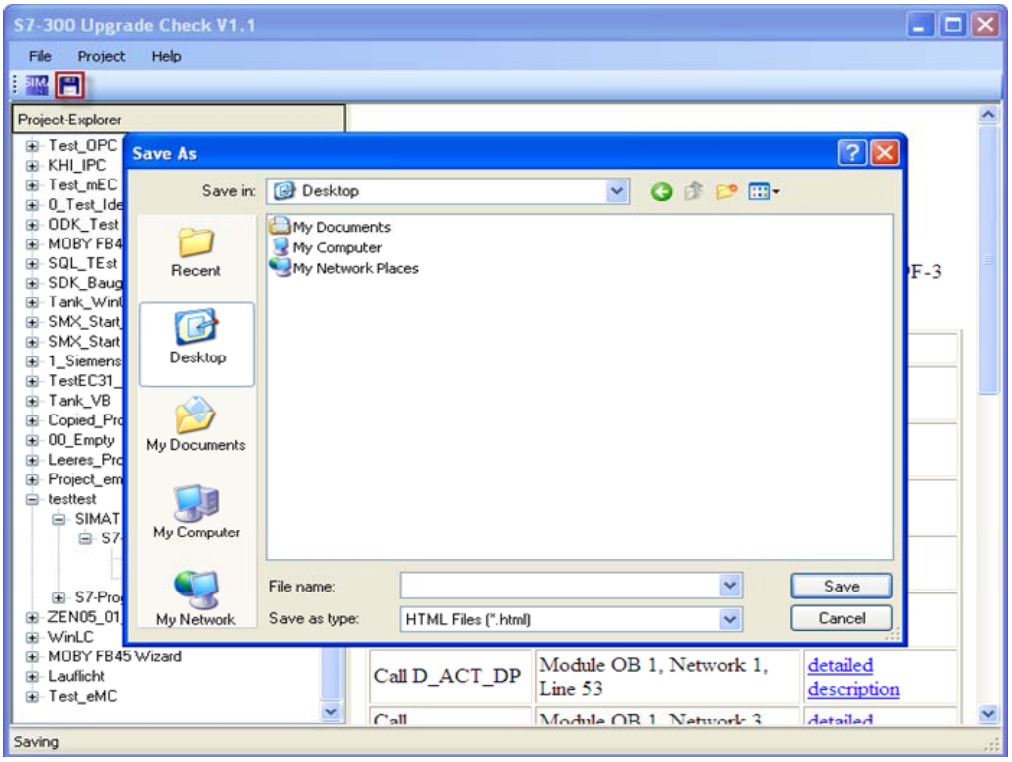
Saving the test report

Figure 5-5



To save the test report, select the “Project” -> “Save” menu option or use the “Save” toolbar icon.

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6 Related Literature

6.1 Internet links

This list is by no means complete and only presents a selection of appropriate information.

Table 6-1

	Topic	Title
\1\	New S7-300 CPUs	http://support.automation.siemens.com/WW/view/en/13406642

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7 History

Table 7-1

Version	Date	Modification
V1.1	01/17/11	First edition

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