

Annex 3 of the Report
on the
Certificate

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Safety-Related Programmable Systems

SIMATIC Safety Matrix

SIMATIC S7 F/FH Systems

Manufacturer:

Siemens AG
Werner-von-Siemens Str. 50
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Report No.: 10042360-A3
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Testing Body:

TÜV Automotive GmbH
TÜV Süddeutschland Group
Automation, Software and Electronics - IQSE

Certification Body:

TÜV Product Service GmbH
TÜV Süddeutschland Group
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Revision Log

Version	Name	Date	Changes/History
0.9	Weber	26.05.2004	Initial draft by JCY
1.0	Beer	03.06.2004	

Safety-Certified and Interference-Free Components.

1 Purpose and Scope

TÜV Automotive GmbH has been contracted by Siemens AG to certify the SIMATIC Safety Matrix Option Package according to SIL 3 of IEC 61508 as part of the Safety-Related Programmable Systems SIMATIC S7 F/FH.

This Annex 3 to the certification report 10042360 supplements the list of software modules shown in Annex 1 chapter 2 (Safety relevant software components) to the same certification report.

This Annex 3 is held independently from Annex 1 in respect of Siemens AG interests.

For details on architectural, configuration and implementation requirements please refer to the Siemens manuals of the SIMATIC S7 F/FH Systems documentation package and the SIMATIC Safety Matrix User Manual.

2 Certification Requirements

2.1 Certification Documentation

Technical Report No. T-100423623

2.2 Functional Safety

The testing for functional safety is to be performed using the following standards and guidelines:

IEC 61508-3, SIL 3	Functional safety: Safety-related systems
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3 Supplementary F-FBs

The F-FBs listed below can be used in addition to F-FBs of the Option Package S7 F/FH Systems V5.2 and higher, including the F-FBs with version number 3.0 (as listed in Annex 1 of the certification report 10042360).

F-FB	Function	Signature	Initial Value Signature
F_CAUSE	Cause Function Block	CE81	053E
F_EFFECT	Effect Function Block	CE6A	EECF
F_INTERS	Intesect Function Block	8937	01F8
F_MATCTL	Matrix Control Function Block	308B	0728
F_STATDB	Status Data Block	5567	0C3E

4 Safety-Relevant Software Components

4.1 SIMATIC Safety Matrix Option Package for S7 F/FH Systems

The SIMATIC Safety Matrix Option Package is a toolkit that reduces configuration, testing, and maintenance time by merging the traditionally separate steps of creating a cause and effect matrix diagram, and configuring the safety system.

Cause and effect matrix methodology is used for defining how and when actions are executed in a safety system. This methodology involves organizing process events into categories of causes and effects, and then linking these causes and effects. The links between the causes and effects are called intersections, which indicate what effects will result from an active cause. From this data, logic can be extracted to create a program for executing a system of responses to contain and prevent events before they cause damage to a process.

The SIMATIC Safety Matrix Option Package requires S7 F/FH Systems V5.2 or higher and F-Library V1.2 or higher.

The Safety Matrix function blocks must be automatically configured by the Safety Matrix Engineering Tool. They are not intended to be placed individually on sheets by the user.

5 Non-Safety-Relevant Software Components

Safety Matrix Engineering Tool	Provides the complete suite of tools to create, configure, compile, and download matrices in the SIMATIC STEP 7 Engineering Station (ES) environment. It additionally supports communication with a runtime Programmable Logic Controller (PLC) to allow testing of the matrix logic.
Safety Matrix Viewer	Supports matrices in the PCS 7 Operating Station (OS) of a PCS 7 WinCC environment. The Safety Matrix Viewer displays the runtime matrix logic in the PLC in a format consistent with that of the Safety Matrix Engineering Tool. Multiple levels of operator matrix functionality are protected by OS user rights.
Safety Matrix Editor	Provides the remote workstation the ability to create and review matrix logic without the need for SIMATIC STEP 7 or the PCS 7 environments. Matrices developed or modified on the Safety Matrix Editor can be conveniently emailed, or otherwise shared with a Safety Matrix Engineering Tool user for incorporation into a SIMATIC project.

Function	Version
Safety Matrix Engineering Tool	V5.2 and higher
Safety Matrix Viewer	V6.0 and higher
Safety Matrix Editor	V5.2 and higher

6 Restrictions

Online forcing, parameter changes, and maintenance overrides follow the "Maintenance Override" guidelines by TÜV. They are the sole responsibility of the operator. The TÜV certificate does not allow output overrides.

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