SIEMENS

Introduction	
Safety notes	2
Product overview	3
Machine Configuration in MindSphere	4
Module description	5
Troubleshooting	6
Appendix	Α

MindSphere

MindApp SINUMERIK Service Assistance

Operating Manual

Valid for controls: SINUMERIK ONE, SINUMERIK 840D sl / SINUMERIK 828D / SINUMERIK PL SINUMERIK Service Assistance V2.5.0.4

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

\land DANGER

indicates that death or severe personal injury will result if proper precautions are not taken.

🕂 WARNING

indicates that death or severe personal injury may result if proper precautions are not taken.

\bigwedge CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

M WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by [®] are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Table of contents

1	Introductio	n	7
	1.1	About SINUMERIK Service Assistance	7
	1.2	About this documentation	8
	1.3 1.3.1	Documentation on the internet MindSphere documentation for apps and solutions	
	1.4	Feedback on the technical documentation	. 12
	1.5	mySupport documentation	. 13
	1.6	Service and Support	. 14
	1.7	OpenSSL	. 16
	1.8	General Data Protection Regulation (GDPR)	. 17
2	Safety note	- IS	. 19
	2.1 2.1.1 2.1.2 2.1.3	Fundamental safety instructions General safety instructions Warranty and liability for application examples Security information	. 19 . 19 . 19
3	Product ove	erview	
	3.1	System concept	. 22
4	Machine Co	onfiguration in MindSphere	. 25
	4.1 4.1.1 4.1.2 4.1.3 4.1.4 4.1.5 4.1.6 4.1.7 4.1.7.1 4.1.7.2 4.1.7.3 4.1.7.4	Aspect configuration for SSA with MMM. Overview Initial creation of Aspects Creating Asset Type Creating Asset. Connecting Machine to Asset Enabling MMM data acquisition Enabling SSA data acquisition Overview Machine model and auto aspect creation and configuration Configuring aspect for "time-based / cyclic trigger" acquisition Configuring aspect "variable value-based trigger" acquisition	. 26 . 27 . 30 . 33 . 35 . 36 . 37 . 37 . 38 . 41
	4.2 4.2.1 4.2.2 4.2.3 4.2.4 4.2.5 4.2.6 4.2.6.1 4.2.6.2	Aspect configuration for SSA with BFC Gateway Overview Requirements Checking the current status of middleware (logic) Creating aspects in Mindsphere Creating the asset type "bfc_ssa_sinumerik" Connecting a new machine to SSA Creating a new asset of the type "bfc_ssa_sinumerik" Generating connection information of the assets	. 50 . 51 . 51 . 52 . 52 . 55 . 56

	4.2.6.3	Creating a MindSphere gateway for SSA	
	4.2.7	Configuring the BFC client data acquisition	
	4.2.8	Creating and saving a machine identity	71
5	Module d	lescription	73
	5.1	Overview	73
	5.2	Handling of identSNAPSHOT file	74
	5.2.1	Overview	
	5.2.2	Creating identSNAPSHOT file on SINUMERIK controller	
	5.2.3	Uploading identSNAPSHOT file to Mindsphere	
	5.2.4	Limitations on file upload	
	5.2.5	Uploading identSNAPSHOT file via Fleet Manager	80
	5.3	Asset Selection	
	5.3.1	New Asset Selection	
	5.3.2	Billing	
	5.3.2.1	Billing systems	
	5.3.2.2	Activation page	
	5.4	Machine Transparency	
	5.4.1	Overview	
	5.4.2 5.4.3	Basic Information	
	5.4.3 5.4.4	Hardware Components GSP (Global Service Platform)	
	5.4.5	Logbook and Licenses	
	5.4.5	Software Components	
	5.4.7	Change Protocol	
	5.5	Machine Condition	
	5.5.1	Overview	
	5.5.2	Process Data	
	5.5.3	Security Level	111
	5.5.4	Operating Time	113
	5.5.5	Boot Monitoring	114
	5.6	Machine Error Analysis	
	5.6.1	Machine Error Analysis for an asset with ClosedAlarms Aspect	117
	5.6.1.1	Alarms	
	5.6.1.2	Triggering Alarms for Disturbances	125
	5.6.1.3	Alarm Trend	
	5.6.2	Machine Error Analysis for an asset without ClosedAlarms Aspect	
	5.6.2.1	Overview	
	5.6.2.2	Current Alarms	
	5.6.2.3	Alarm History	
	5.6.2.4	Triggering Alarms for Disturbances	
	5.6.3 5.6.4	MMM & SSA Interlinking Failure Analysis	
6		nooting	
		-	
Α	••		
	A.1	Data Acquisition only in MindSphere	
	A.2	Data Acquisition in MMM - "Time-based / cyclic trigger"	147

Index		159
Glossary		157
A.6	Supplementary documentation	155
A.5	Clarification of machine variable parameters	154
A.4	Aspect configuration with MMM - minimum aspect requirements	152
A.3	Data Acquisition in MMM - "Variable value-based trigger"	151

Introduction

1.1 About SINUMERIK Service Assistance

SINUMERIK Service Assistance supports service experts in performing fault analysis on machine tools with SINUMERIK 828D/840D/ONE controllers. Three different options are available to individualize the level of support.

- Machine Transparency identifies all currently installed hardware components as well as firmware and software versions and their changes.
- Machine Condition enables the cyclic recording of extended status data on the control and drive technology and its selective evaluation.
- Error Analysis efficiently identifies and evaluates fault states and disturbances in machine tools based on intelligent filter options and a user-friendly interface.

1.2 About this documentation

1.2 About this documentation

Content

This manual describes the administration and configuration of the MindSphere application **SINUMERIK Service Assistance (SSA).**

Below information is described in detail:

- How to configure Manage MyMachine File Upload functionality to activate SSA Machine Transparency
- How to administrate / configure aspects and assets
- How to use SINUMERIK Service Assistance functionality

Target group

This publication is intended for machine operators, plant operators.

Standard scope

This documentation only describes the functionality of the standard version. This may differ from the scope of the functionality of the system that is actually supplied. Please refer to the ordering documentation only for the functionality of the supplied drive system.

It may be possible to execute other functions in the system which are not described in this documentation. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

For reasons of clarity, this documentation cannot include all of the detailed information on all product types. Further, this documentation cannot take into consideration every conceivable type of installation, operation and service/maintenance.

The machine manufacturer must document any additions or modifications they make to the product themselves.

Websites of third-party companies

This document may contain hyperlinks to third-party websites. Siemens is not responsible for and shall not be liable for these websites and their content. Siemens has no control over the information which appears on these websites and is not responsible for the content and information provided there. The user bears the risk for their use.

1.3 Documentation on the internet

1.3.1 MindSphere documentation for apps and solutions

MindSphere applications provide you with the functionality needed to solve your various industrial IoT use cases. You can find an overview of documentation for all MindSphere apps and solution on the MindSphere platform.

See also

MindSphere documentation (https://siemens.mindsphere.io/en/docs/apps-and-solutions)

Comprehensive documentation about the functions provided in SINUMERIK ONE Version 6.13 and higher is provided in the Documentation overview SINUMERIK ONE (<u>https://support.industry.siemens.com/cs/ww/en/view/109768483</u>).



You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- User: Operating
- User: Programming
- Manufacturer/Service: Functions
- Manufacturer/Service: Hardware
- Manufacturer/Service: Configuration/Setup
- Manufacturer/Service: Safety Integrated
- Information and training
- Manufacturer/Service: SINAMICS

1.3 Documentation on the internet

Comprehensive documentation about the functions provided in SINUMERIK 840D sl Version 4.8 SP4 and higher is provided in the Documentation overview SINUMERIK 840D sl (<u>https://support.industry.siemens.com/cs/ww/en/view/109766213</u>).



You can display the documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- User: Operating
- User: Programming
- Manufacturer/Service: Functions
- Manufacturer/Service: Hardware
- Manufacturer/Service: Configuration/Setup
- Manufacturer/Service: Safety Integrated
- Manufacturer/Service: SINUMERIK Integrate/MindApp
- Information and training
- Manufacturer/Service: SINAMICS

Comprehensive documentation about the functions provided in SINUMERIK 828D Version 4.8 SP4 and higher is provided in the 828D documentation overview (<u>https://support.industry.siemens.com/cs/ww/en/view/109766724</u>).



You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- User: Operating
- User: Programming
- Manufacturer/Service: Configuring
- Manufacturer/Service: Commissioning
- Manufacturer/Service: Functions
- Manufacturer/Service: Safety Integrated
- SINUMERIK Integrate/MindApp
- Info & Training

1.4 Feedback on the technical documentation

1.4 Feedback on the technical documentation

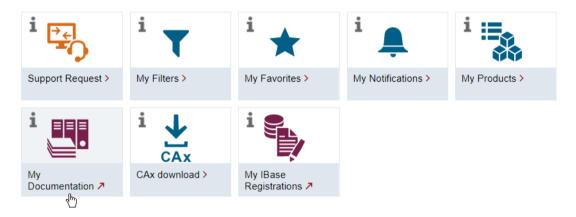
If you have any questions, suggestions or corrections regarding the technical documentation which is published in the Siemens Industry Online Support, use the link "Provide feedback" which appears at the end of the entry.

1.5 mySupport documentation

With the "mySupport documentation" web-based system you can compile your own individual documentation based on Siemens content, and adapt it for your own machine documentation.

To start the application, click on the "My Documentation" tile on the mySupport homepage (<u>https://support.industry.siemens.com/cs/my?lc=en-WW</u>):

mySupport Links and Tools



The configured manual can be exported in RTF, PDF or XML format.

Note

Siemens content that supports the mySupport documentation application can be identified by the presence of the "Configure" link.

1.6 Service and Support

1.6 Service and Support

Product support

You can find more information about products on the internet: Product support (<u>https://support.industry.siemens.com/cs/ww/en/</u>) The following is provided at this address:

- Up-to-date product information (product announcements)
- FAQs
- Manuals
- Downloads
- Newsletters with the latest information about your products
- Global forum for information and best practice sharing between users and specialists
- Local contact persons via our Contacts at Siemens database (→ "Contact")
- Information about field services, repairs, spare parts, and much more (\rightarrow "Field Service")

Technical support

Country-specific telephone numbers for technical support are provided on the internet at address (<u>https://support.industry.siemens.com/cs/ww/en/sc/4868</u>) in the "Contact" area.

If you have any technical questions, please use the online form in the "Support Request" area.

Training

You can find information on SITRAIN at the following address (<u>https://www.siemens.com/</u> sitrain).

SITRAIN offers training courses for automation and drives products, systems and solutions from Siemens.

Siemens support on the go





With the award-winning "Siemens Industry Online Support" app, you can access more than 300,000 documents for Siemens Industry products – any time and from anywhere. The app can support you in areas including:

- Resolving problems when implementing a project
- Troubleshooting when faults develop
- Expanding a system or planning a new system

Furthermore, you have access to the Technical Forum and other articles from our experts:

- FAQs
- Application examples
- Manuals
- Certificates
- Product announcements and much more

The "Siemens Industry Online Support" app is available for Apple iOS and Android.

Data matrix code on the nameplate

The data matrix code on the nameplate contains the specific device data. This code can be read with a smartphone and technical information about the device displayed via the "Industry Online Support" mobile app.

1.7 OpenSSL

1.7 OpenSSL

This product can contain the following software:

- Software developed by the OpenSSL project for use in the OpenSSL toolkit.
- Cryptographic software created by Eric Young.
- Software developed by Eric Young

You can find more information on the internet:

- OpenSSL (<u>https://www.openssl.org/</u>)
- Cryptsoft (<u>https://cryptsoft.com/</u>)

1.8 General Data Protection Regulation (GDPR)

Siemens observes standard data protection principles, in particular the data minimization rules (privacy by design).

For this product, this means:

The product does not process or store any personal data, only technical function data (e.g. time stamps). If the user links this data with other data (e.g. shift plans) or if he/she stores person-related data on the same data medium (e.g. hard disk), thus personalizing this data, he/she must ensure compliance with the applicable data protection stipulations.

1.8 General Data Protection Regulation (GDPR)

Safety notes

2.1 Fundamental safety instructions

2.1.1 General safety instructions

\Lambda warning

Danger to life if the safety instructions and residual risks are not observed

If the safety instructions and residual risks in the associated hardware documentation are not observed, accidents involving severe injuries or death can occur.

- Observe the safety instructions given in the hardware documentation.
- Consider the residual risks for the risk evaluation.

M WARNING

Malfunctions of the machine as a result of incorrect or changed parameter settings

As a result of incorrect or changed parameterization, machines can malfunction, which in turn can lead to injuries or death.

- Protect the parameterization against unauthorized access.
- Handle possible malfunctions by taking suitable measures, e.g. emergency stop or emergency off.

2.1.2 Warranty and liability for application examples

Application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. Application examples do not represent specific customer solutions, but are only intended to provide support for typical tasks.

As the user you yourself are responsible for ensuring that the products described are operated correctly. Application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.

2.1.3 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

2.1 Fundamental safety instructions

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit

https://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

https://www.siemens.com/cert.

Further information is provided on the Internet:

Industrial Security Configuration Manual (<u>https://support.industry.siemens.com/cs/ww/en/</u>view/108862708)

MARNING WARNING

Unsafe operating states resulting from software manipulation

Software manipulations, e.g. viruses, Trojans, or worms, can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a holistic, state-of-the-art industrial security concept for the installation or machine.
- Make sure that you include all installed products into the holistic industrial security concept.
- Protect files stored on exchangeable storage media from malicious software by with suitable protection measures, e.g. virus scanners.
- On completion of commissioning, check all security-related settings.

Product overview

SINUMERIK Service Assistance is a MindSphere Application which offers error analysis and troubleshootings for SINUMERIK controllers.

Based on information about the current state of the machine, as well as the record and evaluation of historical data, detailed statements can be made about the customer's situation. As a result, the service call required in the event of a fault can be carried out more efficiently, which enables a reduction in machine downtimes at customer's side.

SINUMERIK Service Assistance offers three digital services:

- Machine Transparency
- Machine Condition
- Machine Error Analysis

3.1 System concept

3.1 System concept

Boundary conditions for Manage MyMachines (MMM) based connectivity

- MindSphere applications already purchased:
 - ManageMyMachines
 - SSA
- MindSphere access exists (IoT tenant).
- Machine is connected via ManageMyMachines.
- MMM Asset Manager Variable Toggles are activated.
- Sinumerik Machine is connected via SINUMERIK Integrate Client (SI client).
- Each application (MMM, SSA) has its own variable set of standard aspects and all must be configured.

Boundary conditions for Brownfield Connectivity Services

- BFC Client and Gateway must be installed and a connection must be established.
- Tenant is available and SSA is purchased and provisioned.
- On the BFC Gateway, the middleware "SSA Service" and "Scriptlogic" are active for SSA gateway
- BFC Gateway must be connected for Mindsphere.

Boundary conditions for Manage MyMachines (MMM) based connectivity considering IOT Value Plan

- MindSphere applications already purchased:
 - ManageMyMachines
 - SSA
- MindSphere access exists (IoT tenant).
- Machine is connected via ManageMyMachines.
- MMM Asset Manager Variable Toggles are activated.
- Sinumerik Machine is connected via SINUMERIK Integrate Client (SI client).
- Each application (MMM, SSA) has its own variable set of standard aspects and all must be configured.

Boundary conditions for Manage MyMachines (MMM) based connectivity considering Package Builder Plan

- Package Builder plan for the SSA package basic is purchased.
- Package Builder plan for the SSA package upgrade for MMM is purchased for additional assets.

- ManageMyMachines application is individually purchased.
- Machine is connected via ManageMyMachines.
- MMM Asset Manager Variable Toggles are activated.
- Sinumerik Machine is connected via SINUMERIK Integrate Client (SI client).
- Each application (MMM, SSA) has its own variable set of standard aspects and all must be configured.

Boundary conditions for Brownfield Connectivity Services connectivity considering IOT Value Plan

- BFC Client and Gateway must be installed and a connection must be established.
- Tenant is available and SSA is purchased and provisioned.
- On the BFC Gateway, the middleware "SSA Service" and "Scriptlogic" are active for SSA gateway.
- BFC Gateway must be connected for Mindsphere.

Boundary conditions for Brownfield Connectivity Services connectivity considering Package Builder Plan

- Package Builder plan for the SSA package basic is purchased.
- Package Builder plan for the SSA package upgrade for BFC is purchased for additional assets.
- Tenant is available and SSA is purchased and provisioned.
- On the BFC Gateway, the middleware "SSA Service" and "Scriptlogic" are active for SSA gateway.
- BFC Gateway must be connected for Mindsphere.

Further information

You can find further information regarding the package builder plans online:SINUMERIK Service Assistance Package (<u>https://siemens.mindsphere.io/content/dam/mindsphere/terms/pdf/</u> <u>App_SINUMERIKServiceAssistancePackage_ProductSheet_SpecificTerms_v1.0.pdf</u>) Product overview

3.1 System concept

Machine Configuration in MindSphere

Machine Configuration in MindSphere

The following chapter describes the necessary steps for connecting a machine to the MindApp **"SINUMERIK Service Assistance (SSA)"**.

Machine connection to MindSphere

Note

For machine connection to MindSphere please refer to MMM Function Manual, Chapter 3 "Setting up the SINUMERIK control system for Manage MyMachines" (<u>https://</u><u>documentation.mindsphere.io/resources/html/manage-my-machine/en-US/index.html</u>).

4.1 Aspect configuration for SSA with MMM

4.1.1 Overview

By Using the MindSphere Tool "Asset Manager" the following Aspects have to be initially configured:

- SINUMERIK_CSPROTECTIONLEVEL
- SINUMERIK_CSRESULTS
- SINUMERIK_CSMACHINESTATUS
- SINUMERIK_TRIGGERINGALARMS

Note

For configuration details of the Aspects see Data Acquisition only in MindSphere (Page 145).

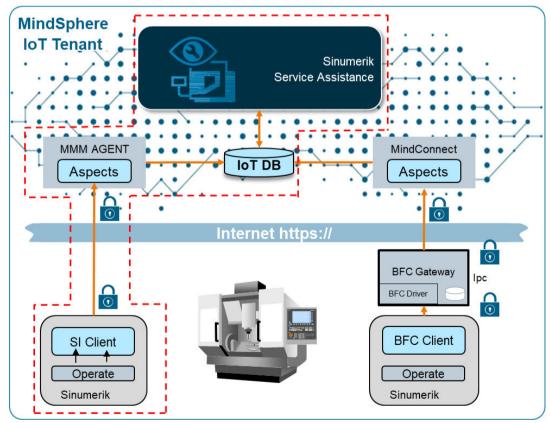


Figure 4-1 Overview aspect configuration

Aspect requirements

Aspects Asset Selec-Machine Machine Machine Er-Transparency Condition ror Analysis tion Mandatory AgentOnlineStatus Mandatory Mandatory Alarms Mandatory CH1 BasicConfig Mandatory _ Mandatory CH1 MachineStatus Mandatory _ Mandatory Mandatory CSM AX01 _ Optional CSM_AX02 Optional _ _ _ CSM AX03 Optional _ _ _ CSM_AX04 Optional CSM_AX05 _ _ Optional _ CSM General Info _ Mandatory _ CSM_SP01 _ Mandatory MachineModel Mandatory SINUMERIK_CSALARMREACTION Mandatory _ _ SINUMERIK CSMACHINESTATUS Mandatory Mandatory _ SINUMERIK_CSPROTECTIONLEVEL Mandatory _ Mandatory SINUMERIK CSRAW _ Mandatory Mandatory SINUMERIK_CSRESULTS _ _ Mandatory SINUMERIK_TRIGGERINGALARMS Mandatory _ _ Mandatory Startup Mandatory

The minimum aspect requirements are listed following table:

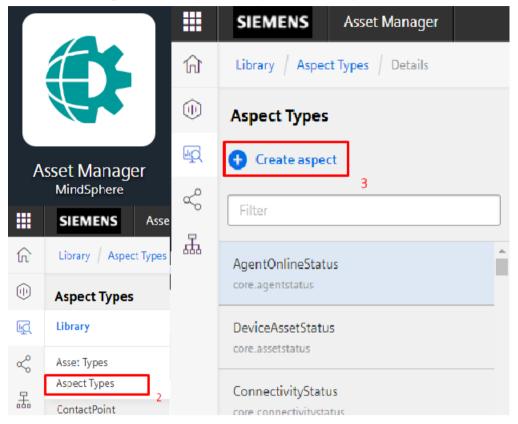
4.1.2 Initial creation of Aspects

Procedure

Repeat the following procedure for all aspects.

Here as an example the Aspect SINUMERIK_CSMACHINESTATUS is created.

1. Load "Asset Manager", select "Aspects" and press "Create aspect".



2. Edit Name and Description.

	SIEMENS Asset Manager					
俞	Library / Aspect Types / Create aspect					
Ę	Create aspect					
Š	 Aspect information 					
놊	Type ID: mmmdev.SINUMERIK_CSMACHINESTATUS					
	Type ID cannot be changed after creation					
	Name: *					
	SINUMERIK_CSMACHINESTATUS					
	Description:					
	Compressed MachineStatus for SSA App					
	219 characters left					

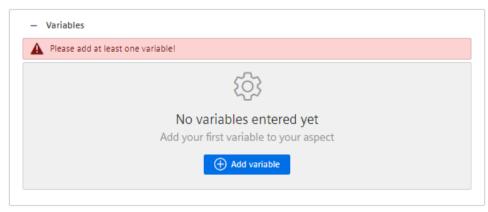
3. Choose category "Dynamic".

C	Choose category:						
	6		The category of an aspect cannot be changed afterwards.				
(ynamic e aspect is used for time-series data				

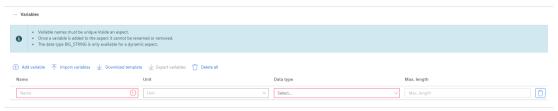
The aspect is used for static data

4. Press "Add variable".

Static



5. Press "Add variable".



6. If required, add further variables and enter Name, Data type and Unit.

🕂 Add variable

7. Press "Save".



4.1.3 Creating Asset Type

Procedure

An Asset Type for every single Machine should be created.

- 1. Load "Asset Manager" and select "Types".
- 2. Expand "BasicDevice".
- 3. Expand "BasicSinumericAsset".

- SIEMENS Asset Manager 俞 Library Asset Types Details \bigcirc BasicAsset ĿQ 🕂 Create type 5 Ś BasicDevice × Asset Manager MindSphere 品 Core types SIEMENS BasicDevice 俞 Library Asset Typ core.basicdevice 3 $(\mathbf{0})$ **BasicSinumerikAsset** BasicAsset core.basicsinumerikasset Library ШQ ∽ Asset Types 2 Aspect Types 놊
- 4. Press "Create type".

5. Edit "Name" and "Description".

— Туре і	nformation		
Parent type	:		
core.basic	device		
Parent type du	ue to hierarchical order		
Name: *			
SINUMERI	K_MACHINE_TYPE_01		
Type ID: * mmmdev. [Type ID canno Description	SINUMERIK_MACHINE_TYPE_01 t be changed after creation		
	onnecting my SINUMERIK Machine	o SSA	
208 characters	s left		

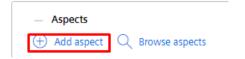
6. Press "Save".

Save	Cancel

7. Select the just created Asset Type and press "Edit type".

	SIEMENS Asset Manager							
নি	Library / Asset Types / Details							
٠	< Back	core.basicasset / core.basicde	rice / core.basicsinumerikasset / mmmdev.SINUI	MERIK_MACHINE_TYPE_01			/ 🕀 🛈	
R	BasicSinumerikAsset							
				E_01				
옯	SINUMERIK_MACHINE_TYPE_01 ×	Description						
	* Own types	Description Type for connecting my SNUJARENK Muchine to SSA						
	SRUMERK_MACHINE_TYPE_01 General Usages							
		Variables						
		Name Unit Data type Max. length Default value						
		manufacturer - STRING 255 - Winnerse						

8. Scroll down to the Aspects and press "Add aspect".



- 9. Select the following Aspects from the list and add them one after the other:
 - SINUMERIK_CSPROTECTIONLEVEL
 - SINUMERIK_CSRESULTS
 - SINUMERIK_CSMACHINESTATUS
 - SINUMERIK TRIGGERINGALARMS

10. The Name should not be changed, it will be filled automatically.

Name +	Aspect	Category		
> SINUMERIK_CSMACHINESTATUS	mmmdev.SINUMERIK_CSMACHINESTATUS	Dynamic	Defined	1
> SINUMERIK_CSPROTECTIONLEVEL	mmmdev.SINUMERIK_CSPROTECTIONLEVEL	Dynamic	Defined	7
> SINUMERIK_CSRESULTS	mmmdev.SINUMERIK_CSRESULTS	Dynamic	Defined	7
> SINUMERIK_TRIGGERINGALARMS	mmimdev.SINUMERIK_TRIGGERINGALARMS	Dynamic	Defined	7

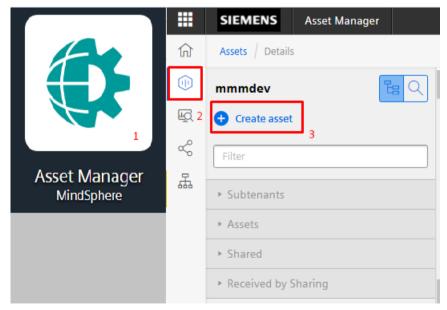


4.1.4 Creating Asset

Procedure

An Asset for every single Machine should be created.

- 1. Load "Asset Manager" and select "Assets".
- 2. Press "Create asset".



3. Select previously created Asset Type and press "Create".

	SIEMENS Asset Manager		powered by MindSphere [→
ᡬ	Assets / Details / Create asset		
۲	Select type		
ф. С	< Back SINUMERIK_MACHINE ×		
恭	SINUMERIK_MACHINE_TYPE_01 mmmdev.SINUMERIK_MACHINE_TYPE_01	Type for connecting my SINUMERIK Machine to SSA	
»			Create

4. Edit "Name" and "Description".

Add asset

Type ID:				
mmmdev.SINUM	RIK_MACHINE_T	YPE_01		
Selected type of asset	annot be changed			
Name: *				
vanie.				
SSA_840D_1				
	ng my SINUMERI	K Machine to S	54	
SSA_840D_1 Description:	ng my SINUMERI	K Machine to S	54	

5. Select "Performance" as classification.

Ple	ease classify your asset:
	The classification of an asset cannot be changed afterwards.
0	Performance Use this option to represent your assets in the field with timeseries resolution of milliseconds
0	Simulation Use this option to represent simulation data of an asset with timeseries resolution up to microseconds

Street:		
Yakacık, 111		
Postal code:	City:	
34870	Istanbul	
Country:		Region:
Turkey		Marmara
Latitude:	Longitude:	
40.899204	29.202128	
Time zone:		
Asia/Istanbul	>	$\langle \vee$

6. Enter the location and time zone information.

7. Press "Save".

Save	Cancel

4.1.5 Connecting Machine to Asset

Procedure

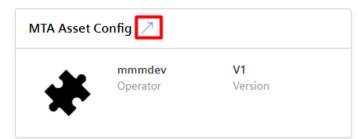
Note

You can find further information in MMM Function Manual, Chapter 3 "Setting up the SINUMERIK control system for Manage MyMachines" (<u>https://documentation.mindsphere.io/resources/</u><u>html/manage-my-machine/en-US/index.html</u>).

- 1. Load "Asset Manager" and select "Assets".
- 2. Select your previously created Asset.

	SIEMENS Asset Manager		B powered by MindSphere
ណ៍	Assets / Details		
0	mmmdev 🔓 🔍	mmmdev / SSA_840D_1	Ø 🕀 …
¢,	Create asset	© SSA_840D_1	
«	SSA <u>_840D_1</u> 1 ×	SSA_OHUD_I Grandessa deed alema O Ecosyltetin O Performance	
Å.	* Assets	Description Doc Asset	Location katalyeniden
	SSA_840D_1		regiontest 22 Istanbul, countrytest
			🖄 Show in map

3. Press "MTA Asset Config".



4. On the "Connectivity" tab accepts the license conditions.

III SIEMENS Annet Manager		MindSphere [+
MTA Asset Config # Huge SSA_8400_1 SHU	ERR, LARCINE, THE DI	Oms 🛞
	Converbiny Application	
	Constant Constant	
	Debaseling i Officianing	
	I hereby accept the conditions which can be downloaded under the following lost. Conditions	
	Connect SNUMPERMITS Mith Sphere	

5. Then press "Connect SINUMERIK with MindSphere" to onboard the Machine.

Connect SINUMERIK with MindSphere

6. The file "onboard.key" will be generated and downloaded.



7. Please consult "MMM Function Manual" for details how to onboard your Machine.

4.1.6 Enabling MMM data acquisition

Procedure

1. Open Shopfloor Management Application from MindSphere Launchpad.

	III 5	EMENS Shopfore MgmL App.		
7 .	.16	←	Shopfloor Management Application	
	Shapfoor	\$\$A_8400_1	Application Advanced	
*	Q Gateriae	SSA, 8400_1 minorias: Distalistic Juscienz, THC_St Auer for connecting my SHLARSHIC Suppose to SIA	Manage MyMachines	
Shopfloor Management App swops 1	2 34	2	Manage MyMachines Enable/ Databa access for Manage MyMachines application	
	© 300 c		3	
	90 534		Manage MyMachimes /Spindle-Monitor Enater / Diatter access for Manage MyMachines. / Bpindle-Manter application	
	0			

2. Search and select your previously created Asset.

- 3. On the Manage MyMachines tab, enable the Manage MyMachines switch.
- 4. Choose a Charging Model and press "Confirm".

S Charging Model —	Confirmation -	Subscript	ion Cotions	Save
1 month enable	blement (charged month	nly in arrears)		
O 12 months er	nablement (charged anr	nually upfront)		
			No Thanks	Confirm

4.1.7 Enabling SSA data acquisition

4.1.7.1 Overview

The following describes how to configure the required aspects so that SSA can successfully capture and process the machine data. Here is an example of the procedure described. Details of the configuration are listed in Data Acquisition in MMM - "Time-based / cyclic trigger" (Page 147) and Data Acquisition in MMM - "Variable value-based trigger" (Page 151).

Note

For assets created from type "basicsinumerikasset", shoopfloor aspect configuration will be automated with activation. For more detailed information, see chapter Machine model and auto aspect creation and configuration (Page 38).

The following aspects must be configured via MMM, as "Time-based / cyclic trigger":

- SINUMERIK_CSRAW
- CSM_General_Info

The following aspects for the Axes and Spindles must be configured via MMM, as "Timebased / cyclic trigger":

- CSM_AX01, CSM_AX02, ... (depending on the number of axes)
- CSM_SP01, ... (depending on the number of spindles)

The following aspects must be configured via MMM, as "Variable value-based trigger":

SINUMERIK_CSALARMREACTION

See also

Function Manual Manage MyMachines (<u>https://documentation.mindsphere.io/resources/html/</u> manage-my-machine/en-US/index.html)

4.1.7.2 Machine model and auto aspect creation and configuration

Necessary aspects are created automatically depending on the machine model:

- If asset is onboarded, the machine model will be automatically detected as SINUMERIK 840D sl/SINUMERIK ONE or SINUMERIK 828D.
- If asset is not onboarded, select the machine model manually.

Note

- If machine model of the activated asset is changed after activation, change the machine model manually and save it.
- The address of some variables are different, so the machine model should be corrected to use SSA fully.

Auto aspect creation

Auto aspect creation depends on the machine model. The following aspects will be created:

Note

Condition for auto aspect creation

- Onboard.key downloaded and Manage MyMachine Toggle should be enabled.
- Auto aspect creation is **valid** for asset created from basicsinumerikasset type (MMM customer).
- If asset is created from the derived type from basicsinumerikasset type (e. g: basicsinumerikasset > ssa_asset_type > ssa_derived_asset_type), auto aspect creation is invalid.
- Aspect configuration will be sent only from active services (MC,EA).

Machine Transparency	Machine Condition	Machine Error Analysis
No aspect	• CSM_AX01, CSM_AX02,	SINUMERIK_CSRAW
	CSM_AX03, CSM_AX04, CSM_AX05	SINUMERIK_MACHINESTATUS
	CSM_SP01	SINUMERIK_CSALARMREACTION
	CSM_General_Info	SINUMERIK_TRIGGERINGALARMS
	SINUMERIK_CSRAW	
	SINUMERIK_MACHINESTATUS	
	SINUMERIK_CSRESULTS	
	SINUMERIK_CSPROTECTIONLEVEL	

Procedure

The following procedure gives you an example how to configure an asset.

- 1. After downloading onboard.key and enabling MMM Toggle, choose one of the following applications:
- 2. EITHER Open "Sinumerik Service Assistance". Open the "Activation page" from "Asset Selection page" (only SSA admin).



- OR - Open "Shopfloor Management Application". Click the SSA tab to activation page.

III 5	iEMENS Shopfloor Mgmt. App.	
Ξb	(
Dephor	Search	67.147
Q. Gammay	001_Mimic_ganttChart_issue member.007_mimic_MMItCarinouri	i
- Maria	100_Subtenant monoto.MbtRisburgerfiger	
©	100-05 monder.VMMGaterant/get	
	INTERNAL CONTRACTOR	
(Q) Aust	 200_Subtemant monoreduc.UtilitSubtemantType1 	
Menager IT	352-95 mmode.MMR/Literarchipel	

3. Search the asset, which will be purchased.

Name	Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analysis
• mmmdev					
SSA_840D_1	840/ONE -	Asset for connecting my SINUMERIK Machine to SSA	Active	Inactive	Inactive

4. Select the machine model (if the asset is not onboard).

Name	† Mac	hine Model	Description
mmmdev			
SSA_8400_1	840/0NE		Asset for connecting my SINUMORIX Machine to SSA

5. Activate the services.

Name	Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analysis
Q. SSA_840D_1	Q	Q			
- mmmdev					
SSA_840D_1	840/ONE -	Asset for connecting my SINUMERIK Machine to SSA	Active	Active	Active
	UNIT .		Active	Active	Acuve

6. Press "Save".



7. Press "Activate for a fee" or "Yes I have a valid contract" (depends on billing system).



8. A notification is shown that saving is successful.



- 9. Wait until the end of operation.
 - If auto aspect configuration is successful, the below icon below is shown:

Active	Active	Active
ft	has failed the halow issue is	

- If auto aspect configuration has failed, the below icon is shown:

Active	Active	Active
		_

10. After successful configuration, aspects are be listed in the Shopfloor Management Application:

plication Advanced	
$ \qquad \qquad \bigoplus \qquad $	
ime based / cyclic trigger	
CSM_AX02	T 🖉 🖉
CSM_AX04	
CSM_AX05	1
CSM_SP01	
SINUMERIK_CSRAW	202
CSM_AX01	2 2 2
CSM_AX03	
CSM_General_Info	
ariable value based trigger	
SINUMERIK_CSALARIMREACTION	
larm based trigger	
le Upload	

Note

If SSA toggles are enabled before MMM activation, you have to configure the assets manually . For manual aspect configuration, refer to chapter Overview (Page 37).

4.1.7.3 Configuring aspect for "time-based / cyclic trigger" acquisition

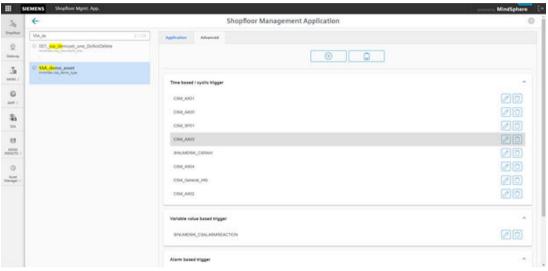
Note

If SSA toggles are enabled before MMM activation, you have to manually configure the assets . For manual asset aspect configruation, this section needs to be followed.

Procedure

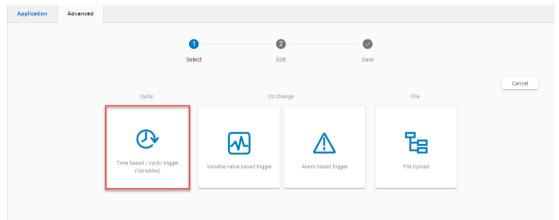
In the following, you can find an example how to configure the Aspect "SINUMERIK_CSRAW":

- 1. Load "Shopfloor Management Application".
- 2. Select your previously created Asset.
- 3. Press "Advanced".



4. Press "Add".

5. Select "Time-based / cyclic trigger (Variables)".



lication	Advanced						
		0	2				
		Select	Edit	Save			
		Q	→ Time base	ed trigger			
						Save	Cancel
							1/999
Create a Cyclic aspe SINUME	-]					٤
Applied Reading cy 5 Secor]2					٩
Variable	s						١
Name		Address	Datatype	· ·	Unit	*	\otimes
			÷				

6. Type the Aspect name and select "Reading cycle" from the drop-down menu.

7. Press "Add" as many times as necessary to add the number of needed variables.

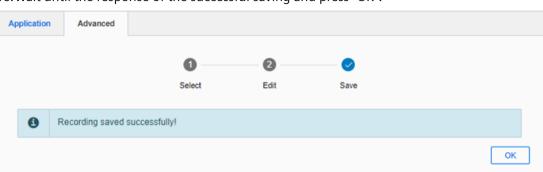


	0	- 2 0		
	Select	Edit Save		
	◯ Tim	ne based trigger		
	0	io sacca ingger	Save	Canc
				5/999
Create aspect				C
Cyclic aspect name SINUMERIK_CSRAW				
Applied reading cycle				I
Reading cycle 5 Second(s) •				
Variables				(1
Name	Address	Datatype	Unit	
NCKAlive	/Nck/State/nckAliveAndWel	DOUBLE -	One 👻	\odot
Name	Address	Ostatype	Unit	
PowerOnTime	/Nck/ChannelDiagnose/pow	DOUBLE -	One *	\otimes
Name	Address	Datatype	Unt	
PrioAlarm	/Nck/TopPrioalarm/textInde:	DOUBLE -	One 👻	\otimes
Name	Address	Datatype	Unt	
SetupTime	/Nck/ChannelDiagnose/set	DOUBLE -	One 👻	\otimes
Name	Address	Datetype	Unit	
timesync_offset	/ePSStore/timesync_offset	DOUBLE -	One 👻	\otimes

8. Type the "Name", "Address", "Datatype" and "Unit" of the variable to be added.

9. Press "Save".





10. Wait until the response of the successful saving and press "OK".

11. Verify that the Aspect was created as expected.

Application	Advanced	
Time based	/ cyclic trigger	^
SINUMERIK	_CSRAW	0
Variable val	ue based trigger	^
Alarm based	l trigger	^
File Upload		^

12. This procedure should be repeated until all the needed "Time-based / cyclic trigger" Aspects are created. For example:

Application Advanced	
Time based / cyclic trigger	^
CSM_AX01	
CSM_AX02	
CSM_AX03	
CSM_AX04	1
CSM_AX05	
CSM_General_Info	1
CSM_SP01	1
SINUMERIK_CSRAW	
Variable value based trigger	~
Alarm based trigger	~
File Upload	~

4.1.7.4 Configuring aspect "variable value-based trigger" acquisition

Procedure

In the following you can find an example how to configure "SINUMERIK_CSALARMREACTION" trigger.

- 1. Load "Shopfloor Management Application".
- 2. Select your previously created Asset.
- 3. Press "Advanced".

	IEMENS Shopfoor MgmL App.		
16	(Shopfloor Management Application	0
Dephese	[\$54,04 3110	Application Advanced	
Q. Selena	0 001 tas demoset, one DoNotDelete metalected product (or	() () () () () () () () () ()	
<u>.</u>	C SSA_demo_asset enriche.log.demo_top	Time based / cyclic trigger	
0		CIM_AND	20
%		CIM, MOI CIM, 1971	
ER MAN		CBM, AND BNAMERK, CRAW	00
O-		CIM_AKO4	20
Managar (*		CBM_ARG2	20
		Variable value Based trigger	
		BINIMENIK, CRALARMREACTION	20
		Alarm based trigger	(A)

4. Press "Add".



5. Select "Variable value-based trigger".

Application	Advanced					
				2	9	
			-	_	ave	
						Cancel
		Cyclic	On C	hange	File	Cancer
					暍	
		Time based / cyclic trigger				
		(Variables)	Variable value based trigger	Alarm based trigger	File Upload	
				1		

6. Fill in all the data.

	0	0	0	
	Select	Edit	Save	
	(D)	Variable based trigg	er	
				Save
				12/999
Create aspect Aspect name SINUMERIK_CSALARMRE				3
Configure the trigger				3
Variable address /Channel/State/acAlarmSta	BLE • Not equals	v Voriable value 0		
With the following configuration Descure time sec 1 sec Hysteresis Hysteresis	Relative Absolute			G
Then record following value				G
Varstie address /Channel/State/acAlarmSta	DUBLE • Duration	sec	♥ Cycle 30	580
				٤ ٢
Add trace files to trigger				
Add trace files to trigger	C] NC-Status	🗆 Ma	ichine Data

7. Press "Save".



- Application Advanced

 Application Advanced

 Select Edit Save

 Recording saved successfully!

 OK
- 8. Wait until the response of the successful saving and press "OK".

9. Verify that the Aspect was created as expected.

Application	Advanced	
Time based	′ cyclic trigger	^
CSM_AX01		
CSM_AX02		
CSM_AX03		
CSM_AX04		2 Û
CSM_AX05		2 Û
CSM_Gener	al_Info	2 Û
SINUMERIK	_CSRAW	0
Variable valu	e based trigger	^
SINUMERIK	CSALARMREACTION	ØD
Alarm based	trigger	^

4.2 Aspect configuration for SSA with BFC Gateway

4.2.1 Overview

To connect a SINUMERIK controller to SSA via the BFC gateway, you carry out the following steps once:

- Creating the asset type "bfc_ssa_sinumerik"
- Connecting a new machine to SSA
- Configuring the BFC client data acquisition
- Creating and saving a machine identity

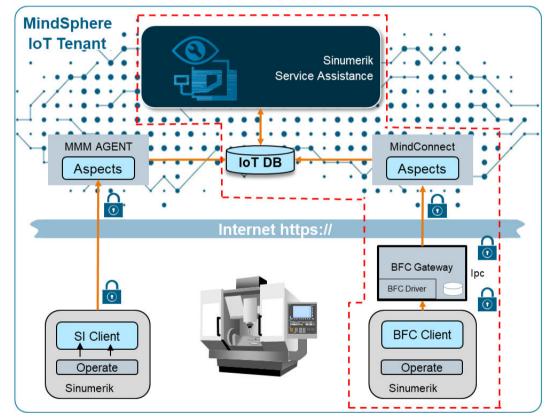


Figure 4-2 Overview aspect configuration

4.2.2 Requirements

The following preconditions must be fulfilled:

• The BFC client is connected to the BFC gateway

Note

Configuration activities for BFC client and BFC gateway are not part of this documentation. For more information about BFC client and BFC gateway, please follow this link:

Function Manual Brownfield Connectivity Services (<u>https://support.industry.siemens.com/cs/at/en/sc/5392</u>)

- MindSphere Tenant is available and set up with Mindsphere Application SSA activated
- The middleware "SSA Service" and "Scriptlogic" are active. More information on this topic can be found in chapter Checking the current status of middleware (logic) (Page 51).

4.2.3 Checking the current status of middleware (logic)

To check whether the middleware "SSA Service" and "Scriptlogic" are active, proceed as follows.

Procedure

- 1. Open the user interface of the BFC gateway.
- 2. Select the "Commissioning" area.
 - In the area "Middleware (Logic)", you will find the entries "SSA-Service" and "Scriptlogic".
 - You can recognize the current status by the symbols to the left of "SSA Service" and "Scriptlogic":
 - The symbol "Running" means "active".

The symbol "Stopped" means "not active".



4.2.4 Creating aspects in Mindsphere

The following aspects must be created in Mindsphere. You can find further information in the chapter Aspect configuration for SSA with MMM (Page 26).

If the aspects listed here do not exist, you must create them.

> CH1_MachineStatus	core.sinumerikbasicmachinestatus	Dynamic	Inherited
ClosedAlarms	mmmdev.ClosedAlarms	Dynamic	Defined
> CSM_AX01	mmmdev.CSM_AX01	Dynamic	Defined
> CSM_AX02	mmmdev.CSM_AX02	Dynamic	Defined
> CSM_AX03	mmmdev.CSM_AX03	Dynamic	Defined 🗍
> CSM_AX04	mmmdev.CSM_AX04	Dynamic	Defined 🗍
> C5M_AX05	mmmdev.CSM_AX05	Dynamic	Defined
> CSM_General_Info	mmmdev.CSM_General_Info	Dynamic	Defined 🗍
> CSM_SP01	mmmdev.CSM_SP01	Dynamic	Defined
> MachineModel	core.sinumerikbasicmachinemodel	Dynamic	Inherited
> SINUMERIK_CSALARMREACTION	mmmdev.SINUMERIK_CSALARMREACTION	Dynamic	Defined
> SINUMERIK_CSMACHINESTATUS	mmmdev.SINUMERIK_CSMACHINESTATUS	Dynamic	Defined
> SINUMERIK_CSPROTECTIONLEVEL	mmmdev.SINUMERIK_CSPROTECTIONLEVEL	Dynamic	Defined 🗍
> SINUMERIK_CSRAW	mmmdev.SINUMERIK_CSRAW	Dynamic	Defined
> SINUMERIK_CSRESULTS	mmmdev.SINUMERIK_CSRESULTS	Dynamic	Defined
> SINUMERIK_TRIGGERINGALARMS	mmmdev.SINUMERIK_TRIGGERINGALARMS	Dynamic	Defined
> Startup	core.sinumerikbasicstartup	Dynamic	Inherited
> status	core.assetstatus	Static	Inherited

4.2.5 Creating the asset type "bfc_ssa_sinumerik"

If the asset type "bfc_ssa_sinumerik" does not exist in the Asset Manager of MindSphere, you have to create it.

Procedure

- 1. Open the Asset Manager in MindSphere.
 - Click on "Types" in the left hand window area.
 - The "Basic Asset" Windows opens. Navigate to the "BasicAgent" area and select the type "MindConnectLib" from the list in the right-hand window area.

	Asset Manager	
仚	Types	
	< Back	
\bigtriangledown	BasicAgent	
97 ⁰	+ Create type	
Ś	Filter	
뿂	▼ Core types	
	IndustrialEdge core.industrialEdge	
	MindConnectFB1500 core.mcfb1500	
	MindConnectIntegration core.mcintegration	
	MindConnectIoT2040 core.mciot2040	\bigcirc
	MindConnectLib core.mclib	\bigcirc
	MindConnectNano	

2. The "MindConnectLib" window opens. Click the "Create Type" button.



- 3. The "Create type" window opens.
 - Fill in the input fields. Enter the designation "bfc_ssa_sinumerik" in the "Name" input field.

 Type information 	
Parent type:	
core.basicagent	
Parent type due to hierarchical order	
Type ID:	
mmmdev.bfc_ssa_sinumerik	
Type ID cannot be changed after creation	
Name: *	
bfc_ssa_sinumerik	
Description:	
Description	



- 4. Create the list of aspects according to the following overview.
 - Click on "Add aspect".
 - Select the aspects as shown in the following figure.

CH1 MachineStatus	core.sinumerikbasicmachinestatus	Dynamic	Inherited
CH 1_Machinestatus	core.smumerikoasicmachinestatus	Dynamic	innerited
ClosedAlarms	mmmdev.ClosedAlarms	Dynamic	Defined 🗍
CSM_AX01	mmmdev.CSM_AX01	Dynamic	Defined 🗍
CSM_AX02	mmmdev.CSM_AX02	Dynamic	Defined 🗍
CSM_AX03	mmmdev.CSM_AX03	Dynamic	Defined 🗍
CSM_AX04	mmmdev.CSM_AX04	Dynamic	Defined
CSM_AX05	mmmdev.CSM_AX05	Dynamic	Defined 🗍
CSM_General_Info	mmmdev.CSM_General_Info	Dynamic	Defined 🗍
CSM_SP01	mmmdev.CSM_SP01	Dynamic	Defined
MachineModel	core.sinumerikbasicmachinemodel	Dynamic	Inherited
SINUMERIK_CSALARMREACTION	mmmdev.SINUMERIK_CSALARMREACTION	Dynamic	Defined 🗍
SINUMERIK_CSMACHINESTATUS	mmmdev.SINUMERIK_CSMACHINESTATUS	Dynamic	Defined 🗍
SINUMERIK_CSPROTECTIONLEVEL	mmmdev.SINUMERIK_CSPROTECTIONLEVEL	Dynamic	Defined 🗍
SINUMERIK_CSRAW	mmmdev.SINUMERIK_CSRAW	Dynamic	Defined
SINUMERIK_CSRESULTS	mmmdev.SINUMERIK_CSRESULTS	Dynamic	Defined 🚺
SINUMERIK_TRIGGERINGALARMS	mmmdev.SINUMERIK_TRIGGERINGALARMS	Dynamic	Defined 🗍
Startup	core.sinumerikbasicstartup	Dynamic	Inherited
status	core.assetstatus	Static	Inherited

- Click the "Save" button.



4.2.6 Connecting a new machine to SSA

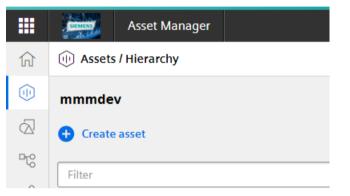
To connect a machine to MindSphere via BFC, perform the following steps:

- Creating a new asset of the type "bfc_ssa_sinumerik"
- Generating connection information of the assets
- Creating a MindSphere gateway for SSA

4.2.6.1 Creating a new asset of the type "bfc_ssa_sinumerik"

Procedure

- 1. Open the Asset Manager in MindSphere.
 - Click on "Assets" in the left-hand window area.
 - In the right-hand window area navigate to the desired location in the asset hierarchy.
- 2. Click the "Add asset" button.



3. Select the asset type "bfc_ssa_sinumerik".

	SIEMENS	Asset Manager		
ណ៍				
	Sele	ect type		
\bigcirc	bfc		×	
<mark>⊡7</mark> 8				
с С		bfc_ssa_sin mmmdev.bf	umerik c_ssa_sinumeri	k

	Asset Manager
仚	
	Add asset
\bigtriangledown	— General
5⊒	Type ID: mmmdev.bfc_ssa_sinumerik
Š	Selected type of asset cannot be changed
쨞	Name: *
	Machine 1
	Description:
	Description
	255 characters left
	+ Location
	+ Variables

4. Assign a name, e.g. "Machine 1", to the new asset.

5. All required assets are listed. Click the "Save" button.

CoseAMams Immmdex/CoseAMams Dynamic Design C CM_XXX01 mmmdex/CSM_XXX01 Dynamic Design C CM_XXX02 mmmdex/CSM_XXX02 Dynamic Design C CM_XXX02 mmmdex/CSM_XXX02 Dynamic Design C CM_XXX03 mmmdex/CSM_XXX03 Dynamic Design C CM_XXX04 mmmdex/CSM_XXX04 Dynamic Design C CM_XXX04 mmmdex/CSM_XXX04 Dynamic Design C CM_XXX05 mmmdex/CSM_XXX05 Dynamic Design	
CSM_AV02 mmmdex/SM_AV02 Dynamic Dates CSM_AV03 Dynamic Detest CSM_AV03 Dynamic Detest	Û
CSM_AX03 Dynamic Descent CSM_AX04 Dynamic Dynamic Descent	Û
CSM_XX04 Dynamic Detect	
	Û
CSM_AX05 mmmdex.CSM_AX05 Dynamic Between	Û
CSM_General_info Dynamic axiom	
> C84_901 Dynamic Dynamic Deteel	Û
> MachineModel core.sinumerikbasicmachinemodel Dynamic interest	
SINUMERIC (SALARMEEACTION Dynamic Betwee	Û
SINUMERIK_CSMAGNESTATUS Dynamic Device	Û
SINUMERIK_CRADICCIONLAVEL Dynamic Device	Û
SINUMERK_CSRAW Dynamic Dense	Û
SINUMERY_CRESULTS Dynamic Descent	Û
> SNUMERK_TREGEENIGALARMS Dynamic Bekeel	Û
> Startup core.sinumerikbasicstartup Dynamic Interested	
> status core_assetstatus Static sevena	



4.2.6.2 Generating connection information of the assets

Procedure

- 1. Open the Asset Manager in MindSphere.
 - Click on "Assets" in the left-hand window area.
 - In the middle area of the window navigate to the BFC asset, you have just created.
 - Click on the arrow in the lower right window area "Connectivity".

	Asset Manager				powered by MindSphere [→
ស	Assets / Hierarchy	mmmdev > Machine 1			Ø 🕀 …
۵	mmmdev B C			CA Reliest	
67 76	Create asset Fitter Fitter	Aspects Last updated: 2020-07-22 14:24:48			
~ #	CFT_Subtenant		Name	Status	Ģ
666	EMO		AgentOnlineStatus	No data available 2020-07-22 14:24:00	1
	sgtest		CH1_BasicConfig	No data available 2020-07-22 14:24:00	1
		19 0 0	CH1_MachineStatus	No data available 2020-07-22 14:24:00	1
	SSA_Subtenant	OFFLINE ONLINE STATIC	CSM_AX01	No data available 2020-07-22 14:24:00	1st
	SSA_Subtenant_test2		CSM_AX02	No data available 2020-07-22 14:24:00	1
	Subtenant_test2				
	Test GS	Variables			
	Testgs	No variables entered yet			
	Testgs_	· · · ·			
	➤ Assets	Connectivity			
	Machine 1	MindConnect Lib 🧷			
	▼ Shared	• Offline	v3		
	α _{co} ⁰ CFTGL_mtconnect	Status MindSphere	Version		
	* Received by Sharing	Operator			
₩.	α_0^{O} mcapps				

- 2. The "Configure MindConnect Lib" window opens.
 - Select the option field "SHARED_SECRET" for the secure data connection.
 - Click the "Save" button.

3. The "Edit boarding configuration" window opens. Click the "Generate connection key" button.

🗰 🚞 Asset Manager	powered by: MindSphere
MindConnect Lib # Plugin Machine 1 bfc_ssa_sinumerik	Close (3)
	SHARED_SECRET () Conboarding () Offline (since: 7/2/2/0, 2/52 PM) () Content status
Back to configuration	
Edit boarding configuration	
Boarding configuration In order to use MindConnect Ub, you have to insert the generated onboarding key into your system.	
Generate onboarding key Copy to clipboard	

4. Copy the generated connection key to the clipboard.

• 🥻	Asset	Manager	powered by MindSphere	
MindConne	ect Lib 🚸 Plugi	1 Machine 1 blc_ssa_śinumerik	Close 🔇	Ð
Config	gure M	indConnect Lib		
Ť	MindConn transmitte	ect Lib creates secure connectivity from an onsite device to MindSphere. Firewall-friendly communication via a MindSphere API and unique onboarding security tokens authenticate MindConnect Lib during onbo 5,	barding to ensure data is safely	
Please selec		sfile that fits your needs to continue:		
A public/pr	irivate key pair (30	Tähli für enhanced security which requires more computing power on the devices. Interrupt devices.		
Save	1			

4.2.6.3 Creating a MindSphere gateway for SSA

Perform the following steps to create a MindSphere gateway for SSA:

- Step 1: "Select gateway type"
- Step 2: "Define basic configuration"
- Step 3: "Define dataset configuration"
- Step 4: "Define alarm configuration"
- Step 5: "Advanced configuration"

Requirement

The "Commissioning" area is open.

Parameter

Parameter	Description
① Select gateway type	
Select target Store*	Selection of the gateway
2 Define basic configuration	
Type gateway name*	Gateway name
Type gateway description	Gateway description

Parameter	Description
Paste MindSphere connection info*	Connection information
	Entry of the MindSphere connection string in JSON format
	Remark:
	Paste the copied connection key from the clipboard.
Type proxy address if needed	Enter the proxy address if a proxy is required for Internet access
③ Define dataset configuration / Optional	
Pick a client ID	Client ID of the client, from which data is to be sent to MindSphere.
	Remark:
	All IDs of the clients, which were created under this "Plant hierarchy", are displayed.
Pick a dataset	Select the client data set that should be sent to MindSphere.
	Remark:
	All data sets of the selected client ID are displayed
- OR -	
All dataset	All client data is sent to MindSphere
4 Define alarm configuration / Optional	
Pick a client ID	All IDs of the clients, which were created under this "Plant hierarchy", are displayed.
(5) Advanced configuration / Optional	
Remark:	
These fields do not require any entries, and are only	populated by the hotline in the case of service.
Type image path*	Path to MindSphere docker image
Type username to access the image path	Username to access the image path
Type password to access the image path	Password to access the image path
Set message TTL (time to live) in milliseconds*	AMQP lifetime of the data
Set queue expiration in milliseconds*	AMQP queue execution time
Set max queue size*	AMQP maximum queue size
Set max queue size bytes*	AMQP maximum queue size in bytes
Select queue mode*	AMQP queue mode
Set prefetch count*	AMQP prefetch counter
Type alarm topic*	MQTT topic alarm event
Type new reading topic*	MQTT topic new dataset
Environment variable 1	Environment variable to store the data from "CurrentAlarms" as BIG STRING in MindSphere
Environment variable 2	Environment variable to store the data from "MachineModel" as BIG STRING in MindSphere
Environment variable 3	Note that in the variable "IOTGATEWAY_OVER-
	RIDE" the file topic is changed to the client ID of the connected machine.

*: Obligatory data

The character sequence to be used for the various entries is provided in the input windows.

Procedure

1. In the "Gateway (Export)" area, click on "+" to add a new gateway.



- 2. Step 1: "Select gateway type"
 - From the drop-down list, select entry "MindSphere".
 - Click on "Next".

Ad	dd new gateway					
0	Select gateway type					
	Select target Store* MindSphere		•			
	Next					
0	Define basic configuration					
8	Define dataset configuration Optional					
6	Define alarm configuration Optional					
6	Advanced configuration Optional					
			8			

- 3. Step 2: "Define basic configuration"
 - Populate the fields to perform the basic configuration.
 Paste the copied connection key from the clipboard into the "Paste MindSphere connection info" input field.
 - Click on "Next".

	Define basic configuration
	T(pe gataway name*
	my-machine-to-ssa
	Supported lepts/overcate letters, numbers, - (must start vitil letter) 17-15
	Type gateway description
	Pada ModSober conscioninto. *
	("content" ("baseUti": "https://southgate.eut.mindsphera.io", "jat":
	*yulawQcir2XtaWQbitSsinBScOllapXCOSimFs2yBUTbU(2n) eyuc;McOUTQ04LC/2WWOUNB(BYmU2C247);WUTWYINBDDawnenbmb/adwisi=12C08Fs7uU2C4FSUU2C4gBObitS2Fa9A0504TG04TYPCGIShCOMP102D47297U2C437504TG44TYPCGIShCOMP102D47297U2C437504TG44TYPCGIShCOMP102D47297U2C437504Tg44TyPCGIShCOMP102D4747504Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D47750704Tg44TyPCGIShCOMP102D477507070704Tg44TyPCGIShCOMP102D477507070704Tg44TyPCGIShCOMP102D477507070704Tg44TyPCGIShCOMP102D47750707070704Tg44Tg44TyPCGIShCOMP102D4775750707070704Tg44Tg44Tg44Tg44Tg44Tg44Tg44Tg44Tg44Tg
1	backDoub.(EEther201/Nat/CourCours-6UM/056Eeger2Add/24/hetH28M22add) Doub.(Microsoft/Eether201/Nat/CourCours-6UM/056Eeger2Add/24/hetH28M22add) DUIL_Microsoft/E4HetBRimmovArbetExtB.157HetMBRibB.AccessFormQ516.abSto2DonneP6KpC524V5E=arVasCUMp6HOUXOX4T_formBBRID24HetBC4SM648P1ga894.NQ7, "centDcedentialProfile" ["SHARED_SECRET"]. "çüentir" "a20ebbcd03b/2198a5520006cf2013". "tenant: "temmder"]. "secantor" "2020-04-06112.14.13.0002"]
	b3K0.hex/17E1vz3K1Maz703oC0zap_e5UN758E6ogPVótK2cHeeHD3aM32xd5- v0U_W0rsts22Y4.HetBRmw0VH2EXELD2THrOMNBBM0X6e55RVr02516.MSbzt2enheP6Kpi5ZW5Ean7waCIU/t0HQU3Y0X4T-fYemNBfTUys8Heie-zK5M5sBtóg84JNQ*.
1	b%AD#x1TEHxx38/that7CspCGZxp.e5UN758EbgPYd;KZcHweHDBaMB2xd5- ADU_UKPrstg27LHuHBRFmmv2/HzEKLB12TH-OMNBBM2AG655RVC2316.MSbzt2@nheP6Kpi5ZW5Ean7waCUUhCHQU3Y0X4T-fYemNBfTUxg8Heie-xK5MssBn6ei84JNQ*.
	b%AD#x1TEHxz3XfMaz72soC2xxp_e5UN758Ebg9PX6KZcHweHD3aW82xc5- ADU_UKDrstsg2YLuHdBRmwoVH2EXELD2THCMNRbBuX0x6e56XrVC316,MSbzt29mheP6KpiSZW5Ean7waClUh0HQU3YDX4T-fYemNBfTUx98Heie-zKSM5sBt6w984JNQ*,

- 4. Step 3: "Define dataset configuration" / Optional With this step, you define which data is to be sent to MindSphere.
 - Select one data set, several or all data sets.

Note			
Several entrie	S		
Click on "+'	to add an addition	al entry.	
Click on "Next			
	•		
dd new gateway "my-	nachine-to-ssa"		
Select gateway type			
Define basic configuration			
Define dataset configuration Optional			
Pick a client ID		Pick a dataset	
harald		"All datasets"	+
Next			
Define alarm configuration			
Advanced configuration Optional			

- 5. Step 4: "Define alarm configuration" / Optional With this step, you define which alarms are to be sent to MindSphere.
 - Select the alarms.

Note	
Several entries	
 Click on "+" to add an additional entry. 	
Click on "Next"	
dd new gateway "my-machine-to-ssa"	
Select gateway type	
Define basic configuration	
Define dataset configuration Optional	
Define alarm configuration Optional	
Pick a client ID harald	
Next Advanced configuration	
Optional	
	• ◎

6. Step 5: "Advanced configuration" / Optional

MINDSPHERE_BIG_STRING_Alarms_CurrentAlarms=TRUE

MINDSPHERE_BIG_STRING_MachineModel_Data=TRUE

IOTGATEWAY_OVERRIDE={"iotClientConfig":{"fileTopics":["equipments.*.services.harald.files.*"]}}

nt variable 2

nt variable 3

Type new environment variable.

- Add the environment variables.
 Replace the exemplary designation "harald" with the ID of your machine.
- Click on "Save" to save the MindSphere gateway.

Add new gateway "my-machine-to-ssa"

apc-docker-regi	stry.dlinkddns.com/apc-koe/mts/iotserver/gateways/mindsphere.v1.0.0
Type username	to access the image path
Type password	to access the image path
Set message TTL (tin 7884000000	ne to live) in millisceconds*
Set queue expiration 604800000	in millisceconds*
Set max queue size 15000000	
Set max queue size t 5000000000	ytes*
·····	
	8
ew gateway '	'my-machine-to-ssa"
zy	
t prefetch count * 00	

7.	The MindSphere gateway was successfully created	ated, and	is shown ir	ı the overview	in the
	"Gateways (Export)" area.				

Î

Î

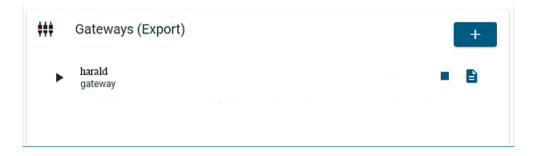
Î

8

8

⊗

4.2 Aspect configuration for SSA with BFC Gateway



4.2.7 Configuring the BFC client data acquisition

You can use the BFC client to record certain "data sets". To do this, you must configure selected variables.

Procedure

Configure the variables shown in the following figures.

Dataset name	Amount of Datapoints	
CH1_BasicConfig	This dataset has 9 datapoints	i ~
SINUMERIK_CSRAW	This dataset has 4 datapoints	Î ~
CSM_General_Info	This dataset has 4 datapoints	Î v
CSM_AX01	This dataset has 5 datapoints	i ~
CSM_AX02	This dataset has 5 datapoints	i ~
CSM_AX03	This dataset has 5 datapoints	Î ~
CSM_AX04	This dataset has 5 datapoints	Î ~
CSM_AX05	This dataset has 5 datapoints	i ~
CSM_SP01	This dataset has 5 datapoints	i ~
SINUMERIK_CSALARMREACTION	This dataset has 1 datapoints	i ~

Edit client "harald"

11_BasicConfig	This dataset has 9 datapoints	i	^
e dataset name * H1_BasicConfig			
ect reading mode*		Supported input:letters, numbers, $_$ (must start with letter)	15/50
n Change			*
depounce time in milliseconds*			
		Range: 200-	35400000
datapoint(s) configured			
datapoint(s) configured			
datapoint(s) configured Datapoint name	Information		
	Information is a 'float' at '/Channel/State/FeedRatelpoOvr[u1]'		*
Datapoint name		ī	* *
Datapoint name Feedoverride	is a 'float' at '/Channel/State/feedRatelpoOvr[u1]'	Î	
Datapoint name Feedoverride NCProgram	is a 'float' at '/Channel/State/feedRatelpoOvr[u1]' is a 'string' at '/Channel/ProgramPointer/progName[u1,1]'	1 1 1 1	~

Edit client "harald"

Datapoint name	Information	
eedoverride	is a 'float' at '/Channel/State/feedRate/poOvr[u1]'	i ~
NCProgram	is a 'string' at '/Channel/ProgramPointer/progName[u1,1]'	i ~
NCProgramStatus	is a 'float' at '/Channel/State/progStatus[u1]'	i ~
NrOfAlarms	is a 'float' at '/Nck/State/numAlarms[u1]	i ~
Dpmode	is a 'float' at '/Bag/State/opMode[u1]'	i ~
ProtectionLevel	is a 'float' at '/Nck/Configuration/accessLevel'	i ~
Spindleoverride	is a 'float' at '/Nck/Spindle/speedOvr[u1]'	Î ~
StopCond	is a 'float' at '/Channel/State/stopCond[u1]'	i ~
AgentOnlineStatus	is a 'bool' at '/Channel/State/progStatus[u1]	a

8

8

4.2 Aspect configuration for SSA with BFC Gateway

Edit client "harald"

IUMERIK_CSRAW	This dataset has 4 datapoints		
dataset name* IUMERIK_CSRAW			
ct reading mode " Irval		Supported input/letters, numbers, _ (must start with letter)	15/50
nterval time in maliseconds*			
		Range: 200-	86400000
atapoint(s) configured			
atapoint(s) configured Datapoint name	Information		
	Information is a 'float' at 'Nck/State/nckAliveAndWell'	1	~
Datapoint name		ī	* *
Datapoint name NCKAlive	is a 'float' at '/Nck/State/nckAliveAndWell'		* * *

SM_General_Info	This dataset has 4 datapoints	i	^
pe dataset name" SM_General_Info			
iect reading mode ' Ierval		Supported input:letters, numbers, $_$ (must start with letter)	16/50
t interval time in milliseconds" 1000			
data a fatta da fatta d		Range: 200-	35400000
datapoint(s) configured		Banger 2004	85400000
datapoint(s) configured Datapoint name	Information	Range: 200-	05400000
	Information is a 'float' at '/Nck/ChannelDiagnoseldpAxisCfgNumAxes'	Range: 200	~
Datapoint name		Range: 2004	
Datapoint name NUM_AXES_IN_SYSTEM	is a 'float' at '/Nck/ChannelDiagnose/dpAxisCfgNumAxes'	Range: 2004	~

Edit client "harald" are... CSM_AX01 Supported input letters, numbers, _(must slart with letter) 87.50 Select reading mode...* ÷ Set interval time in milliseconds... 30000 Range: 200-88400000 5 datapoint(s) configured Datapoint name Information is a 'float' at '/DriveData/DriveControl[u1,2]' AX01_Drives_Status Î ~ AX01_Motor_Temp is a 'float' at '/DriveData/DriveControl[u1,35]' Î Ŷ AX01_ImpulseEnable_PLC is a 'float' at '/Channel/MachineAxis/impulseEnable[u1,1]' **i** . AX01_ControlConfirmActive_NC is a 'float' at '/Channel/MachineAxis/contrConfirmActive[u1,1]' Î v is a 'float' at '/Pic/DataBlock/Byte[c31,93]' AX01_Variable_Group ... 8 8

reading mode " val		Supported inputietiers, numbers,(must start with letter) = 5 / 50
erual time in milliseconds* 10		
tapoint(s) configured		Range: 200-8640000
Datapoint name	Information	
AX02_Drives_Status	is a 'float' at '/DriveData/DriveControl[u2,2]'	i •
	in a Martin P. Dain Date Dain Control 0.0.051	-
AX02_Motor_Temp	is a 'float' at '/DriveData/DriveControl[u2,35]'	• · ·
AX02_Motor_Temp AX02_ImpulseEnable_PLC	is a 'float' at 'IOnveLotai/UnveControlµ2,30]	■ •
		• · ·

8

4.2 Aspect configuration for SSA with BFC Gateway

Edit client "harald"

t reading mode * Val		Supported input:letters, numbers, _(must start with letter) = 8.)
ierval time in miliseconds * 20		
tapoint(s) configured		Range: 200-86400
Datapoint name	Information	
AX03_Drives_Status	is a 'float' at '/DriveData/DriveControl[u3,2]'	i ~
AX03_Motor_Temp	is a 'float' at '/DriveData/DriveControl[u3,35]'	i ~
AX03_ImpulseEnable_PLC	is a 'float' at '/Channel/MachineAxis/impulseEnable[u1,3]	i ~
	in a life of an URB and all the shift a finite in the state of a state of the state of the	i .
AX03_ControlConfirmActive_NC	is a 'float' at '/Channel/MachineAxis/contrConfirmActive[u1,3]'	• •

ype dataset name" CSM_AX04		
elect reading mode " nterval		Supported input/letters, numbers, _ (must start with letter) 875
et interval time in milliseconds* 0000		
datapoint(s) configured		Range: 290-0640000
Datapoint name	Information	
AX04_Drives_Status	is a 'float' at '/DriveData/DriveControl[u4,2]'	i ~
AX04_Motor_Temp	is a 'float' at '/DriveData/DriveControl[u4,35]'	i ~
AX04_ImpulseEnable_PLC	is a 'float' at '/Channel/MachineAxis/impulseEnable[u1,4]	i ~
AX04_ControlConfirmActive_NC	is a 'float' at '/Channel/MachineAxis/contrConfirmActive[u1,4]'	i ~
AX04_Variable_Group	is a 'float' at '/Plc/DataBlock/Byte[c34,93]'	T

Edit client "harald"

t reading mode " rval		Supported input)etters, numbers,(must start with letter) = 3 / 50
iterval time in milliseconds " 00		
		Range: 200-86400000
atapoint(s) configured		
Datapoint name	Information	
AX05_Drives_Status	is a 'float' at '/DriveData/DriveControl[u5,2]'	i ~
AX05_Motor_Temp	is a 'float' at '/DriveData/DriveControl[u5,35]'	i ~
	is a 'float' at '/Channel/MachineAxis/impulseEnable]u1,5]'	i ~
AX05_ImpulseEnable_PLC		-
AX05_ImpulseEnable_PLC AX05_ControlConfirmActive_NC	is a 'float' at '/Channel'MachineAxis/contrConfirmActive[u1,5]'	• ·

reading mode* Val		-	/50 ¥
terval time in milliseconds*			
		Range: 210-86400	000
datapoint(s) configured			
Datapoint name	Information		٦
SP01_Drives_Status	is a 'float' at '/DriveData/DriveControl[u6,2]'	i ~	
SP01_Motor_Temp	is a 'float' at '/DriveData/DriveControl[u6,35]'	i ~	_
SP01_ImpulseEnable_PLC	is a 'float' at '/Channel/MachineAxis/impulseEnable[u1,6]'	i ~	
SP01_ControlConfirmActive_NC	is a 'float' at '/Channel/MachineAxis/contrConfirmActive[u1,6]'	i ~	
SP01_Variable_Group	is a 'float' at '/Plc/DataBlock/Byte[c36,93]'	i ~	
			_

Edit client "harald"

SINUMERIK_CSALARMREACTION	This dataset has 1 datapoints	ĩ	-
ipe dataset name" SINUMERIK_CSALARMREACTION			
Select reading mode "		Supported input:letters, numbers, _ (must start with letter)	25/50
On Change			*
Set debounce time in milliseconds * 200			
200		Range: 200-	86400000
l datapoint(s) configured Datapoint name	Information		
	Information is a 'float' at 'SINUMERIK_CSALARMREACTION_data'		*
Datapoint name SINUMERIK_CSALARMREACTION_data		Î	*
Datapoint name SINUMERIK_CSALARMREACTION_data		Sepperted inpublishes, numbers, _(must start with listbo)	× 0750
Datapoint name SINUMERIK_CSALARMREACTION_data		Sepported inputiellers, numbers,(must start with liefler)	v
		Supported input letters, numbers,(must start with letter)	•

4.2.8 Creating and saving a machine identity

You can store important information such as machine information and address information for each machine using an identSNAPSHOT.xml file.

The creation of an identSNAPSHOT.xml file only applies to SINUMERIK Operate. You can find further information in the chapter Creating identSNAPSHOT file on SINUMERIK controller (Page 74).

Module description

5.1 Overview

The service app **SINUMERIK Service Assistance** is modular and consists of three independent service packages, which can be combined with each other in a customer-specific manner:

• Machine Transparency (Page 94) enables the automated acquisition of information about hardware components and software versions that are used within the machine tool with a SINUMERIK control system. With the help of transparency regarding the components installed at the customer, it is possible for the expert to provide advice on hardware and software handling. Furthermore the Change Protocol page offers information for detecting the changes which are important for experts or any user who cares the machines current state.

Machine Transparency is the base of SINUMERIK Service Assistance (SSA), which means in every combination, Machine Transparency is used.

- Machine Condition (Page 108) enables the cyclic acquisition of advanced state data via the control and drive technology and their targeted evaluation with the help of intelligent analysis methods. Within a MindSphere application, the basic system information such as the SINUMERIK version or the number of axes, the machine accesses with information about the respective protection level as well as the boot events and their causes are recorded and visualized.
- Machine Error Analysis (Page 117)enables the identification and evaluation of error states that occur on the machine tool with SINUMERIK control. For this purpose, the error messages of the machine tool are continuously documented via a MindSphere application. Based on the collected information, a data analysis can be performed to identify the original cause of the error as well as existing causal relationships between the errors that occurred.

5.2 Handling of identSNAPSHOT file

5.2 Handling of identSNAPSHOT file

5.2.1 Overview

All the information in the service Machine Transparency is generated from a single xml file of the controller, called identSNAPSHOT. This file is imported into the app SINUMERIK Service Assistance after creating the identSNAPSHOT file manually on the controller.

Creating and uploading the identSNAPSHOT file is described in this chapter. Furthermore limitations on file upload are listed.

Note

The identSNAPSHOT file needs to be created manually with the instructions below every time there is a change (software or/and hardware) on the machine.

5.2.2 Creating identSNAPSHOT file on SINUMERIK controller

Procedure

1. Open SINUMERIK Operate and select the "Diagnostics" operating area. Diagnostics Press the "Version" softkey. 2. Vill Version It takes some time to call the version display. While the version data is being determined a progress message box and the appropriate text are displayed in the dialog line. Press the "Save" softkey. 3. Save The "Save version information: Select Archive" window opens. The following storage locations are offered depending on the configuration: Local drive • Network drives USB • • Version data (archive: Data tree in the "HMI data" directory) 4. Then press the "New directory" softkey if you wish to create your own New directory directory. Press the "OK" softkey. The directory is created. 5. 0K Press the "OK" softkey again to confirm the storage location. 6. 0K The "Save version information: Name" window opens. 7. Specify the desired settings.

- "Name:" input field the file name is pre-assigned with <Machine name/no.>+<CF-card number>. "_config.xml" or "_version.txt" is automatically attached to the file names.
- "Comment:" input field You can enter a comment that is stored with the configuration data.
- Version data (.TXT) Deactivate the checkbox.
- Configuration data (.XML) Activate the checkbox.
- 8. Press the "OK" softkey to start the data transfer.



Stadard paths for identSNAPSHOT file on NCU/PCU

NCU /user/sinumerik/hmi/data/version/ PCU C:\Program Files (x86)\Siemens\MotionControl\user\sinumerik\hmi\data\version\

Result

After the process is completed, the identSNAPSHOT file should appear under the path "/user/ sinumerik/hmi/data/version".

Name	Size	Changed	Rights
L		15.12.2017	rwxrwxr-x
hardware		14.05.2019 16:45	rwxrwxr-x
2 000060132087B10000A9_config.xml	245 KB	14.05.2019 16:45	rw-rw-r

Figure 5-1 Path identSNAPTSHOT

The standard paths for

5.2.3 Uploading identSNAPSHOT file to Mindsphere

Procedure

- 1. Connect to Mindsphere and go to "Shopfloor Management" app.
- 2. Select your asset name.

5.2 Handling of identSNAPSHOT file

3. On "Manage MyMachines" tab, make sure you have enabled the following options:

Application	Advanced		
	<u>.</u>	Manage MyMachines	
	Manage Myl Enable / Disable	Machines access for Manage MyMachines application	
	$\checkmark \bigcirc$		
	M 14.4	Marking (Onio dia Marking	
		Machines /Spindle-Monitor access for Manage MyMachines /Spindle-Monitor application	

Figure 5-2 Shopfloor Management Application - options

4. Press "Advanced".

	ICMENS Shopfoor Mynt. App.		MindSpher
	(Shopfloor Management Application	
	554,00 21100	Application Advanced	
e.	GD1_sta_Semoort_one_DoNotDelete seminary and provident june	[⊕] □]	
	© SSA demo avet include accleret, spe	Time Bassed / cyclic bigger	
		CIM_ART	20
		CINE, AX05	20
		C3M_AKO3	20
		BMUMERIK CERKIN	
		CBR_ARD4	20
		C6M_General_into	20
		CIM_A02	20
		Variable value Based Origger	
		BNUMERIC CRAUMBERCTICH	20
		Alarm based trigger	



6. Select "File Upload".

Application Advanced					
	G				
	Sel	ect Ed	it Sav	ve	
	Cyclic	On Ch	ange	File	Cancel
	⊘		\wedge	暍	
	Time based / cyclic trigger (Variables)	Variable value based trigger	Alarm based trigger	File Upload	

- 7. Press "Add file upload item".
- 8. Enter path of identSNAPSHOT file in the input box of "File Directories".
 - Enter a file name or a term like "*_config.xml" (it uploads all _config.xml files) in the input box of "Files".
 - Select "On Change" (recomended) or "Cyclic".
 - Type in any configuration name and press "Save".

pplication Advanced				
	1 Select	2 Edit	Save	
		E File Upload		
				Save Cancel
Configuration name Configuration name File_path Correct On Change 1 Hour(s)				٩
Add trace files to trigger				1
HMI-Trace		NC-Status	Machine Da	ta
File Directories:		① Files:		(1)
/user/sinumerik/hmi/data/version/		✓ Û ×_config.xm	0	Û
()				

5.2 Handling of identSNAPSHOT file

9. Wait until the response of the successful saving and press "OK".

Application	Advanced				
		0	0		
		0	2	-	
		Select	Edit	Save	
0	Recording saved su	uccessfully!			
					ОК

10. Verify that the path was entered as expected.

Application	Advanced	
Time based /	/ cyclic trigger	^
Variable valu	ie based trigger	^
Alarm based	trigger	^
File Upload		^
File_path		01

5.2.4 Limitations on file upload

The following file upload feature limitations come from Manage MyMachine (MMM) project:

Note

File Upload Limitations

For file upload limitations , please check MMM readme documentation (<u>https://documentation.mindsphere.io/resources/html/manage-my-machine-readme/en-US/index.html</u>).

Supported directories and folders

To ensure secure file upload, a white list is defined, which limits the configured path of a file upload item. A file upload item's path must follow the limitation rules which are presented below:

Directories for BFC Gateway

Below directory list is supported for fileupload operation and SSA. You cannot upload files from other directories and use it in SSA:

- C:\temp\files\ On the PCU
- C:\temp\datatransfer\ On the PCU
- /var/temp/datatransfer/ On the NCU
- /var/tmp/ On the NCU
- /user/sinumerik/hmi/data/version/ On the NCU

Directories for MMM

All MMM directories are supported by SSA.

Special directory: C:/temp/files

For the C:/temp/files, it must be configured as <temp>/files in the MTA Asset Config.

Note

Epsconfig.xml : temp file is C:/temp for PCU

Directory of <temp> comes from epsconfig.xml. Don't change this path and epsConfig tempdir must not end with *l*.

File Extensions

Only .xml extension is supported by SSA.

Note

Name of identSNAPSHOT

The name of identSNAPSHOT must be like one of these below:

- <filename>_config.xml
 i.e: SPG2019052401933 config.xml
- <file_name>_config_<DD-MM-YYYY_HH-MM-SS-SSS>.xml i.e:000060161897FC000014_config_01-04-2020_21-39-58-101.xml

Sending the correct files or adding the files under the specific file upload directories belongs to user's own responsibility.

Note

Because of Fanuc File Transfer driver not implemented yet, file upload functionality on Fanuc machines is currently not supported.

5.2 Handling of identSNAPSHOT file

5.2.5 Uploading identSNAPSHOT file via Fleet Manager

Procedure

- 1. Extract the identSNAPSHOT file from the controller.
- 2. Connect to MindSphere and go to "Fleet Manager" app.

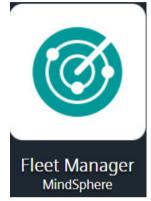


Figure 5-3 Logo Fleet Manager

- 3. Search and select your asset name.
- 4. Select files tab.

Fleet Manager	
SSA_840D_1	
(1) 20/225	E L: 9 D Files × +
Y₂ Q SSA	🛞 🛞 🖌 🎦 🔍 Search
SSA_840D_1 mmmdev.ssa_sinumerik_derived_type_01 Kartal, 34870, Istanbul, Asia, Turkey	Type Name
	mconf_config.xml
SSA_840D_2 mmmdev ssa sinumerik derived type 01	*

Figure 5-4 Fleet Manager files tab

- 5. Press "Upload".
- 6. Select your identSNAPSHOT.
- 7. Press "Open".

5.2 Handling of identSNAPSHOT file

Note

Name of identSNAPSHOT

The name of identSNAPSHOT must be like one of these below:

- <filename>_config.xml

 i.e: SPG2019052401933_config.xml
- <file_name>_config_<DD-MM-YYYY_HH-MM-SS-SSS>.xml i.e:000060161897FC000014_config_01-04-2020_21-39-58-101.xml

5.3 Asset Selection

The Asset Selection page is the main page of the app SINUMERIK Service Assistance. It offers an overview over all the connected controllers.

Note

Select one of the assets in the table, before choosing one of the main services of the app:

- Machine Transparency
- Machine Condition
- Machine Error Analysis

SIEMENS SINUMERIK Service Assistance					powered by MindSphere
ENS Asset Selection Machine Transparency	Machine Condition 🔒 Machine Error Analysis				X 😚 En
Asset Name †	Description	City	Asset Status 🛛 🔻	Connection Status 🔻	Configuration 🔻 Status
م	Q	Q			
 mmmdev 					
Alarm_ErrorTest_DoNotDelete2		Istanbul	_	රේම	_
Asset_Integrate_Client_Test 018 version DoNotDelete		Istanbul	⚠	ර්ම	08.04.2021
DEX_828Dsl_DoNotDelete	Kartal DEX TR	Istanbul	\triangle	୯ନ	02.07.2021
faruk_asset_5 DoNotDelete		Istanbul	\triangle	ර්ම	_
faruk_manual_data_asset DoNotDelete	Test 1.23.4.5-Test 1.23.4.5-Te	Istanbul	⚠	őð	A
 MMMR_SubTenant 					
Asset_Alarm_IP12_DoNotDelete			-	රේම	-
Asset_Alarm_JP67_DoNotDelete			-	ර්ම	-
gokhan_asset_MindConnect_Lib_Onb_togg_data_DoNotDe	let .	Istanbul	-	-	_
SSA_84000D_1_DoNotDelete	Doc Asset TEXT Control Test	Kiev	⚠	ර්ම	_
SSA_Alarm_840_Test_DoNotDelete		Istanbul		cr	26.08.2021
SSA_Alarm_FinalTest_DoNotDelete		Istanbul	\land	ර්ම	—
SSA_AlarmTest_DoNotDelete		Istanbul	\triangle	ර්ම	A
SSA_CMVM_DoNotDelete		Istanbul	\land	ර්ම	_
SSA Doc Asset DoNotDelete		Istanbul	٨		10.11.2021

Figure 5-5 Asset Selection

The following values are shown in a table:

- Asset Name
- Description
- City
- Asset Status
- Connection Status
- Configuration Status

You can search or filter the table after certain values.

Asset Status

Symbol	Meaning
\diamondsuit	A Warning has occurred when there is an organiza- tional disturbance or the controller is used in a user (service) or service (commissioning engineer) ac- cess level
	An Error has occurred when there is a technical dis- turbance or the controller is used in a manufacturer (development) or Siemens access level.
\bigcirc	Everything is okay when there is no disturbance and the controller is used in a key-switch access level.
	If CH1_MachineStatus/ SINUMERIK_CSPROTEC- TIONLEVEL is not configured, this symbol appears.

Connection Status

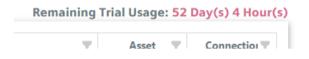
Symbol	Meaning
Ś	Controller is connected
ල්ම	Controller is disconnected
	If AgentOnlineStatus is not configured, this symbol appears.

Configuration Status

Symbol	Meaning
24.02.2021	Upload date of the last acknowledged IdentSNAP-SHOT file
\checkmark	Acknowledged IdentSNAPSHOT file in New Asset Selection (Page 84)
<u>A</u>	Symbolizes a change in the configuration.
	No configuration

Remaining Trial Usage

With this feature you can see the remaining days and hours during the trial period. This line is only visible if you have activated trial usage.



Interlinking to Change Protocol

By clicking the warning symbol on the configuration column, you will be directed to the Change Protocol page.



5.3.1 New Asset Selection

The "New Asset Selection" menu offers the opportunity to change the asset during the activation of a certain page. Also, It offers an overview over all the controllers.

The New Asset Selection menu is available for the following pages:

- Machine Error Analysis > Alarms
- Machine Error Analysis > Triggering Alarms for Disturbances

You can pop up the "New Asset Selection" menu by clicking on the arrow on the left hand side of the page. You can also collapse the "New Asset Selection" menu to reach full screen mode again.

SIEMENS	SINUMERIK Service	e Assistance										powered by MindSphere	анна» Д
SIEMENS	Asset Selection		fransparency 👔 Machi	ne Condition 🔒 Machin	e Error Analysis								😚 Engli
III > Machine Error Analys	sis 🕻 Alarms												
4/27 Q 558		Alarms											
Favorites	~	Select Date	~										
O ssa_asset_02_Do	*												
▲ ゐ —	^	SSA_TEST	_RW_DoNotDelete	iumber of Alarms within Last 7 Da									
O ssa_asset_04_Do	*	21		31									
▲ ゐ —	<u>^</u>	Active	▼ Clear Info	▼ Number Range	• Source		▼ Text		Marm Condition	•			! -
SSA_TEST_RW_DoN.	. *												
♦		List View	Chart View										
mmmdev	~		From \downarrow	Το 🕆	Duration	Alarm No	Text	Prio	Clear Info	Source	Number Range	From (Client)	5
<pre> ssa_asset_02_Do </pre>		Ċ1	Feb 24, 2023, 02:56:28 P	м	00:39:06	8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 1:00:22 PI	4
∆ å –		Ċ	Feb 24, 2023, 01:56:27 P	М	01:39:07	8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 12:00:21 F	M
Ssa_asset_04_Do		Ċ	Feb 24, 2023, 12:56:26 P	м	02:39:08	8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 11:00:20 A	м
∆ å –		Ċ	Feb 24, 2023, 11:56:28 A	d	03:39:06	8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 10:00:22 A	м
O ssa_bfc_DoNotDe	*	Ċ	Feb 24, 2023, 10:56:28 A	M	04:39:06	8064	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 9:00:22 Al	4
∆ & √		Ċ	Feb 24, 2023, 10:56:28 A	N	04:39:06	700004	Emergency Stop button	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 Al	4

Figure 5-6 Alarms with new asset selection menu

The following values are shown:

- Asset Name
- Location
- Description

Information about asset numbers

Filtered asset numbers and total asset numbers are shown on the left side of the search area:

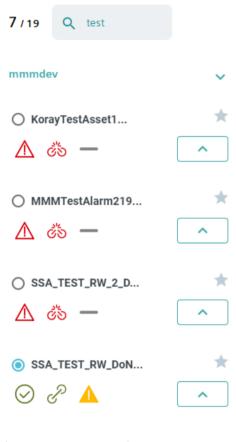


Figure 5-7 Asset numbers

Favorite assets

You can select favorite assets to make distinguishing easier for preferred assets:

- 1. In the upper right corner of the asset list, the outline of a quick favorite link (star) can be seen.
- 2. Click on the favorite link of the asset you like to make a favorite of.

2 / 30	Q RW	
Asset Fa	vorites	~
<u> </u>	∆_TEST_RW_2_D ॐ —	*
mmmde	v	~
_	TEST_RW_2_D ॐ──	*
⊖ssa ⊘c	_TEST_RW_DoN ア <u>ヘ</u>	*

The star is highlighted and the item has been chosen as a favorite.

Note

Deleting a favorite

If you want to remove a favorite, click on the favorite link (star) again.

Note

Browser cache

Please be aware that favorite assets are stored in the browser cache. If you delete your browser cache favorite assets will be lost.

5.3.2 Billing

5.3.2.1 Billing systems

After the SSA application is purchased and registration is done, it is required to activate billing toggles of SSA assets. By that way, SSA components (Machine Transparency, Machine Condition and Machine Error Analysis) are going to be enabled. Each component has a different pricing. Please check the product sheet from the Activation Page pop up, before enabling it:

Confirm Payment	×
The changes listed below will be saved. • Asset_20_07_2020_15_36_22 activated Machine Transparency	
By activating/deactivating the selected options, I hereby accept the terms and conditions as well as the price model: (Link to Productsheet) During the Trial period the use of charge.	of the application is free of
Activate for a fee/deactivate Cancel	

Figure 5-8 Pop up Activation page - confirm payment

5.3.2.2 Activation page

The activation page can either be accessed from Shopfloor Management Application or from the settings icon of the SINUMERIK Service Assistance. On the activation page it is possible to activate/deactivate services and see the summary of activated assets. You can search for assets and add or delete columns with the "Column Chooser."

Note

Please keep in mind that Activation Page can be used by SSA admins only.

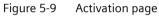
Note

Only assets created from MindConnectLib or BasicSinumerikAsset type are shown on the activation page.

Module description

5.3 Asset Selection

		_					20
IENS	Asset Selection	Machine Transparency	Machine Condition	A Machine Error Analysis			* 3
tal Active As							
tive assets v: tive assets v							
ctive assets v							
							-
							£
lame		†	Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analysis
۹.			Q	٩			
mmmde	iv .						
-55	5A_Asset_04_05_2021_13_13_1	1	840/ONE -	Automation First Asset	Active	Active	Active
001	1_Mimic_ganttChart_issue						
001	Owning ganteriar Castle		Select •		Inactive	Inactive	Inactive
- AM	1P			Different email address for GSP:			
	AMP_WorkpieceCount_Dof	lotDelete	828 -	AMP_WorkpieceCount_DoNotDelete	Active	Inactive	Inactive
	IP MachineStatusCache2 DoN	etDelete		AMP MachineStatusCache2 DoNotDelete			
744	IP_IMachinestatuscachez_Doiv	orbeiere	828 •	Ame_machinestatuscachez_bonotberete	Inactive	Inactive	Inactive
AM	IP_MachineStatusCache_DoNo	tDelete	828 -	AMP_MachineStatusCache_20_02_2021	Inactive	Inactive	Inactive
AM	IP_SingleTest_DoNotDelete						
200	In _onigre rest_bon to to refer		840/ONE •		Inactive	Inactive	Inactive
AM	IPAutomationMonitorAsset_D	NotDelete	Select •	AMPAutomationMonitorAsset_DoNotDelete	Inactive	Inactive	Inactive
AM	IPAutomationTuningAsset Do	NotDelete		AMPAutomationTuningAsset DoNotDelete		-	_
			Select •	and a second second	Inactive	Inactive	Inactive
Ara	aAsset_08042021_DoNotDelet		Select •	test is wops !+%&=)(?, Updated by sharer sitetest is wops	Inactive	Inactive	Inactive
Ass	set_03_05_2021_16_46_12					-	
			Select •		Inactive	Inactive	Inactive
Ass	set_03_05_2021_19_05_24		Select •		Inactive	Inactive	Inactive

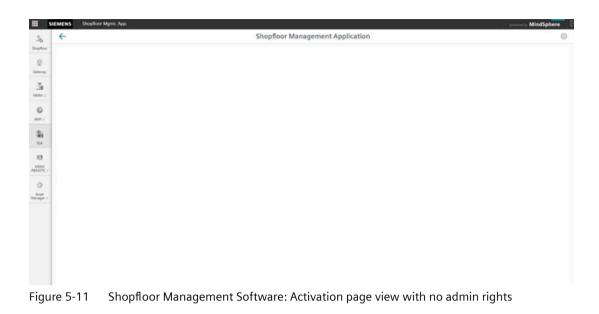


-	Shop	floor Management Applicatio	m		
Name	* Mailtine Model	Description	Machine Transperency	Machine Condition	Machine Trear Analysis
۵.	Q.	Q.			
+ annender, roet					
-154, Austr, 21, 98, 2121, 11, 21, 18	Supt	Asset description text	E terter	E tatta	Transform
55A,Amet,25,96,2521,11,21,31	Search -	Asset description text	E tatta	E tatta	E hanne
556, Austr, 21, 98, 2121, 11, 21, 87	Seatt .	Asian description text	E hatta	E harma	E barter
RAAMCHARDUN AUT	Seet	Asset pescription hert	a hada	E halles	E hatter
RAAMCRURALITERAAR	teach .	Asset description text	a name	E hanna	E tarter
-154,Aust,21,08,2029,11,22,20	tanth .	Asset description test	a name	E name	E rente
554, Aurel, 21, 96, 2121, 11, 22, 49	Sardt .	Asset description text	a name	E tarte	E harma
15A,Ame,25,96,2121,11,20,01	Sayat	Asset description test	and a second	E hanna	E testes
ASA, Amerika Malaka Unaka Pr	face	Assait description text	E teste	E verter	E hantes
454,Aust.25,01,2527(1,25,37	fram	Asset: description text	and a sector	E hantes	E hartes
-054, Aust. 25, 06, 2025, 11, 22, 45	ing .	Asset description text	E hadhar	E tester	E hetter
45A,Aune,21,06,3121,11,23,38	hands -	Asset description test	E tarter	E hanna	E hatte
32A,Aunt,21,96,2021,11,24,13	here.	Asset description test	a factor	I take	Tester (

Figure 5-10 Shopfloor Management Software: Activation page view

Note

Please keep in mind that if SSA admin right are missing, the user will see an empty page in Shopfloor Management View.



Choosing machine model

In the table of the activation page it is also possible to choose a valid machine model for the listed assets. You can select a valid machine model by choosing a control in drop down menu.

Adding extra column from Column Chooser

1. Press "Column Chooser".

		国
Machine Transparency	Machine Condition	Machine Error Analysis



- 2. Select checkbox to add the desired column.
- 3. Close the "Column Chooser".

Showing active assets as a count

With this feature, you can learn how many assets are active and active with MT(Machine Transparency), MC(Machine Condition) and EA(Machine Error Analysis). It is located on the left side of the top.

Total Active Assets: 7 Active assets with MT: 4 Active assets with MC: 4 Active assets with EA: 5

Note

Only assets which have prior been activated and saved, are counted as active in the counter.

Activating billing toggles of assets

Note

Activation from Shoopfloor Management Application

Activation operations also can be executed from the Shoopfloor Manangement Application by SSA admin. Only SSA admin will see the SSA button on the Shoopfloor Manangement Application.

Repeat the following procedure for all activations. In this example Machine Condition and Machine Error Analysis are activated for one asset.

1. Open the "Activation page" from "Asset Selection page" (only SSA admin).



2. Search the asset, which will be purchased.

ime	Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analys
mmmdev					
SSA_840D_1	840/ONE •	Asset for connecting my SINUMERIK Machine to SSA	Active	Inactive	Inactive

3. Select the Machine Model, if the asset is not onboarded ever.

					é
Name	1 Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analysis
Q, SSA_840D_1	Q	Q			
 mmmdev 					
SSA_840D_1	828 -	Asset for connecting my SINUMERIK Machine to SSA	Active	Active	Active
		Save Cancel			

4. Change toggles to "Activate".

SSA_840D_1	Q	Q				
mmmdev						
SSA_840D_1	840/ONE	-	Asset for connecting my SINUMERIK Machine to SSA	Active	Active	Active 📕 😔

5. Press "Save".



6. Press "Activate for a fee" or "Yes, I have a valid contract" (depends on billing system).

Activate for a fee	Yes I have a valid contract
--------------------	-----------------------------

7. A notification is shown that saving is successful. After the configuration is saved, you can see new icons (configured / not configured) next to the toggles.



8. Click "Asset Selection". You will see the assets in a list.

Asset Name 1 T	Description T	City 👻	Asset Status 🛛 🔻	Connection Status 🔻	Configuration 🔻 Status
Q. SSA_840D_1	٩	Q			
~ mmmdev					
SSA_840D_1	Asset for connecting my SINUMERIK Machine to SSA	Istanbul	⚠	ර්ම	<u> </u>

9. Services will be open for 1 minute. If the service didn't activate, you will see the following warnings:

Machine Tra	insparency
X This service is	not available for your asset.
Please contact your tenant adm	in for missing aspect configuration or activation of your assets from the application settings 🕷
Machine Transparency S	ervice provides:
Machine Cor	ndition
This service is	not available for your asset.
Please contact your tenant admin	n for missing aspect configuration or activation of your assets from the application settings 🕷
Machine Condition Servi	ce provides:
Q Details of your asse	¢
of Login Logs and Sec	urity Levels b
Operating Time	
💋 Boot Monitoring	
Figure 5-13	Error message - Machine Condition
Machine Er	ror Analysis
X This service is	s not available for your asset.
Please contact your ssa admin f	or missing aspect configuration or activation of your assets from the application settings 🕷
Machine Error Analysis	Service provides:
A Current Alarms	

Q Alarm History

Figure 5-14 Error message - Machine Error Analysis

Rules of purchase

Note

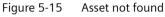
During trial period, you can access all services of an active asset, which is correctly configured.

- All activation will start immediately.
- All deactivation will start at the beginning of the next month.
- All services which are enabled after the last day of the month at 13:00 will be charged for the next month.
- Service usages will be calculated based on total usages days of service, after that it will be divided into days in the month. The result will be rounded to the upper digit.

Asset not found

If you try to get data of an asset, which does not exist in MindSphere (e. g: Asset not found (<u>https://mmmdev-ssa-mmmdev.eu1.mindsphere.io/#/Transparency/Overview?assetId=aa</u> // XmlEditor.InternalXmlClipboard:abffb0ad-8731-a519-d192-1743afd82a03)), you will see the following screen:

SIEMENS	SINUMERIC Service Association	10		MindSphere [*
SIEMENS	📰 Anati Indenine 👔 Marine Desagarany	and the state of t	A Machine Jones Analysis	× 0
			Asset Not Found	
			Assact is not faunt. To solect an assar, please go to Assat Selection page.	



Page not found

If you try to go to a meaningless page by editing the URL (e. g: Meaningless URL (<u>https://mmmdev-ssa-mmmdev.eu1.mindsphere.io/#/Transparency/meaninglessUrl</u>)), you will see the following screen:

SIEMENS	SNUMERIC Service	Antidante				MindSphere (*
SIEMENS	I And Sector	Mattine hargements	di tatia tatia	A Marine Law Analysis		× 0
				404	- Page Not Found	



5.4 Machine Transparency

5.4.1 Overview

The overview page for Machine Transparency service shows all clusters for this service. Each cluster shows a summary information for the subservice. By clicking on a specific cluster the page of this service will open.

SIEMENS SINUMERIK Service	e Assistance	powered by N	MindSphere [→
SIEMENS Asset Selection	Machine Transparency Machine Condition Machine Error Analysis		💥 🚯 English
III > Machine Transparency > Overview			
Basic Information Equipment Name: Equipment Number: Equipment Type: Product Group: Serialanumber CF Card;	Sinumenk 000049 	Software Components Name: SNUMERIK 8280 - 8280-M642 System KOU Version: V42.07 - 5704 - HF 02 RCK Version: 07.01.1300 RCK Version: 07.01.1300 RCK Version: 09.10.06 SMMMCS Version: 04.73.3.08	
End Customer Name: Manufacturer Name:	Endkunde TAC-Hersteller	SINUMERIK Operate Version: 04.07.04.02	
Logbook and Licenses Fist Commissionig: End of Commissionig: Logbook Entries: Logbook Entries: Machine ID:	2019/04/03, 9:36 AM 2019/04/03, 9:37 AM 13 2019/09/11, 7:28 PM Simumerik	Hardware Components Description: SINUMERK #280 PML/341.3 BASIC SINUMERK KULIPPU MLFR: 6FCS370-3AA30-0AA1 Number of Control Units and Nots: 1 Number of Line Modules: 0 Number of Total DrivelMotor Components: 1	
Change Protocol Last Change Date: Number of unask HV Changes: Number of unask Urchanges: Number of unask License Changes	2021/02/11, 2:41 PM 0 0 0		

Figure 5-17 Overview Machine Transparency

The following values are shown for each cluster:

- Basic Information:
 - Equipment Name
 - Equipment Number
 - Equipment Type
 - Product Group
 - Serialnumber CF Card
 - End Customer Name
 - Manufacturer Name
- Logbook and Licenses:
 - First Commissioning
 - End of Commissioning
 - Logbook Entries
 - Logbook Last Entry Date
 - Machine ID

- Change Protocol:
 - Last Change Date
 - Number of un-ack HW Changes
 - Number of un-ack SW Changes
 - Number of un-ack License Changes

• Software Components:

- Name
- System Software NCU Version
- PLC Version
- NCK Version
- SINAMICS Version
- SINUMERIK Operate Version

• Hardware Components:

- Description
- SINUMERIK NCU/PPU MLFB
- Number of Control Units and NXs
- Number of Line Modules
- Number of Motor Modules
- Number of Total Drive/Motor Components

5.4.2 Basic Information

The Basic Information page shows information on the controller and customer. The customer data is divided in three main groups:

- User data: this section contains information of the end customer/buyer of the controller
- **Manufacturer** data: this section contains important information on the manufacturer of the controller
- Dealer data: this section contains information on the OEM/dealer of the controller

SIEMENS	SINUMERIK Service Assistance					powered by MindSphere [→
SIEMENS	Asset Selection C Machine Tra	nsparency 🏦 Machine Condition	A Machine Error Analysis			💥 🚯 English
III > Machine Transparer	cy > Basic Information					
						ssa_demoset_one_DoNotDelete
Basic Infor	mation					
Equipment Name:		Sinumerik 000060132087810000A9				
Equipment Number: Equipment Type:						
Product Group: Serialnumber CF Card		SINUMERIK 828D 000060132087810000A9				
End Customer Name: Manufacturer Name:		Endkunde TAC-Hersteller				
User					^	
Customer-Id Name	YYYYYYY Endkunde		Street Zip-Code			
Contact Phone Fax	-		Location Country State	- Deutschland		
E-mail			URL			
Manufacturer					^	
Customer-Id Name	KDNR00000000001 TAC-Hersteller		Street Zip-Code	Frauenauracher Str. 80 91056		
Contact	Ansprechpartner		Location	Erlangen		
Phone Fax	+905380567677		Country State	Deutschland Bayern		
E-mail	test.test@OSRAM.com		URL			
Dealer					^	
Customer-Id Name	KDXXXX1 Handler		Street Zin.Code	Yakacik Caddesi -		*

Figure 5-18 Basic Information

5.4.3 Hardware Components

The Hardware Components page shows information on the hardware of the controller. You can choose one of the following views:

- Tree View
- List View

Tree View

The tree view in the Hardware Components page shows all the information in a hierarchichal form. You can choose one hardware component in the tree, i.e. NCU, and can see the relevant data on the right hand side.

SINUMERIK Service Assistance					powered by MindSphere [→
SIEMENS 🔚 Asset Selection 💽 Machine Transparency 🏫		Machine Error An			💥 😚 English
III > Machine Transparency > Hardware Components Hardware Components					SSA_tech_dist_2_Stop_1_DoNotDelete *
SNUMPER KULIPPU MCE: CFC372-00A Number of Line Monkes 1 Number of Line Monkes 1 Number of Line Monkes 5 Number of Total Delve/Moter Components: 19	JMERIK 8400 sl NCU720.3 30-0AA1	PN			
Tree View List View	II I			✓ Acknowledge	
SIEMENS SINUMERIK 840D si NCU720.3 PN					
CF Card		Property	Value SIEMENS SINUMERIK 840D sl NCU720.3 PN	Status	
SIEMENS SINUMERIK 840D sI TCU20.2		Version	C	~	
SIEMENS SINUMERIK OPERATOR PANELFRONT OP015		Component No	1	~	
SIEMENS SINUMERIK MCP 483C PN		FW Version	V16.00.00.01	~	
Control_Unit_1		MLFB	6FC5372-0AA30-0AA1	~	
Line_Module_2		HW Version	с	~	
Motor_Module_3 Motor Module 4		Serial No	T-E52004314	~	
Motor_Module_4					
Motor_Module_6		Admowledged Info Property	Value		
Motor_Module_7+Motor_Module_8		FW Version	V16.00.00.00 [2021-02-06T13:56:17.765]		

Figure 5-19 Hardware Components Tree View

List View

The List View in the Hardware Components page shows all relevant data of all hardware components in one table. You can filter the table and search for certain values. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

SIEMENS SINUMERIK Service Assistance									powered by MindSph
MENS Asset Selection C Machine Tran	sparency	Machine Condition	n 🛕						
Machine Transparency > Hardware Components									
									SSA_tech_dist_2_Stop_1_DoNotDe
Hardware Components									
	SIEM	ENS SINUMERIK 840D si NCU							
INUMERIK NCU/ PPU MLF8:		372-0AA30-0AA1							
Number of Motor Modules: Number of Total DrivelMotor Components:									
Tree View List View									
							🕅 Бере	ort to XLS	
Name	Ŧ	MLFB	Ŧ	HW Version 🛛 👻	FW Version	T Serial No	Ŧ	Info	
2		۹	Q						
SIEMENS SINUMERIK 840D sl NCU720.3 PN					Q	Q			
		6FC5372-0AA30-0AA1		C	Q. V16.00.00.01	Q. T-E52004314		Details	
CF Card		6FC5372-0AA30-0AA1		C -				Details Details	
		6FC5372-0AA30-0AA1 - 6FC5312-0DA00-0AA2			V16.00.00.01	T-E52004314			
CF Card					V16.00.00.01	T-E52004314 SPG2014021600821		Details	
CF Card SIEMENS SINUMERIK 840D sI TCU20.2		- 6FC5312-0DA00-0AA2		- D	V16.00.00.01 - V09.04.00.00	T-E52004314 SPG2014021600821 T-E46183250		Details Details	
CF Card SIEMENS SINUMERIK 840D sI TCU20.2 SIEMENS SINUMERIK OPERATOR PANELFRONT OP015		- 6FC5312-0DA00-0AA2 6FC5203-0AF03-0AA0		- D	V16.00.00.01 - - V09.04.00.00 -	T-E52004314 SPG2014021600821 T-E46183250		Details Details Details	
CF Card SIEMENS SINUMERIK B40D al TCU20.2 SIEMENS SINUMERIK OPERATOR PANELFRONT OP015 SIEMENS SINUMERIK MCP 483C PN		- 6FC5312-0DA00-0AA2 6FC5203-0AF03-0AA0 6FC5303-0AF22-0AA1		- D - 01	V16.00.00.01 - V09.04.00.00 - V02.02.08	T-E52004314 SPG2014021600821 T-E46183250 - T-E42015513		Details Details Details Details	
CF Card SIEMENS SINUMERIK BADD II TCU20.2 SIEMENS SINUMERIK OPERATOR PANELFRONT OP015 SIEMENS SINUMERIK MCP 483C PN Control Unit, 1		- 6FC5312-0DA00-0AA2 6FC5203-0AF03-0AA0 6FC5303-0AF22-0AA1 6FC5372-0AA30-0AA1		- D - 01 C	V16.00.00.01 V09.04.00.00 - V02.02.08 4503025	T-E52004314 SPG2014021600821 T-E46183250 - T-E42015513 T-E52004314		Details Details Details Details Details	
CF Card SEMENS SINUMERIK BADD H TCU20.2 SIEMENS SINUMERIK OPERATOR PANELFRONT (POPIS SIEMENS SINUMERIK MCP 483C PM Control.Ume,1 Line, Module,2		- 6FC5312-0DA00-0AA2 6FC5203-0AF03-0AA0 6FC5303-0AF22-0AA1 6FC5372-0AA30-0AA1 6SL3131-7TE28-0AA3		- D - 01 C D	V16.00.00.01 V09.04.00.00 V02.02.08 4503025 4503024	T-E52004314 SPG2014021600821 T-E46183250 T-E42015513 T-E52004314 T-E66029612		Details Details Details Details Details Details	

Figure 5-20 Hardware Components List View

Note

Exported hardware components

Please note, that the .xls file is downloaded to default file location, which is set from browser settings.

Note

SIOS link

By clicking on the MLFB number you can directly open the Siemens Industry Online Support (SIOS) page. This way you can find related user manuals, handbooks or engineering manuals for the hardware components.

Acknowledgment feature

The SINUMERIK Service Assistance application provides an acknowledgment feature for detecting the changes which may harm the machine or enlightening some crucial changes on machine side. With this feature, system can detect the following hardware changes:

- which hardware components have been replaced with new ones
- which hardware components have been removed or are missing

When an identSNAPSHOT file is uploaded to an asset for the first time, there is no warning about it. But when another identSNAPSHOT file is uploaded to the asset and if there are any changes between current and previous file, you will be warned with an unacknowledged sign on the component name and corresponding items' status section. Additionally, the differences between the current value and last acknowledged value of the components' items are shown.

SIEMENS	SINUMERIK Service	Assistance					powered by MindSphere
EMENS	Asset Selection	Machine Transparency	Machine Condition	Machine Error Analy			× 🚱 :
Machine Transp	parency 🔰 Hardware Com	ponents					
							SSA_840D_ Asset for connecting my SINUMERIK Machine to S
Hardwar	re Component	-					
Description:			UMERIK 828D PPU241.3 BASIC 5370-3AA30-0AA1				
Number of Moto	r Modules: Drive/Motor Components:						
Tree View	List View						
Q Search			1 ‡			Acknowledge	
+ AHardware	•			Property	Value	Status	
▼ ▲NCU/PI	LC			Name	Control_Unit_1	~	
 ANCU/ 	/PLC			Component No	1	 ✓ 	
A noi				FW Version	4743508	×	
	eripheral devices			HW Version	A	~	
▼ ▲ Drive/N				Serial No	P-P30050000	~	
	mics Runtime						
	3.SLAVE3.Control_Unit_1			Acknowledged Info			
	Control_Unit_1			Property	Value		
	Control_Unit_1			FW Version	5104005 [2021-04-22T00:06:39.79]		
				HW Version	H [2021-04-22T00:06:39.79]		

Figure 5-21 Acknowledgment Hardware Components

To acknowledge a component select the component in the tree view and click the acknowledge button.

You can directly navigate to the Change Protocol page by pressing the Change Protocol button.

5.4.4 GSP (Global Service Platform)

To give a better support to Siemens customers, Hardware components will be registered to the Global Service Platform (GSP) automatically by checking identSNAPSHOT file daily. If you have a new or updated identSNAPSHOT file, tenant admin or specified subtenant user will get a notification email after the ion of the component.

Registering subtenant user for email notification

1. Check the checkbox.

Name ↑	Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analysis
Q	Q	٩			
* mmmdev					
-SSA_Asset_05_05_2021_13_23_03	Select •	Automation First Asset	Inactive	Inactive	Inactive
001_Mimic_ganttChart_issue	Select		Inactive	Inactive	Inactive
- AMP		Different email address for GSP:			
AMP_WorkpieceCount_DoNotDelete	828 -	AMP_WorkpieceCount_DoNotDelete	Inactive	Inactive	Inactive
AMP_MachineStatusCache2_DoNotDelete	828 -	AMP_MachineStatusCache2_DoNotDelete	Inactive	Inactive	Inactive
AMP_MachineStatusCache_DoNotDelete	828 -	AMP_MachineStatusCache_20_02_2021	Inactive	Inactive	Inactive

2. Insert the email address.

AMP	Different email address for G	GSP: 🗸
	simple@example.com	\otimes

3. Press "Save".



4. Press "Activate for a fee" or "Yes, I have a valid contract" (depends on the billing system).

Activate for a fee	Yes I have a valid contract
--------------------	-----------------------------

5. A notification is shown that saving is successful.



Note

If subtenant user isn't determined, the tenant admin of the host tenant will get the notification.

Example of email notification

myregistration	ndustry@siemens.com	5	Reply	(Reply All	-> Forward	
To Oct	(ADV D EU TR SM AOP 2)				Thu 4/8/2021	2:25 P
Click here to download pictur	es. To help protect your privacy, Outlook prevented automatic download of	some pictures in this message.				
	Right dick or lag and hold have ke download pictures. To help.					
	Dear customer,					
	The data file for the equipment and its component					
	system - myRegistration	rred successfully to our	registra	bon		
	You can download your registration certificate registration ID RDE9-TCE2-B4NN under	of the equipment with th				
	https://myRegistration_siemens_com/app/produ	<u>ct/21591/form</u> .				
	Best regards,					
	Your myRegistration Team					
	You are receiving this email because you have an active user a	account at myRegistration				
		of Smillsonmann Smake Mann		: Joe		
	Semens Aktiengeselischaft: Chairman of the Supervisory Boar Kaeser, Chairman, President and Chief Executive Officer, Rola Mathias Rebellus, Raft P. Thomas, Judith Wese, Registered Commercial registries: Berlin-Charlottenburg, HRB 12300, Mar	nd Busch, Klaus Helmrich, Cedr offices: Berlin and Munich, Germ	uany;	1322		

Figure 5-22 GSP registration email

Checking the registration on the Myregistration website

- You can either go to the link (<u>https://myregistration.siemens.com/app/my-registrations</u>) directly or from the email.
- Registration certificate can be downloaded by clicking the button below.

Serial Number	Seriel Number CF I SID		Registration State	~	Registration Date	
---------------	------------------------	--	--------------------	---	-------------------	--

Figure 5-23 SIEMENS MyRegistration website

ī

Note

If you have no account for the registration website yet, it will be created and you will get an email to complete account registration.

5.4.5 Logbook and Licenses

The Logbook and Licenses page shows information on the Logbook of the controller and the installed and active licenses. You can choose one of the following views:

- Logbook
- Licenses

Logbook view

The logbook view shows all relevant information about the logbooks of the controller:

- First Commissioning: Date, when the controller was commissioned at the machine builder's site.
- End of Commissioning: Date, when the controller was running at the customer's site.
- Logbook Entries: Number of Entries in the logbook
- Logbook Last Entry Date: last date, when an entry was added to the logbook
- Machine ID: machine ID of the controller

	-	SINUMER	IK Service Assis	lance							powered by MindSphere
				Machine Transparent	ay 🏫 Machine Condition	Machine Error Analys					
≡ >)	lachine Transj	sarency 3	Logbook and Li	censes							
_											SSA_840D_1 This asset is used by SSA
	ogbool rst Commissio					6 AM			License Key	VC32-BA2K-AX8K-QTAC-GMA3-BK0K-EBEF-Z2TK-HPAF-TE3K- FGQ2-YB	
- 6	d of Commiss gbook Entries								Hardware Id	SPG2014040801427	
L.	gbook Last Er achine ID:								Product Group		
_									J		
	Logbook		Licenses								
	No	T	De	ite 🔻	Name	T Compa	ny 🔻	Text			Y
		9									
									lo data		



Note

Changing logbook

If you change a logbook manually on the controller, be aware to save the identSNAPSHOT file. Otherwise the changes will not be visible in the Logbook view.

Licenses view

The licenses view shows all relevant information about the active and installed licenses of the machine in one table. You can filter the table and search for certain values. Furthmore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

								powered by Minc	
MENS	Asset Selection	C Machine	Transparency	Machine Condition	A Machine Error Analysis				😚 Engl
Machine Trans	parency > Logbook and Li	censes							
								SSA_ This asset is	828D_2 used by SSA
_ogbook	and Licenses					License Key	VC32-BA2K-AXBK-QTAC-GMA3-BKKK-EBEF-Z21 HPAF-TE3K-FGQ2-YB	TK-	
nd of Commissi oqbook Entries:			2014/12/05, 11:26 AM			Hardware Id	SPG2014040801427		
ogbook Last En Aachine ID:			M531			Product Group			
				94					
Logbook	Licenses								
Logbook	Licenses							Di Eq	port to XLS
Logbook	Licenses			Descripti	on	T Serial No T	7 Active Licenses	R Eq ▼ Installed Ucenses	port to XLS
-		Ţ	Q.	Descripti	on	T Serial No T	 Active Licenses Q. 		
	MLFB			Descripti zusätzich 1 Achs				T Installed Licenses	
No	MLFB	0-0YB0			e/Spindel	۹	Q	Installed Licenses	
No	MLFB Q 6FC5800-0AA0	0-0YB0 0-0YB0		zusätzlich 1 Achs	e/Spindel chse/Hilfsspindel	Q, LiOp#000006	Q. 3	Installed Licenses Q 3	
No 1 2	MLFB Q 6FC5800-0AA0 6FC5800-0AA0	0-0YB0 0-0YB0 0-0YB0		zusätzlich 1 Achs zusätzlich 1 Positioniera	e/Spindel chse/Hilfsspindel itungskanal	Q, LiOp#000006 LiOp#000109	Q 3 4	Installed Licenses Q 3 4	
No 1 2 3	MLFB Q 6FC5800-0AA0 6FC5800-0A60 6FC5800-0AC1	0-0YB0 0-0YB0 0-0YB0 0-0YB0		zusätzlich 1 Achs zusätzlich 1 Positioniera zusätzlich 1 Bearbe	e/Spindel chse/Hilfsspindel itungskanal n je 1 Achse/Spindel	Q, LIOp#000006 LIOp#000109 LIOp#000003	Q 3 4 1	Installed Licenses Q 3 4 1	
No 1 2 3 4	MLF8 Q 6FC5800-0AA0 6FC5800-0AE0 6FC5800-0AC1 6FC5800-0AC7	0-0YB0 0-0YB0 0-0YB0 0-0YB0 0-0YB0		zusätzlich 1 Achs zusätzlich 1 Positioniera zusätzlich 1 Bearbe SI-Achse/Spindel, zusätzlicl	e/Spindel chse/Hilfsspindel itungskanal n je 1 Achse/Spindel Anwenderspeicher	Q. LiOp#000006 LiOp#000109 LiOp#000003 LiOp#000008	Q 3 4 1 8	Installed Licenses Q, 3 4 1 8	

Figure 5-25 Licenses

Note

SIOS link

By clicking on the MLFB number you can directly open the Siemens Industry Online Support (SIOS) page. This way you can find related user manuals, handbooks or engineering manuals for the installed licenses.

5.4.6 Software Components

The Software Components page shows information on the installed software of the controller. You can choose one of the following views:

- Tree View
- List View

Tree View

The tree view in the Software Components page shows all the information in a hierarchichal form. You can choose one software component in the tree, i. e., and can see the relevant data on the right hand side.

SINUMERIK Service	e Assistance						
IEMENS 📰 Asset Sele	ction C Machine Transparency	Machine Condition	A Machine Error Analysis				
Machine Transparency 💙 Softwar	e Components						
Software Compone	onto						
Name:		SNCU-HW					
System Software NCU Version:		V04.08 + SP 06 + HF					
SINAMICS Version: SINUMERIK Operate Version:		04.50.30.50					
Tree View List View					_		
Q, Search			::			~ A	cknowledge
→ SNCU-HW				Property	Value		Status
ASystemsoftware NCU				Name	Systemsoftware NCU		~
ADDON			_	Version	V04.08 + SP 06 + HF 08		A
> OEM							
				Admonifedged Info			
 USER 				Description	Melez		
					Value		
► USER					Value V04.05 + SP 06 + HF 08 [2020-03-30113:18:48.965]		

Figure 5-26 Software Components Tree View

List View

The List View in the Software Components page shows all relevant data of all software components in one table. You can filter the table and search for certain values. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

MENS Asset Selection	Machine Transparency	A Marhine C	Condition A									(
		-11	A									
Machine Transparency > Software Components												
												SSA 840
												This asset is used
Software Components												
System Software NCU Version: PLC Version:		V04.08 4 04.08.06	+ SP 06 + HF 08									
NCK Version:		87.13.05										
		04.08.06	6.08									
SINUMERIK Operate Version: Tree View List View												
									D	Export to XLS		
	Y	Link Name	Y	Version	Y	Internal Version	T	Source	Di T	Export to XLS		
Tree View List View Name	Ψ 		T Q	Version	T Q	Internal Version	T Q	Source	_			
Tree View List View Name				Version VD4.08 + SP 06 + HF 08		Internal Version		Source	_			
Tree View List View Name		Link Name							_	Info		
Tree View List View Name		Link Name		V04.08 + SP 06 + HF 08					_	Info Details		
Tree View List View Name Systemsoftware NCU SNAMBIR CNc-GN 31-3 Export		Link Name		V04.08 + SP 06 + HF 08 V04.08 + SP 06 + HF 08		04.08.06.08.004			_	Info Details Details		
Tree View List View Name Systemschesee NCU SINAMIRIC CNC-5W 31-3 Esport PLC		Link Name		V04.08 + SP 06 + HF 08 V04.08 + SP 06 + HF 08 04.08.05.03		04.08.06.08.004			_	Info Details Details Details		
Tree View List View Name Systemothave NCU SNUMERC CNC-59(31-3 Export PLC PLC		Link Name		V04.08 + SP 06 + HF 08 V04.08 + SP 06 + HF 08 04.08.06.03 04.08.06.03		04.08.06.08.004 04.08.06.03			_	Info Details Details Details Details		
Tree View Lat View Name Systemschare NCJ SINUMERC/CV-09 313 Equat PLC IT-29NCP		Link Name - - - -		V04.08 + SP 06 + HF 08 V04.08 + SP 06 + HF 08 04.08.06.03 04.08.06.03 32.81.44		04.08.06.08.004 - 04.08.06.03		- - - cpu317.bin	_	Info Details Details Details Details Details		
Tree View List View Name Q. Sptamothew ICU SMAMERC CIC-Stra 1-3 Equat PiC PiC 317-3PICP 317-3PICP		Link Name - - - -		V04.08 + SP 06 + HF 08 V04.08 + SP 06 + HF 08 04.08.06.03 04.08.06.03 32.81.44 00.02.03		04.08.06.08.004 04.08.06.03		- - cpu317.bin BootCode-SOC1-023.bin	_	Info Details Details Details Details Details Details Details		
Tree View Lbt View Name Q. Systemschware NCU SINAMERICAC 98 13 15 (port RC 317-3PNOP 317-3PNOP 317-3PNOP 9 (2013)-3415		Link Name		V04.08 + SP 06 + HF 08 V04.08 + SP 06 + HF 08 04.08.06.03 04.08.06.03 132.81.44 00.02.03 04.08.23		04.08.06.08.004 		- cpu317.bin BootCode-SOC1-023.bin fb15,317,3.pic	_	Info Details		

Figure 5-27 Software Components List View

Note

Exported software components

Please note, that the .xls file is downloaded to default file location, which is set from browser settings.

Acknowledgment feature

The SINUMERIK Service Assistance application provides an acknowledgment feature for detecting the changes which may harm the machine or enlightening some crucial changes on machine side. With this feature, system can detect the following software changes:

- which softwares at the machine is upgraded/downgraded
- which new softwares are added/removed

When an identSNAPSHOT file is uploaded to an asset for the first time, there is no warning about it. But when another identSNAPSHOT file is uploaded to the asset, you will be warned with an unacknowledged sign on the component name and corresponding items' status section. Additionally, the differences between the current value and last acknowledged value of the components' items are shown.

Software (Name: System Software NC PLC Version: NCK Version: SINAMICS Version: SINUMERIK Operate		 72.06.00 - - - -				
Tree View	List View					
Q Search			1 1			Acknowledge
				Property	Value	Status
					Select a component to see the	ne details
				E Changelog		

Figure 5-28 Acknowledgment Software Components

To acknowledge a component select the component in the tree view and click the acknowledge button.

You can directly navigate to the Change Protocol page by pressing the Change Protocol button.

5.4.7 Change Protocol

The Change Protocol page offers information for detecting the changes which are important for experts or any user who cares the machines current state. With this feature, system can list the following changes:

- Software changes
 - which softwares at the machine is upgraded/downgraded
 - which new softwares are added/removed
- Hardware changes
 - which new hardware added
 - which hardware is removed or missing.
- License changes
 - which licenses are newly added
 - which licenses are missing

ME	NS	Asset Selection	Ø	Machine Transpor		Machine Condition	A Machine Error Analysis						9
11.	Terre Trans	anna 🦻 Changa Press										SSA_File_Test_DoNotDel	ete
		Protocol A 1980 Dampen A 1980 Oampen B Lionner Oampen			34 4964 284	елте, 9-14 Ам П Байнали	(T) Handware						
				(5) Licenses		Software	(1) Handware						
	Ψ.	Item Name	Ŧ	Change Date:		Path.	(1) Handware	Ŧ	Current Value	Ŧ	ų		
	9.	Hern Name	7 Q	Change Date		Path	(U) Handware		Current Value	v	ų		
		Hans Name ertSoCourt	0	Change Date	÷	Path Q	invlator i finalnet patijetivčavet		Correct Value	v	*		
	9.		0.	Change Date	+ B	Potts Q almitigEts/almitigEts/conver/30			Corrent Value	Ŧ			
	9 9	ertSeCount	9	Change Date	P 0 4	Path Q almingEnt/almingEnt.come(3D) almingEnt/almingEnt.come(3D)	emulation 1 provided part/pertiseCount		1		A		
	9 9 9	ertSeCourt gpCourt	9	Change Date		Pads Q almitydist, almitydist, canwal (20 almitydist, almitydist, canwal (20) almitydist, almitydist, canwal (20)	umulation 1 (football part)/orthoCount umulation 1 (football part)/ppCount		1		*		
	6 6 6	ertSeCount ppCount ppOspName	9	Change Date 2021/02/10 814 A 2021/02/10 814 A		Path Q. antightspanipptscoreads antightspanipptscoreads antightspanipptscoreads antightspanipptscoreads antightspanipptscoreads	envlation 1 (Prochod part/part/softwore) envlation 1 (Prochod part/part/softwore) envlation 1 (Prochod part/pg/Cop/Cop/		l 1 30 simulation 1 (finished gard)		A A A		
	4 6 6 6 6	ertSeCourd ppCourt ppOtpName ppMttp	0	Change Date 2521/02/10 3:14 A 2521/02/10 3:14 A 2521/02/10 3:14 A 2521/02/10 3:14 A		Path G S antifyEntionNyEntionnel10 antifyEntionNyEntionnel10 antifyEntionNyEntionnel10 antifyEntionNyEntionnel10	umulation 1 (Frontikel participation annulation 1 (Frontikel participationer annulation 1 (Frontikel participationer annulation 1 (Frontikel participation)		1 1 20 umulation 1 (throbed part) 6FC3800-04F25-01(to		A A A A		
	4 (5) (5) (5) (5) (5)	ertSeCount ppCount ppCount poSupName poSath ppSatiaTep	0	Change Date 2021/02/10 1014 A 2021/02/10 1014 A 2021/02/10 1014 A 2021/02/10 1014 A		Path G S antifyEntionNyEntionnel10 antifyEntionNyEntionnel10 antifyEntionNyEntionnel10 antifyEntionNyEntionnel10	simulature 1 (Provided part)/profile/Count amylature 1 (Provided part)/ppCount amylature 1 (Provided part)/ppCog/Form amylature 1 (Provided part)/ppCog/Form amylature 1 (Provided part)/ppCog/Form/for and Mylacture (PZ)/profile/Count		1 1 20 umulation 1 (throbed part) 6FC3800-04F25-01(to		4 4 4 4		

Figure 5-29 Change Protocol

The Change Protocol page displays all software, hardware and license changes that are coming from differences of each identSNAPSHOT file. Change Protocol items are labeled with hardware, software and licenses tags. The Change Protocol table can be filtered by "Item Name", "Change Date", "Path", "Current Value" and "Acknowledge status". You can search items by name, change date, path and current value.

Changed Item History

You can see the detailed history of each component item by clicking on the list. On the right hand side of the list the "Changed Item History" with details is displayed.

Changed Item History 🗙 🗙									
Current Version at 2020/04/01	, 4:36 PM								
Item Name	Value								
name	CYCLES								
version	04.10.83.00								
Previous Version at 2020/04/07	Previous Version at 2020/04/01, 4:18 PM								
Item Name	Value								
name	CYCLES								
version	04.09.83.00								
Previous Version at 2020/04/01	Value								
item Name									
name	CYCLES								
version	04.08.83.00								
Previous Version at 2020/04/01	1, 3:53 PM								
Item Name	Value								
name	CYCLES								
version	04.05.83.00								

Figure 5-30 Changed Item History

Acknowledge changed items

The page summary window displays the last date, when the identSNAPSHOT file was uploaded, the number of unacknowledged hardware, software and Licenses changes as a summary.

1. Select the unacknowledged entries you would like to acknowledge. All unacknowledged items are marked with the following symbol:



2. Active the checkbox in the left column of the table.

- 3. Press the button "Acklowlege Changes".
- 4. Confirm the acknowledgment by pressing the button "Confirm"

Do you confirm? ×							
Selected changelog almPgiErt/alm 		2	/OPC UA/ertSwCount				
	Confirm	Cancel					

Figure 5-31 Confirmation acknowledgment

The selected entries are now marked as acknowledged.



It is also possible to acknowledge all items at once by pressing the button "Acknowledge All Changes" without selecting any item.

5.5 Machine Condition

5.5 Machine Condition

5.5.1 Overview

The overview page for Machine Condition service shows all clusters for this service. Each cluster shows a summary information for the subservice. By clicking on a specific cluster the page of this service will open.

SIEMENS SINUMERIK Service Assistance	kce		powered by MindSphere
SIEMENS 📰 Asset Selection 🕑 Ma	Machine Transparency 🏫 Machine Condition 🔺 Machine Error Analysis		💥 🚱 Englist
Matchine Condition Yourview Process Data NCR Type I Device Type: Hull Vesion: Number Aver of Channel 1: Drivet cyclic: NC ready:	8400 si NCU 04.05.06.08 5 Yes Yes	Security Level Development (1): Of M (Commissioning (2): Customer Versions (3): Customer Programmer (4): Customer Qualified Operator (5):	ssa_demoset_one_DoNotDelete 016110 (d130d1365d) 01013 01011 015116 0120120
Operating Time Machine On: Production:	09:15 / 709:15 d Musuum] (d / 30d) 100 % / 100 % 00:00 / 416:15 d Musuum] 0 % / 59 % percentage values are time slices related to d / 30d	Boot Monitoring Last boot event: Time since last boot event: No of boot event: Maantime letimem boot events:	Feb 8, 2021, 10:59/13 PM 6 days 10:61 Ahmm 0 1981 (44) (4 (13:00) 30:563) 2 days 10:62 Min.mm

Figure 5-32 Overview Machine Condition

The following values are shown for each cluster:

- Process Data:
 - NCK Type/Device Type
 - HMI Version
 - Number Axes of Channel 1
 - Drives cyclic
 - NC ready
- Security Level:
 - Development
 - OEM/Commissioning
 - Customer Service
 - Customer Programmer
 - Customer Qualified Operator

- Operating Time:
 - Machine On
 - Production
- Boot Monitoring:
 - Last boot event
 - Time since last boot event
 - No. of boot events
 - Meantime between boot events

5.5.2 Process Data

The Process Data page offers a graphical view of variables of the controller over a certain period.

Setting up a graph

To set up a graph proceed as follows:

1. Select a time range in the drop down menu "Selected Time Range".

Note

Restriction on time range

Please note, that if you select 30 days as time range, there will be a note to use a smaller date range (max. 7 days).

- 2. Select one or several units (maximum three units).
- 3. Select one or several Aspects. One Aspect may consist of several variables itself.



Figure 5-33 Process Data

The constructed graph shows the change of the variables over the selected time range. You can zoom in and out of the graph by marking a rectangular area with the mouse.

Machine indicators

Note

To learn more about the meaning of variables, click on the trademark symbol (i button).

Indicators	Variables
Motor Temperature	AX01_Motor_TempSP01_Motor_Temp
Machine Alarms	NrOfAlarms
Override Status	Feedoverride
	Spindleoverride
Machine Status	MachineStatus
Program Status	NCProgramStatus
	OpMode
	ProtectionLevel
	StopCond
Online Status	OnlineStatus

If you reach the limitation of indicator selection, you will see the following warning:

SIEMENS	SINUMERIK Service	Assistance		powered by MindSphere [→
SIEMENS	Asset Selection		A Machine Condition	💥 🚯 English
Adding Condition Addi	ata ^{fype:}	8400 pl (400) 06.03.23.00 7 No Yes	Machine Indicators: Machine Alama Machine Alama Override Status Machine Status Machine Status Colline Status Detailed Machine&Drive Sta	bfc-to-ssa-eZe-alexa_DoNotDelete
Display limita	ations has been reac	hed. Please refresh your sel	ction.	

Units of aspects

Aspects	Variables	Units
Basic Configuration	Feedoverride	%
	Spindleoverride	%
	NCProgramStatus	One
	Opmode	One
	ProtectionLevel	One
	StopCond	One
	NrOfAlarms	Number
Machine Status	MachineStatus	One
Online Status	onlineStatus	boolean
CSM_General_Info	All variables	One
CSM_AX/SP	Drives_Status	One
	Motor_Temp	°C
	ImpulseEnable_PLC	One
	ControlConfirmActive_NC	One

The units of aspects are listed the following table:

5.5.3 Security Level

The Security Level page offers an overview of users of the machine with different access levels. If there is a problem with the control, the service technician can monitor which person was working at the control at what time.

Setting up a graph

To set up a graph proceed as follows:

1. Click on the graph icon, if it's not already activated.



 Select a time range in the drop down menu "Selected Time Range". A graph shows how many times a user with a certain access level has used the control.

SIEMENS SINUMERIK Service	Assistance			powered by MindSphere
Asset Selection	Machine Transparency	hine Condition 🔥 Machine Error Analysis		💥 😽 Englis
> Machine Condition > Security Level				
				ssa_demoset_one_DoNotDelete
Security Level Development (1): Odd (Commissionia (2): Customer Service (3): Customer Programmer (4): Customer Qualified Operator (5):			Coversity Development Trained operator Qualified operator Programmer Frogrammer	
Selected Date Range: < 2021-02-01 - 2021-0	2-28 >			
iii ≡				Export to XLS
Europei zarozei zarozei zwazei i	29/021 2//2021 2//2021 2//		วออง เปรียดออง บารักออง บารักออง บารักออง บริษัตออง เปรียดออง บริษัตออง บริษัตออง บริษัตออง บริษัตออง บริษัตออง	ะา วอฟอลา วอร์ออา วอร์ออา วอร์ออา

Figure 5-34 Security Level Graph

Table of values

1. Click on the table icon, if it's not already activated.



A table shows start time and end time of usage, the duration and the access level of the user. It is possible to search for values in the search box above the table. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

SIEMENS SNUMERIK Service Assis	ander		, personal MindSphere
EMENS 🔠 Asset Selection 🦉	Machine Transportency 🕋 Machine Condition 🛕 Machine Trans Adalphie		× 🚯 144
 Martine Confilmer 3: Security Level 		10401	ssa_demoset_one_DoNotDelete
Security Level Bringeren (1) OVI Commission(20) Continen Experise (20) Continen Experise (20) Continen Experise (20) Continen Experise (20) Continent Continent (20) C	010/11 (41)041966) 0103 01031 01076 011/21	Stelled question Guartine guestion Registrone	Community reports - Community reports - Server .
ai =	1.16	Duration [Workering]	Security Level
			q
6 8. 2021. 5:55:32 PM	Feb 28, 2021, 11:59:59 PM	498.6427	
o 8. 2024. 5:55:27 PM	PHD ARE DOD. I LONGE PH		Operator
	Fab 8, 2021, 5:55:02 PM	00:00:05	Operator Qualified operator
6 8. 2021, 5:51:54 964		00:00.03	
	Feb 8, 2021, 5:65:02 PM		Qualified operator
eo 8. 2021. 3.14.56 PM	Feb 8, 2021, 5:55:32 PM Feb 8, 2021, 5:55:327 PM	00:00.33	Qualified operator Programmer
eo 6. 2021, 3.1456 PM eo 8. 2021, 3.1451 PM	Feb 8. 2021; 5:55:22 PW Feb 8. 2021; 5:55:27 PW Feb 8. 2021; 5:55:54 PW	00:03.03 02:36:56	Qualified operator Programmer Operator
eo 8, 2021, 3.1456 PM eo 8, 2021, 3.1451 PM eo 8, 2021, 3.1046 PM	Fab 8, 2021, 555-22 Per Fab 8, 2021, 555-22 Per Fab 8, 2021, 553-52 Per Fab 8, 2021, 553-54 Per Fab 8, 2021, 513-56 Per	00.03.03 02.36.58 00.06.05	Qualified operator Programmer Operator Qualified operator
eb 6, 2011, 31456 PM eb 6, 2011, 31451 PM eb 8, 2011, 31046 PM eb 8, 2011, 31046 PM	Kala B. 2021, 5.05.02 Ped Fala S. 2021, 5.05.02 Ped Fala B. 2021, 5.05.12 Ped Fala B. 2021, 5.05.15 Ped Fala B. 2022, 1.04.55 Ped Fala B. 2022, 3.14.51 Ped	006333 023656 006005 006465	Qualified operation Programmer Operation Qualified operation Programmer
Feb 8, 2021, 55154 PM Feb 8, 2021, 5.1556 PM Feb 8, 2021, 3.1545 PM Feb 8, 2021, 3.1545 PM Feb 8, 2021, 3.1546 PM Feb 8, 2021, 3.1546 PM Feb 8, 2021, 121654 PM	Fails 8, 2021, 1635-02 Peak Fails 8, 2021, 555-02 Peak Fails 8, 2021, 555-56 Peak Fails 8, 2021, 515-56 Peak Fails 8, 2021, 516-56 Peak Fails 8, 2021, 516-56 Peak	000033 023656 000005 005465 000004	Qualified operation Programmer Qualified operation Qualified operation Programmer Qualified operation

Figure 5-35 Security Level Table

5.5.4 Operating Time

The Operating Time page offers a graphical and a list view of power on, power off and operating time of the controller over a certain period.

Setting up a graph

To set up a graph proceed as follows:

1. Click on the graph icon, if not already activated.



2. Select a time range in the drop down menu "Selected Time Range". A graph shows how many times a user with a certain access level has used the control.

SIEMENS	SINUMERIK Service Assistance		powered by MindSphere
SIEMENS	Asset Selection 💽 Machine Transparency 🏫 Machine Con	lition 🛕 Machine Error Analysis	💥 🚱 Englist
			ssa_demoset_one_DoNotDelete
Machine On: Production:	1025 / 3839 (bhom 1006 v / 54 % 0051 / 0051 (dhhom 8 % / 0 % percentage values are time		ak (500 h), 20k (10051 h)
Selected Date Range:	< 2021-02-01 - 2021-02-28 >		-
\$ ≡			8 Export to XLS
23 20 15 10 2/1/2021 2/2/20		2011 2/1/0201 2/12/0201 2/14/0201 2/14	ออง 27150021 27140001 27140001 27140001 2000001 2017001 2020001 2020001 2044001 2050001 2044001 2077001 2080001
			Not Operating Time Power Off

Figure 5-36 Operating Time Graph

You can zoom in and out of the graph by marking a rectangular area with the mouse.

Table of values

1. Click on the table icon, if not already activated.



The table below shows the start and the end times for power on, power off and operating time of the controller. Furthermore the duration and the machine status are shown. It is possible to search for values in the search box above the table. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

SIEMENS SINUMERIK Service	e Assistance			powered by MindSphere
EMENS Asset Selection	Machine Transparency 🏠 Machine Condition	ion 🔺 Machine Error Analysis		💥 🚯 Engl
Machine Condition > Operating Time Operating Time Machine On:	10:25 / 188:39 [dihamm] (d 1009 / 545	a/30d)	725(681061)	ssa_demoset_one_DoNotDelete
Production:	00:51 / 00:51 [d hh:mm] 8% / 0% percentage values are time slices	s related to d / 30d	20	0 % (D051 N)
Hected Date Range: < 2021-02-01 - 2021				8 Export to XLS
	↓ To	Duration	n [hh:mm:ss]	Machine Status
rom	+ 10			
rom	+ 10			٩
	4 10 Feb 28, 2021, 11:59:59 PM	424:15:5	59	Q, techn. Disturbance
ab 11, 2021, 7:44:00 AM		424:15:5 66:55:30		
eb 11, 2021, 7:44:00 AM eb 8, 2021, 12:48:30 PM	Feb 28, 2021, 11:59:59 PM)	techn. Disturbance
eb 11, 2021, 7:44:00 AM eb 8, 2021, 12:48:30 PM eb 8, 2021, 12:48:24 PM	Feb 28, 2021, 11:59:59 PM Feb 11, 2021, 744:00 AM	66:55:30	5	techn. Disturbance Production
eb 11. 2021, 7:44:00 AM eb 8. 2021, 12:48:30 PM eb 8. 2021, 12:48:24 PM eb 8. 2021, 12:41:21 PM	Feb 28, 2021, 11:59:59 PM Feb 11, 2021, 7:44:00 AM Feb 8, 2021, 12:48:30 PM	66:55:30 00:00:06	5	techn. Disturbance Production org. Disturbance
eb 11, 2021, 7:44:00 AM eb 8, 2021, 12:48:30 PM eb 8, 2021, 12:48:24 PM eb 8, 2021, 12:48:24 PM eb 8, 2021, 12:41:16 PM	Feb 28, 2021, 11:59:59 PM Feb 11, 2021, 74:400 AM Feb 8, 2021, 12:48:30 PM Feb 8, 2021, 12:48:34 PM	66:55:30 00:00:06 00:07:03	5 5 5	techn.Disturbance Production org.Disturbance Production
eb 11, 2021, 7:44:00 AM eb 8, 2021, 12:48:30 PM eb 8, 2021, 12:48:32 PM eb 8, 2021, 12:41:14 PM eb 8, 2021, 12:41:16 PM eb 8, 2021, 12:41:16 PM	Fab 28, 2021, 11:59:59 PM Fab 1, 2021, 74:400 AM Fab 8, 2021, 12:4800 PM Fab 8, 2021, 12:4800 PM Fab 8, 2021, 12:41:21 PM	665530 008006 008783 008005	5 5 5 5	techn. Disturbance Production org. Disturbance Production org. Disturbance
HE 11, 2021, 7,4400 AM EE 8, 2021, 12,4830 PM BE 8, 2021, 12,4820 PM BE 8, 2021, 12,44121 PM BE 8, 2021, 12,44120 PM BE 8, 2021, 12,44130 PM BE 8, 2021, 12,44130 PM	Feb 28, 2021, 11:59:59 PM Feb 11, 2021, 74:400 AM Feb 12, 2021, 74:400 AM Feb 2021, 12:48:30 PM Feb 2021, 12:48:30 PM Feb 2021, 12:44:14 PM Feb 2, 2021, 12:41:16 PM	665530 00:00:06 00:07:03 00:00:05 00:00:05) 5 5 5	techn Disturbance Production org. Detarbance Production org. Detarbance Production
From Feb 11, 2001, 7:4400 AM Feb 8, 2021, 12:48:30 PM Feb 8, 2021, 12:48:34 PM Feb 8, 2021, 12:48:24 PM Feb 8, 2021, 12:48:44 PM Feb 8, 2021, 12:18:24 PM Feb 8, 2021, 12:18:25 PM	Feb 28, 2021, 11:5959 PM Feb 11, 2021, 724600 AM Feb 8, 2021, 724600 PM Feb 8, 2021, 724600 PM Feb 8, 2021, 724624 FM Feb 8, 2021, 724161 FM Feb 8, 2021, 724161 FM	665530 005006 006733 005005 006016	5 5 5 5 5 5	techn. Duturhance Production org. Disturbance Production org. Disturbance Production org. Disturbance production org. Disturbance

Figure 5-37 Operating Time Table

5.5.5 Boot Monitoring

The Boot Monitoring page offers a graphical and a list overview of boot events over a certain period.

Setting up a graph

To set up a graph proceed as follows:

1. Click on the graph icon, if not already activated.



2. Select a time range in the drop down menu "Selected Time Range". A graph shows how many times a certain boot event has occurred at the control.



Figure 5-38 Boot Monitoring Graph

Table of values

1. Click on the table icon, if not already activated.



A table shows the exact date and time, when a certain boot event occurred at the control. It is possible to search for values in the search box above the table. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

SIEMENS SINUMERIK Service Assistance	powered by MindSphere
SIEMENS 🔚 Asset Selection 💽 Machine Transparency 🏠 Machine Condition 🛕 Machine Error Analysi	s 🛞 English
	ssa_demoset_one_DoNotDelete
Boot Monitoring Last boot event: May 6, 2021, 10-40:16 AM Time since last boot event: 0 days 00.36 khram No of boot events: 21 16 / 175 (d) 303 / 3053) Meantime between boot events: 2 days 01:59 khram	Four Off Long Power Off Stort Power Off Stort Four Off Stort For Rest
Selected Date Range: < 2021.02-07 - 2021.05-04 >	8 Export to XLS
Date / Time	↓ Boot Type
	Q
Feb 1, 2021, 10:59:13 PM	raw data acquisition gap
Feb 1, 2021, 9:30:36 PM	raw data acquisition gap
Feb 1, 2021, 7:20:24 PM	raw data acquisition gap
Feb 1, 2021, 4:15:25 PM	raw data acquisition gap
Feb 1, 2021, 2:21:06 PM	HMI Restart
Feb 1, 2021, 2:14:23 PM	HMI Restart
Feb 1, 2021, 1:39:01 PM	HMI Restart
Feb 1, 2021, 1:27:11 PM	HMI Restart
Feb 1, 2021, 1:16:29 PM	HMI Restart
P 1 2 3002 2 20 00 004	The second se

Figure 5-39 Boot Monitoring Table

Depending on the including closed alarm, there are two different user interfaces of "Error Analysis" page. If asset includes ClosedAlarms Aspect, new user interface is shown. Otherwise, old user interface is shown.

Warning messages for asset without ClosedAlarms Aspect in the new user interface

Within the new user interface, when you select asset which does not have ClosedAlarms Aspect, the following warning message will be shown:



Figure 5-40 Error Message: There is no ClosedAlarms Aspect

Note

You can see the Error Analyses Page of the asset which does not have ClosedAlarms Aspect via SSA main page Asset Selection (Page 82).

Within the new user interface, when you select an asset without permission for Error Analysis, the following warning message will be shown:

Machine Error Analysis
⊗This service is not available for your asset.
Please contact your ssa admin for missing aspect configuration or activation of your assets from the application settings. 🛠 Machine Error Analysis Service provides: Alarms, Triggering Alarms for Disturbances

Figure 5-41 Error Message: No Permission

5.6.1 Machine Error Analysis for an asset with ClosedAlarms Aspect

Note

There is no Overview page for asset which has ClosedAlarms Aspect.

5.6.1.1 Alarms

The Alarms page offers a graphical and a list view of alarms provided by machines. This page is able to show alarms by filtering values, i.e. date range, source etc. Therefore this alarm monitoring page offers a quick and detailed communication between end user and system.

Module description

5.6 Machine Error Analysis

Setting up a list

To set up a list proceed as follows:

1. Click on "List View", if not already clicked.

List View

Then the List View of data will be displayed as shown below:

	Asset Selection			A Machine Error Ana	lysis							ж (
	Analysis 🕻 Alarms											
116 - 2023	3/16 🗸											
TEST	RW_DoNotDelete											
nt Alern Ni		Number of Alarms within Last 7 Days 20										
	• Clear mfo	• Number Range •	Source +	Text	Alarm Condition +							
View	hart View											ů.
		from 4	То	Duration		Alarm No	Text	Prio	Clear Info	Searce	Number Range	From (Client)
en (Feb 24, 2023, 12:56:28 PM		479:27:18		8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 1:00:22 PM
e		Feb 24, 2023, 11:56:27 AM		480.27.19		8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 12:00:21 PM
eb.		Feb 24, 2023, 10:56:26 AM		481:27:20		8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 11:00:20 AM
en i		Feb 24, 2023, 09:56:28 AM		482:27:18		8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 10:00:22 AM
e		Feb 24, 2023, 08:56:28 AM		483:27:18		8084	Period 1 of the test	100	CANCEL	/NCK	NCK General Alarms	Feb 24, 2023, 9:00:22 AM
eb.		Feb 24, 2023, 08:56:28 AM		483:27:18		700004	Emergency Stop button	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
e		Feb 24, 2023, 08:56:28 AM		483:27:18		701152	Tool not inserted	90	PLC Message	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
e		Feb 24, 2023, 08:56:28 AM		483:27:18		701816	Overcurrent trip	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ		Feb 24, 2023, 08:56:28 AM		483:27:18		701820	Overcurrent trip	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
e.		Feb 24, 2023, 08:56:28 AM		483:27:18		701831	Overcurrent trip	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM

Figure 5-42 Alarms: List view

Setting up a graph

To set up a graph proceed as follows:

1. Click on "Chart View", if not already clicked.

Chart View

Then the Chart View of data will be displayed as shown below. Additionally the Chart View has two sorting options:

- Occurrence
- Duration

Sorting by Occurrence

SIEMENS	SINUMERIK Servic	e Assistance	powered by MindSphere	₽ [→
SIEMENS	Asset Selection	💽 Machine Transparency 🏫 Machine Condition 🔺 Machine Error Analysis		😚 English
🔠 🗲 Machine Error Ana	lysis 🕻 Alarms			
27/27 Q Search		Alarms		
Favorites	~	2023/2/24-2023/2/24 🗸		
<pre>O ssa_asset_02_Do</pre>				
∆ & —		SSA_TEST_RW_DoNotDelete		
O ssa_asset_04_Do	*	Carrent Alarm Number Kaunber of Alarms within Last 2 Days 21 31		
∆ & -				
o	N 🕇	History • Clear Info • Number Range • Source • Text Alarm Condition •		•
● SSA_TEST_RW_Do	N	List View Chart View		
ZIA (G 🗸				
mmmdev	~			
-Asset_favourit	*		Occurrence O	Duration
∆ & −	<u>^</u>	Total Alarm Occurrence		
		8054 3000 1 • 045538	5 - 14:3	7:10
○ -Asset_favourit ▲ 🗞 —	*	3000 1-0455.05 4005 1-46500051.54		
<u>71</u> 68 —				
O -Asset_favourit	*	E 0001 1-00.03.50		
∆ & —	<u>^</u>	1 -000150 1 -000150 1 -000150 1 -000150		
		₹ 0003 1 · 001209		

Figure 5-43 Alarms: Chart View: Occurrence

Sorting by Duration

SIEMENS	SINUMERIK Servi	vice Assistance	
SIEMENS	Asset Selection	n 💽 Machine Transparency 🏫 Machine Condition 🛕 Machine Error Analysis	💥 😚 Englis
🖽 🗲 Machine Error An	alysis 🕻 Alarms		
27 / 27 Q Search		SSA_TEST_RW_DONOtDelete Current Alarem Number of Alarem within Last 7 Days	
Favorites	~	Corrent Autim Notice I Autims Wollin Call / Dags	
○ ssa_asset_02_Do ▲ ॐ —	*	History • Clear Info • Number Range • Source • Test Alarm Condition •	(R •
○ ssa_asset_04_Do	*	List View Chart Wee	Z
● SSA_TEST_RW_Do	N *	Total Alem Duration	O Occurrence O Duration
nmmdev	~	8 000 000 000 000 000 000 000 000 000 0	277:46:39 - 1
O -Asset_favourit ▲ 🗞 —	*	40053 646454 - 1 90 00 44546 - 1 27231 64546 - 1 46546 - 1	
○ -Asset_favourit	*	² 700004 0 04:58:16 - 1	
•Asset_favourit	*	701132 Cedente :] 70116 Addite :] 70110 Cedente :]	
∆ ॐ —	^	0 min 1K min 2K min 3K min 4K min 5K min 6K min 7K min 8K min 9K min 10K min 11K min 12K min 13K min	14K min 15K min 16K min 17K min

Figure 5-44 Alarms: Chart View: Duration

Export functionality

It is possible to export an excel file (*.xls). This button will be active, when there is data on a table. Additionally, export functionality works by considering filtered data.

Data export

To perform a data export proceed as follows:

1. Click on "Export" button in the List View.



	A	8		С	D	E	F	6	н	1		
1	From	To		Duration	Alarm No	Text	Prio	Clear Info	Source	Number Range	From(Client)	
2	Nov 30, 2021, 02:00:01 AM	Dec 9, 2021, 0	2:59:55 AM	216:59:54	53192	1 53192 «no text available»	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 30, 2021,	2:00:01 AM
з	Nov 30, 2021, 01:00:01 AM	Dec 9, 2021, 0	2:59:55 AM	217:59:54	53193	1 53193 «no text available»	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 30, 2021,	1:00:01 AM
4	Nov 30, 2021, 12:00:01 AM	Dec 9, 2021, 0	2:59:55 AM	218:59:54	53194	1 53194 «no text available»	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 30, 2021,	12:00:01 AM
5	Nov 29, 2021, 11:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	219:59:54	53195	1 53195 «no text available»	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	11:00:01 PM
6	Nov 29, 2021, 10:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	220:59:54	53196	1 53196 «no text available»	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	10:00:01 PM
7	Nov 29, 2021, 09:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	221:59:54	53197	1 53197 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	9:00:01 PM
8	Nov 29, 2021, 08:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	222:59:54	53198	1 53198 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	8:00:01 PM
9	Nov 29, 2021, 07:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	223:59:54	53199	1 53199 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	7:00:01 PM
10	Nov 29, 2021, 06:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	224:59:54	53200	1 53200 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	6:00:01 PM
11	Nov 29, 2021, 05:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	225:59:54	53201	1 53201 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	5:00:01 PM
12	Nov 29, 2021, 04:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	226:59:54	53202	1 53202 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	4:00:01 PM
13	Nov 29, 2021, 03:00:01 PM	Dec 9, 2021, 0	2:59:55 AM	227:59:54	53203	1 53203 <no available="" text=""></no>	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 29, 2021,	3:00:01 PM



Graphic export

It is also possible to print and export PNG, JPEG, PDF and SVG files for charts. Additionally, export and print functionality works by considering filtered data.

To perform a graphic export proceed as follows:

1. Click on below button in the Chart View.



Filtering for an alarm

The Alarm page has 6 filter mechanisms, working dynamically. These are listed below:

- Select Date
- Active/History
- Clear Info
- Number Range
- Source
- Text
- Alarm Condition

Select Date

The system can have data in different time range. To show related data in different time range, "Select Date" is used. "Select Date" has two main sections such as "UTC" or "Browser".

If you select UTC, a query is triggered for UTC+0. Otherwise, a query is triggered for UTC+TimeZoneOffset.

Today	<					Ap	ril 2022	2 - May	2022					>
Yesterday	5	м	Ŧ	W	τ	F	5	5	М	i.	W	T	F	s
Last 7 Days	APR					1	2	MA	ć					
Last 30 Days	3	4	5	б	7	8	9	1	2	3	4	5	б	7
This Month	10	11	12	13	14	15	16	8	9	10	(11)	12	13	14
ast Month	17	18	19	20	21	22	23	15	16	17	18	19	20	21
Custom	24	25	26	27	28	29	30	22	23	24	25	26	27	28
💽 Local 🔿 UTC								29	30	31				
✓ ×	00:00					23:59						All	Dav	

Figure 5-46 Select Date

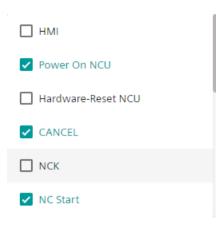
Active/History

The system can have closed or pending alarms. To show these alarms, Active/History is used. To list both alarms, click on "History". To list pending alarms, click on "Active".

Active	
History	

Clear Info

The system can have a variety of data for clearing info to show related alarms. "Clear Info" is used for this purpose has a multi selection combo box.



Number Range

The system can have a variety of data for number range and alarm number. To show related alarms, "Number Range" is used, which has a multi selection combo box.

✓ NCK General Alarms (0-9999)
NCK Channel Alarms (10000-19999)
NCK Axis/Spindle Alarms (20000-29999)
NCK Functional Alarms (30000-99999)
HMI System (100000-129999)
HMI OEM (130000-139999)

Source

The system can have a variety of data for source. To show data with each unique source, "Source" is used, which has a multi selection combo box.

NCK
PLC
HMI

Text

All alarms have an unique text. You can filter the list by the given text.

Text

Alarm Condition

Alarm condition includes 6 options to search for data. This search mechanism works by checking "Alarm No" on data.

Equals to
Does not equal to
Less than
Greater than
Less than or equal to
Greater than or equal to

For example, if you want to filter data which has alarm number 6020<x<6060.

- Select "less than" and give value: 6060
- Select "greater than" and give value: 6020

Clear all filters

After selecting one of the combo boxes of filter parameters, "Clear all filters" will appear and will be active. To reset all filters, click the "clear all filters" button. After cleaning filters, the button will disappear.



Creating favorites for filtered alarms

For filtered alarms, you can create favorites to make it more easy to distinguish preferred alarms. You can create your own user-defined alarm filters to monitor specific alarms.

- 1. In upper right corner of the alarms page, the outline of a quick favorite link (star) can be seen.
- 2. Select any filter, for example "Clear Info", "Number Range", "Source", "Text" and/or "Alarm Condition".
- 3. Click on the quick favourite icon and then on "Add to favorites"
- 4. Give a filter name and confirm.

าร								
14 - 2023/3/16	•							
TEST_RW_Dol	NotDelete Number of Alarms within Last 7 Days 20							
•	Clear Info	c • Text	Alarm Condition 🔹 Clear all filter					
ew Chart View	From 👃 To	Duration	Alarm No Text	Prio	Clear Info	Source	Number Range	Favourite1 Favourite2 Favourite3
Ċ	From	481:13:27		100	PLC Alarm	/PLC/PMC	PLC User Area	Add to favorites
ප	Feb 24, 2023, 08:56:28 AM	481:13:27	701152 Tool not inserted	90	PLC Message	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ)	Feb 24, 2023, 08:56:28 AM	481:13:27	701816 Overcurrent trip	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ	Feb 24, 2023, 08:56:28 AM	481:13:27	701820 Overcurrent trip	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ	Feb 24, 2023, 08:56:28 AM	481:13:27	701831 Overcurrent trip	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ	Feb 24, 2023, 08:56:28 AM	481:13:27	702300 Malfunction, fieldbus	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ	Feb 24, 2023, 08:56:28 AM	481:13:27	702315 Malfunction, fieldbus	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ	Feb 24, 2023, 08:56:28 AM	481:13:27	702325 Malfunction, fieldbus	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
Ċ	Feb 24, 2023, 08:56:28 AM	481:13:27	702409 Safety: Monitoring, wor	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM
e)	Feb 24, 2023, 08:56:28 AM	481:13:27	702410 Safety: Monitoring, wor	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 24, 2023, 9:00:22 AM

Figure 5-47 Favourites for filtered alarms

After confirmation selected filter has been highlighted, and the item has been chosen as a favorite.

Note

Deleting a fovourite

If you want to remove a favourite from the list of favourites, click on the garbage icon.

Note

Browser cache

Please be aware that favorites for filtered alarms are stored in the browser cache. If you delete your browser cache favorites for filtered alarms will be lost.

Restrictions for best usage for asset with ClosedAlarms Aspect

Please consider the following restrictions, in order to work with Machine Error Analysis with high quality:

- There should be max 400 active alarms.
- There should be max 100000 closed alarms.
- There should be max 1000 multiday alarms.

Active Alarms: Alarms are started but not finished.

Closed Alarms: Alarms are started and resolved in the same day. (UTC+0)

Multiday Alarms: Alarms are started and resolved in the different day. (UTC+0)

5.6.1.2 Triggering Alarms for Disturbances

The "Triggering Alarms for Disturbances" page offers a graphical and a list view of technical disturbances or Alarm Reaction / NC stop. Alarms within +/- 60 seconds are listed for that technical disturbances or Alarm Reaction / NC stop

Setting up a list

To set up a list proceed as follows:

1. Click on "List View", if not already clicked.

List View

Then the List View of data will be displayed as shown below:

	Siemens	AG SINUMERIK Service	e Assistance								powered by MindSphere
2	SIEMENS	Asset Selection		y 🏫 Machine Condition	A Machine Error Analy	sis					💥 😚 Engli
	> Machine Erro	or Analysis 🗲 Triggering Alar	ms for Disturbances								
	Triggering	Alarms for Distur	bances								
	Select Date	~									
	Clear Info	▼ Number Range ▼	Source 👻	Text	Alarm Condition	~					
	-SSA_Alarr	n_Test_DoNotDelete									
	List View	Chart View					Technical Disturbances Alarm Reaction / NC Stop				
		egin +/-60 Sec. at trigger event									*
	Fro	m 🕹	Alarm No Pric	•	Clear Info Text		Source	Number Range	From (Client)		
	> Tech	n. Disturbance May 10, 2022,	, 2:00:00 PM								
>	> Tech	n. Disturbance May 10, 2022,	, 1:40:00 PM								
	> Tech	n. Disturbance May 10, 2022,	, 1:30:00 PM								
	> Tech	n. Disturbance May 10, 2022,	. 1:10:00 PM								
	> Tech	n. Disturbance May 10, 2022,	, 12:10:00 PM								
	> Tech	n. Disturbance May 10, 2022,	, 12:00:00 PM								
	> Tech	n. Disturbance May 10, 2022,	, 11:10:00 AM								
	> Tech	n. Disturbance May 10, 2022,	, 10:20:00 AM								
	> Tech	n. Disturbance May 10, 2022,	, 10:00:00 AM								
	> Tech	n. Disturbance May 10, 2022,	, 8:30:00 AM								
									te.	msperpage 10 👻	1 - 10 of 23 < >

Figure 5-48 Triggering Alarms for Disturbances, Technical Disturbances, List View

You can switch between "Technical Disturbances" view and "Alarm Reaction/NC Stop" view.

Setting up a graph

To set up a graph proceed as follows:

1. Click on "Chart View", if not already clicked.

Chart View

Then the Chart View of data will be displayed as shown below.

This graph has additional feature to improve performance. This feature is pagination functionality.

You can navigate between pages of the graph.

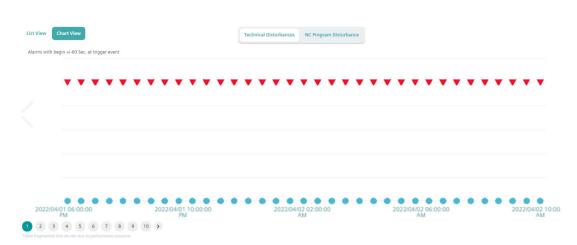


Figure 5-49 Triggering Alarms for Disturbances, Technical Disturbances, Chart View

You can switch between "Technical Disturbances" view and "Alarm Reaction/NC Stop" view.

Export functionality

It is possible to export an excel file(*.xls). This button will be active, when there is data on a table. Additionally, export functionality works by considering filtered data.

To perform a data export proceed as follows:

1. Click on "Export" button in the List View.



Filtering for an alarm

The "Triggering Alarms for Disturbances" page has 6 filters mechanisms working dynamically. "Triggering Alarms for Disturbances" page has same logic as "Alarms" page. For a detailed description, see Alarms (Page 117).

Creating favorites for filtered alarms

"Triggering Alarms for Disturbances" page has same logic as "Alarms" page. You can also create favorites for filtered alarms. For a detailed description, see Alarms (Page 117).

5.6.1.3 Alarm Trend

The "Alarms Trend" page offers a list view of trends of selected alarms in the selected date range. Alarm Trend data can be filtered as Active or History.

Activating Alarm Trend

1. Click on the Alarm Trend icon, which exists on the pages "Triggering Alarms for Disturbances" and "Alarms".



Alarms with the same numbers will be listed in the selected date range.

	Asset Selection	n 💽 Machine Transparen	cy 🗠 Machi		Machine Error Analysis						67
	Error Analysis > Triggering A										0
Machine	Error Analysis 🖌 mggering A	names for Distorbances									
elect Date	*										
listory	*										
Related	Alarm										
Alarm No 150201		Text Communication to /NCK failed	Prio 100		Clear Info HMI	Source /NCK		Nu	mber Range		
	From U	То	Duration	Alarm No	Text	Prio	Clear Info	Source	Number Range	From(Client)	x
										. reinforcently	
	Dec 13, 2021, 12:13:49 PM	Dec 13, 2021, 12:14:12 PM	00:00:22	150201	Communication to /NCK failed	100	HMI	/NCK		Dec 13, 2021, 12:13:49	PM
	Dec 13, 2021, 12:05:12 PM	Dec 13, 2021, 12:05:35 PM	00:00:22	150201	Communication to /NCK failed	100	HMI	/NCK		Dec 13, 2021, 12:05:12	PM
	Dec 13, 2021, 12:03:40 PM	Dec 13, 2021, 12:04:02 PM	00:00:21	150201	Communication to /NCK failed	100	HMI	/NCK		Dec 13, 2021, 12:03:40	PM
	Dec 13, 2021, 11:55:06 AM	Dec 13, 2021, 11:55:30 AM	00:00:23	150201	Communication to /NCK failed	100	HMI	/NCK		Dec 13, 2021, 11:55:06	AM
										10 👻 1 - 4 of 4	< >

Figure 5-50 Alarm Trend

Export functionality

It is possible to export an excel file(*.xls). This button will be active, when there is data on a table. Additionally, export functionality works by considering filtered data.

To perform a data export proceed as follows:

1. Click on "Export" button in the List View.



Active/History

The system can have closed or continuing alarms on "Alarms Trend" page. To show these alarms, Active/History is used. To list both alarms, click on "History". To list pending alarms, click on "Active".

Active	
History	

5.6.2 Machine Error Analysis for an asset without ClosedAlarms Aspect

5.6.2.1 Overview

The overview page for Machine Error Analysis service shows all clusters for this service. Each cluster shows a summary information for the subservice. By clicking on a specific cluster the page of this service will open.

SIEM	ENS SINUMERIK Service	Assistance				powered by MindSphere
SIEMENS	Asset Selection		Machine Condition	A Machine Error Analysis		💥 🚯 English
III > Machine E	rror Analysis 🗲 Overview					
						ssa_demoset_one_DoNotDelete
Currei	nt Alarms				Alarm History	
					Number of Alarms within 8 hours: Number of Alarms within last day:	
					Number of Alarms within last 7 days:	
Trigge	ering Alarms for I	Disturbances				
	Disturbances within 7 days: ion / NC Stop within 7 days:					

Figure 5-51 Machine Error Analysis

The following values are shown for each cluster:

- Current Alarms:
 - Number of current alarms
 - thereof with high priority
- Alarm History:
 - Number of alarms within 8 hours
 - Number of alarms within last day
 - Number of alarms within last 7 days
- Triggering Alarms for Disturbances:
 - Triggering Disturbances within 7 days
 - Alarm reaction / NC Stop within 7 days

Note

Restrictions for best usage for an asset, which does not have ClosedAlarms Aspect

Please consider the following restrictions, in order to work with Machine Error Analysis with high quality:

- There should be max 10 current alarms.
- There should be max 1000 alarms in alarm history.

5.6.2.2 Current Alarms

The Current Alarms page offers a graphical and a list view of current alarms, which are active at the control over the period of one day.

Module description

5.6 Machine Error Analysis

Setting up a graph

To set up a graph proceed as follows:

1. Click on the graph icon, if not already activated.



A graph shows which alarms occurred at what time at the control.

	IEMENS							Divis	
		SINUMERIK Service						powered by MindSphere	_
SIEME	NS	Asset Selection	Machine Transparency	Machine Condition	Machine Error Analysis			× 😚	Englis
I≣ > Mac	hine Error Ana	ilysis 🔰 Current Alarm	s						
_								ssa_demoset_one_DoNotDele	te
Cu	rrent A								
C	+ Alarm f	ilter							
=								B Export to XLS	
=	10								
	6 May	2021							
	5:00 Pf		6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	
	5:00 Pr	vi	6:00 PM	7300 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	
					799135: Measurem 830 PM - 1234 PM	ent out of tolerance.			

Figure 5-52 Current Alarms Graph

You can zoom in and out of the graph by marking a rectangular area with the mouse.

Table of values

1. Click on the table icon, if not already activated.



A table shows detailed information on the current alarms. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

	SIEMENS	SINUMERIK Service	Assistance						powered by MindSp	phere
SIEM		Asset Selection		Machine Condition 🔒 Machine	Error Analysis					🚱 Englis
≡ > N	achine Error Ana	ilysis 🗲 Current Alarms								
								SSi	a_demoset_one_DoNot	Delete
C	urrent A									
С	+ Alarm f	ilter								
=	A								B Export to	o XLS
_										Ð
	From		↓ ↑ Alarm N			Clear Info	Source	Number Range	From (Client)	8-
c.			+ 1 Alarmin 7991					PLC User Area		
	May 6, 2021,	COULO PM	/991	is weasurement out or tolerance.	90	PLC Message	/PLC/PMC	PLC User Area	May 6, 2021, 9:32:13 PM	

Figure 5-53 Current Alarms Table

Filtering for an alarm

- 1. Click on button "Alarm Filter".
- 2. Select a source for the alarm.

- 3. Type in a search parameter either for "Number Range", "Clear Info", "Text" or "Alarm Number".
- 4. Click on "Execute Filter".

	SIEMENS	SINUMERIK Service Ass	istance						powered by MindS	phere [+
SIEM	1ENS	Asset Selection	Machine Transparency	Machine Condition 🔒 Machine	e Error Analysis					🚱 English
≡ > N	Aachine Error An	alysis 🗲 Current Alarms							ssa_demoset_one_DoNo	tDelete
C	Current A									
C	- Alarm	filter								
		Source:	/NCK 🗹 /PL	C /HMI						
		Number Range:	Search for		•					
		Clear Info:	Search for		•					
		Text:	contains							
		Alarm Number:	a direct input of an alarr	n number overwrites number range filter						
≡	<u>ا</u>								B Export t	o XLS
										₫ □
	From	+	† Alarm No.	Text	Prio	Clear Info	Source	Number Range	From (Client)	
Ċ	May 6, 2021	1, 8:30:03 PM	799135	Measurement out of tolerance.	90	PLC Message	/PLC/PMC	PLC User Area	May 6, 2021, 9:32:13 PM	



5.6.2.3 Alarm History

The Alarms History page offers a graphical and a list view of historical alarms, which were active or closed at the control over a period of time.

Setting up a graph

To set up a graph proceed as follows:

1. Click on the graph icon, if not already activated.



A graph shows which alarms occurred at what time at the control.

	SIEMENS	SINUMERIK Service	Assistance									powered by MindSp	here [→
ss_denost_one_bokbbeed Azrm History Sector Data Range: © (2011-12-2021-02-06) © * Aver Hier Sector Data Range: © (2011-12-2021-02-06) © (100-10-12-2021-02-06) © (100-12-2021-02-06) © (100-12-2021-02-0	SIEMENS	Asset Selection	Machine Transpa	arency 🏫 Mac	nine Condition	Machine Error Analysis						*	😚 English
Alarm History Image: Alarm filter Selected Date Range: C 2000 1112 - 2021 02.06 > Image: C 2000 1112 - 2021 02.06 >	III > Machine Error Ana	ilysis 🗲 Alarm History											
											ssa_demo	set_one_DoNot	Delete
Selected Dur Range: 200 D1112 - 2021 02 d8 3 300 D1112 - 2021 02 d8 300 D1112 - 2021 02 d8 300 D1112 - 2021 02 d8 300 D1 700 AM	Alarm His												
Selected Dur Range: 200 D1112 - 2021 02 d8 3 300 D1112 - 2021 02 d8 300 D1112 - 2021 02 d8 300 D1112 - 2021 02 d8 300 D1 700 AM	Ci 🔺 Alarmá	iltar											
COUNT 1 February 2021 > 600 AM 700 AM 800 AM 900 AM 1100 AM 1200 PM 200 PM 300 PM 400 PM 500 PM 700000 E0 70000 E0 700000 E0 700000 E0 <td>0</td> <td></td> <td>1-02-06</td> <td></td>	0		1-02-06										
Instrumentation Instrument												B Export to	XLS
COD AM 7:00 AM 8:00 AM 9:00 AM 10:00 AM 11:00 AM 12:00 PM 1:00 PM 2:00 PM 3:00 PM 4:00 PM 5:00 PM 7:00 AL IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII													
20000 LD 70000 LD	< 1 Februa	ry 2021 >											
	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	
	799000: Err 4x8 AM - 63:						799000: 12:16 PM -			799000: Emergene 3:12 PM - 5:51 PM	y stop pressed		
79005. MC Core Stat Morked 311 PAL-Stat No.	799135: Mi 4:48 AM - 6:3:					i i	- i						
79905-MC Cycle Start blocked 311 Nor-351 N						i i				ī			
79925 MC Cycle Start blocked TYNE: SA PA										i i			
										799035: NC Cycle 3:11 PM - 5:51 PM	Start blocked		

Figure 5-55 Alarm History Graph

2. Select a time range in the drop down menu "Selected Time Range".

You can zoom in and out of the graph by marking a rectangular area with the mouse.

Table of values

1. Click on the table icon, if not already activated.



The table below shows detailed information on the historic alarms. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

МЕ	NS Asset Sel	ection 💽 Machine Tra	nsparency 👔 Machine	Condition 🔺 Machir	e Error Analysis					* 🚱
Mac	thine Error Analysis 🗲 Alarm	History								
									ssa_	demoset_one_DoNotDele
	arm History									
	anninistory									
2	+ Alarm filter									
-	d Date Range: < 2020-11-	2 - 2021-02-06								
cted	Date Range: < 2020-11-	2 - 2021-02-06								
	- A1									Export to XLS
-										Ð
	From	↓ To	↓ Duration [!		Io. Text	0.1	Clear Info	Source	Number Range	From (Client)
	Prom Q	+ 10 Q	+ Duration (r	Q Alarm	Q.	Q	Clear Into	Q,	Number Kange	Prom (Client)
9	Feb 1, 2021, 7:30:04 PM	<u> </u>			35 Measurement out of tolerance.		PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 8:32:13 PM
5	Feb 1, 2021, 7:30:04 PM	Feb 1, 2021, 7:30:04 PM			35 Measurement out of tolerance.		PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 8:32:13 PM
	Feb 1, 2021, 6:10:42 PM	Feb 1, 2021, 7:30:03 PM			35 Measurement out of tolerance.		PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:12:51 PM
	Feb 1, 2021, 6:02:49 PM	Feb 1, 2021, 6:03:07 PM			02 Please clean and restart		PLC Alarm	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:04:58 PM
	Feb 1, 2021, 6:02:49 PM	Feb 1, 2021, 6:03:06 PM		00:00:16 799			PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:04:58 PM
3	Feb 1, 2021, 6:02:22 PM	Feb 1, 2021, 6:03:07 PM			35 Measurement out of tolerance.		PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:04:31 PM
3		Feb 1, 2021, 6:02:22 PM			35 Measurement out of tolerance.		PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 6:57:51 PM
1 1 1	Feb 1, 2021, 5:55:42 PM				and a second sec					Feb 1, 2021, 6:55:43 PM
3 3 3	Feb 1, 2021, 5:55:42 PM			00:01:43 799	00 Emergency stop pressed	100	PLC Alarm			
9 9 9	Feb 1, 2021, 5:53:34 PM	Feb 1, 2021, 5:55:18 PM			00 Emergency stop pressed		PLC Alarm	/PLC/PMC	PLC User Area	
				02:39:42 799	00 Emergency stop pressed 00 Emergency stop pressed 35 NC Cycle Start blocked	100	PLC Alarm PLC Alarm PLC Message	/PLC/PMC /PLC/PMC /PLC/PMC	PLC User Area PLC User Area PLC User Area	Feb 1, 2021, 4:13:45 PM Feb 1, 2021, 4:13:46 PM

Figure 5-56 Alarm History Table

Filtering for an alarm

- 1. Click on button "Alarm Filter".
- 2. Select a source for the alarm.
- 3. Type in a search parameter either for "Number Range", "Clear Info", "Text" or "Alarm Number".
- 4. Click on "Execute Filter".

s	IEMENS SINUMER	IK Service Assist	ance								powered by MindSphere
SIEME	NS 🔚 Asset S	election 💽		ncy 👔 Machine Conditio	n 🛕 Machine Er	rror Analysis					% 🚯 🕫
	hine Error Analysis 🗲 Alar	m History								ssa_dei	noset_one_DoNotDelete
С	- Alarm filter										
	s	ource:	🖌 /NCК	/PLC /HMI							
	١	lumber Range:	Search for			•					
	c	lear Info:	Search for			•					
	т	ext:	contains								
	4	Jarm Number:	a direct input of a	n alarm number overwrites numl	er range filter						
Selected	Date Range: < 2020-1	1-12 - 2021-02-06	>								
≡	ŝ										Export to XLS
	From	↓ To	4	Duration [hh:mm:ss]	Alarm No.	Text	Prio	Clear Info	Source	Number Range	From (Client)
	۹	Q		۹	Q	۹	Q	Q	Q	۹	۹
Ċ)	Feb 1, 2021, 7:30:04 PM			124:29:54	799135	Measurement out of tolerance.	90	PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 8:32:13 PM
Ċ.	Feb 1, 2021, 7:30:04 PM	Feb 1, 202	1, 7:30:04 PM	00:00:00	799135	Measurement out of tolerance.	90	PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 8:32:13 PM
Ċ)	Feb 1, 2021, 6:10:42 PM	Feb 1, 202	1, 7:30:03 PM	01:19:21	799135	Measurement out of tolerance.	90	PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:12:51 PM
Ċ.	Feb 1, 2021, 6:02:49 PM	Feb 1, 202	1, 6:03:07 PM	00:00:18	799102	Please clean and restart	100	PLC Alarm	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:04:58 PM
Ċ	Feb 1, 2021, 6:02:49 PM	Feb 1, 202	1, 6:03:06 PM	00:00:16	799035	NC Cycle Start blocked	90	PLC Message	/PLC/PMC	PLC User Area	Feb 1, 2021, 7:04:58 PM

Figure 5-57 Alarm History Filter

5.6.2.4 Triggering Alarms for Disturbances

The Triggering Alarms for Disturbances page offers a graphical and a list view of technical disturbances and NC stops, which occurred at the control 60 seconds ago and lasted for antother 60 seconds.

Setting up a graph

To set up a graph proceed as follows:

1. Click on the graph icon, if not already activated.



- 2. Select a date range in the drop down menu "Selected Date Range".
- 3. Select either tab "Techn. Disturbances" or "Alarm Reaction / NC Stop".

A graph shows which technical disturbances or NC stops occurred at the control in the selected date range.

	SINUMERIK Service	e Assistance						powered	⊎ MindSpl	
SIEMENS	Asset Selection	Machine Transparency	Machine Condition	Machine Error Analysis					*	😚 Engl
> Machine Error /	Analysis 🕻 Disturbances							ssa demoset on	e DoNoti	Delete
Disturba	ancos							ssa_demoset_on	e_bontoti	Verete
Disturbe	ances									
C + Alarr										
Selected Date Rang	ge: < 2020-11-12 - 202	1-02-06 >								
= ≙									E Export	to XLS
Techn. Distur	bances Alarm React	ion / NC Stop								
Alarms with be	igin +/- 60 sec. at trigger ev	rent								
	* *	× •	* *	× •	•	•				
		<u> </u>				<u>}</u>		<u>}</u>		
1/17/2021, 5:00 PM	1/18/2021, 1/18/2021 11:00 1:00 PM AM		1/20/2021, 1/20/2021 11:00 1:00 PM AM		1/22/2021, 1/23/2021, 12:00 11:00 PM AM	1/23/2021, 1/30/2021, 1:00 PM 12:00 PM	1/31/2021, 1/31/20 11:00 1:00 P/ AM	21, 2/1/2021, 2/1/202 / 12:00 2:00 PM PM		



You can zoom in and out of the graph by marking a rectangular area with the mouse.

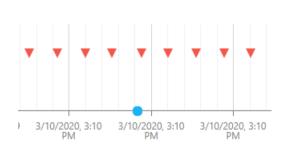


Table of values

1. Click on the table icon, if not already activated.



A table shows detailed information on the technical disturbances or NC stops, i.e. alarm number or source. Furthermore it is possible to export the table to an excel file (*.xls) by clicking the button "Export to XLS".

SIEMENS	SINUMERIK Service	ssistance						powered by MindSphere
IEMENS	Asset Selection		🟦 Machine Condition 🛛 🛕 Machi	ne Error Analysis				ж 🚱
> Machine Error Analy	lysis 🕻 Disturbances							
								ssa_demoset_one_DoNotDele
Disturband	ces							
C + Alarm filt	lter							
Selected Date Range:	< 2020-11-12 - 2021-	2-06 >						
= ☆								B Export to XL
Techn. Disturban	Alarm Reaction	n / NC Stop						
Alarms with begin	+/- 60 sec. at trigger eve	nt						
techn. Disturbance	2.1							印
From		Alarm No.	Tout					
Q		Alarm No.	TEAL	Prio	Clear Info	Source	Number Range	From (Client)
~		Alarm No.	Q.	Q	Clear Info	Source Q	Number Range	From (Client)
	ance: Nov 14, 2020, 2:16	Q						
		Q 42 PM		Q				
* techn. Disturba	20, 2:16:09 PM	Q 42 PM 60207	٩	Q 100	۹	Q	Q	Q
 techn. Disturba b Nov 14, 203 	120, 2:16:09 PM 120, 2:16:09 PM	Q 42 PM 60207 60206	Q, 1 N60 202 &itno text available>	Q 100	Q. Hardware-Reset NCU	Q.	Q. NCK Functional Alarms	Q, Nov 14, 2020, 2:16:09 PM
 techn. Disturba Nov 14, 203 Nov 14, 203 	120, 2:16:09 PM 120, 2:16:09 PM 120, 2:16:09 PM	Q 42 PM 60207 60206 60205	Q, 1 N60 202 &ittno text available> 1 N60 201 &ittno text available>	Q. 100 100 100	Q. Hardware-Reset NCU Hardware-Reset NCU	Q, /NCK /NCK	Q NCK Functional Alarms NCK Functional Alarms	Q. Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 2:16:09 PM
 techn. Disturba Nov 14, 200 Nov 14, 200 Nov 14, 200 	20, 2:16:09 PM 20, 2:16:09 PM 20, 2:16:09 PM 20, 2:16:09 PM	Q 000000000000000000000000000000000000	Q 1 N60 202 őitno text available&git 1 N60 201 őitno text available&git 1 N60 201 őitno text available&git	Q 100 100 100 100 100	Q. Hardware-Reset NCU Hardware-Reset NCU Hardware-Reset NCU	Q, /NCK /NCK /NCK	Q. NCK Functional Alarms NCK Functional Alarms NCK Functional Alarms	Q, Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 2:16:09 PM
 techn. Disturba Nov 14, 200 	20, 2:16:09 PM (20, 2:16:09 PM (20, 2:16:09 PM (20, 2:16:09 PM (20, 2:16:09 PM (20, 2:16:09 PM	Q 000000000000000000000000000000000000	Q 1 N60 202 &itmo test available> 1 N60 201 &itmo test available> 1 N60 201 &itmo test available> 1 N60 201 &itmo test available>	Q 100 100 100 100 100 100	Q, Hardware-Reset NCU Hardware-Reset NCU Hardware-Reset NCU Hardware-Reset NCU	Q. /NCK /NCK /NCK /NCK	Q NCK Functional Alarms NCK Functional Alarms NCK Functional Alarms NCK Functional Alarms	Q. Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 2:16:09 PM Nov 14, 2020, 1:16:09 AM

Figure 5-59 Disturbances List

Filtering for disturbances

- 1. Click on button "Alarm Filter".
- 2. Select a source for the alarm.
- 3. Type in a search parameter either for "Number Range", "Clear Info", "Text" or "Alarm Number".
- 4. Click on "Execute Filter".

SIEMENS SIN	UMERIK Service Assis	stance						powered by MindS	pher
iens 📰 /	usset Selection	Machine Transparency	A Machine Condition 🔒 Machine	e Error Analysis					6
Machine Error Analysis 💙	Disturbances								Delet
							550	_demoset_one_boworb	elet
Disturbances									
- Alarm filter									
	Source:	🖌 /NCK 🛛 /	PLC /HMI						
	Number Range:	Search for		•					
	Clear Info:	Search for		•					
	Text:	contains							
	Alarm Number:	a direct input of an al	rm number overwrites number range filter						
ted Date Range: < 🛛	020-11-12 - 2021-02-0	6 >							
								E Export 1	to XLS
chn. Disturbances		NC Stop							
larms with begin +/- 60	sec. at trigger event							1	P
From	1	Alarm No.	Text	Prio	Clear Info	Source	Number Range	From (Client)	~
Q		Q	Q	Q	Q	Q	Q	Q	1
techn. Disturbance: N	lov 14, 2020, 2:16:42 l	PM							
D Nov 14, 2020, 2:10	5:09 PM	60207	1 N60 202 ⁢:no text available>:	100	Hardware-Reset NCU	/NCK	NCK Functional Alarms	Nov 14, 2020, 2:16:09 PM	

Figure 5-60 Disturbances Filter

5.6.3 MMM & SSA Interlinking

If both MMM and SSA application are registered to the tenant and SSA user rights are granted, SSA Error Analysis page can also be reached from MMM screens.

MMM Overview

Reaching SSA Error Analysis Page from MMM Overview:

EMENS Manage MyMachines			powered by MindSpl
	Machine Overv	iew	0
001_Mimic_ganttChart_issue	11fatih_asset_DoNotDelete	AMP_MachineStatusCache_DoNo 🖋	AMP_WorkpieceCount_DoNotDel 🖋
Alarms Unknown Tenant ID mmmdev Location Istanbul coun HMI Ul Type HMI Version NC Program	Alems Usbacon Tenani D momodev Location Hanbul con HMI UType SINIMERKI HMI Version Q4.05.03.04 Alams NC Pogram JN HELX, Dabbaetd	Altrm: Usboown Terant ID mmmdev Loation Histandu Tarka HMI UI Type SINUMERY Co HMI Vision Of A 0.80.06 NC ProgramNAMPW92	Alarms Linknown Tenant ID mmmdev Location Istanbul Turke HMI UType SINUMERK Ch HMI Version 0.4.07.07.06 NC ProgramN_AMPWP2
	Aspects		
AMPAutomationMonitorAsset_D 🥻	AMPAutomationTuningAset_Do Expert Spinde Monitor Machine Location	Asset 19.04.2021.11.43.50	Asset 29_05_2021_14_58_14
Alarms Unknown Terant (D minmdev Location istanbul Turke HMI UI Type HMI Vesion NC ProgramN_AMPWP2	Alarms Ulohowam Tenant ID mmmdev Motor Temperature Location Istanbul Turi HMI Ul Type HMI Version NC Program N AMPWP; Error Analysis	Alarns Ulikinown Teelant ID mmmdey Location HMI Ul Type SINUMERIK O HMI Version Q4 C07 07.06 NC ProgramN_MRWP2	Alarms Unknown Tenant ID mmmdev Location HMI UType HMI Version NC Program
••••		•••	

Figure 5-61 Machine Overview

MMM Dashboard

SIEMENS Manage M	AyMachines													powered by N	lindSphere
÷			Machine Dash	board											\$ Y \
1		^p a	Pending Alarms:	Jnknown							Select Time Browser	Zone		Select Time R Last 48 ho	
	-		Active Al	ams		Machine	s Status		NC	Program St	tatus		0	peration Mo	ide
			Machine Off												
			Unknown Status												
Name: 11fatih_asset_DoNotDek	ete	Overview	Production												
State	Information	Alarms	Tech. Disturbance												
NC Program	_N_HELIX_MPF	Aspects	Org. Disturbance												
NC Program Status	Cancelled	Events	org. ontoroprice												
Operation Mode	JOG		No Disturbance												
Access Protection Level	Machine Manufacturer : Development	Export		1200 1500	.e ⁰ .	0	es.		00	d ⁰	.e .e	r	8	66 ⁶⁰ 69 ⁶	ę.
Stop Condition	No Stop State	Spindle Monitor		13. 15.	10	v 9'	9	90 B	12	19 IS	21.	0.	63	Qo. Q9.	
Time of Last Value Change	18 Mar 2021 12:24	Machine Location	📰 🕓												
50 Spindle		Motor Temperature													
50 1	3 0 1	Press researchers													
Spindle	eed III	Files													
50 x 120	0 x 120	Error Analysis													

Reaching SSA Error Analysis Page from MMM Dashboard:

Figure 5-62 MMM Dashboard

Other MMM pages

Reaching SSA Error Analysis Page at from other MMM pages:

÷			Machine Events	¢ T
			😡 MindSphereStandardEvent 🗸	acknowledge
_			□ sev. IT Y timestamp IT description	source ${\mathbb F}^1 \ensuremath{\stackrel{\otimes}{=}} $ ack. ${\mathbb F}^1 \ensuremath{\stackrel{\otimes}{=}}$
	-			
and the second s				
				N 00.00 00 00 00
		Overview	~~	<u> </u>
ne: 11fatin_asset_DoNotDelete			No exe	ante
me: 11fatih_asset_DoNotDelete State	information	Alarma	No eve	
State			No ev Please select another time ran	
State IC Program	Information	Alarms		
State NC Program NC Program Status	Information	Alarms Dashboard Aspects		
State NC Program NC Program Status Diperation Mode	Information _N_HELIX_MPF Cancelled	Alarms Dashboard		
State NC Program NC Program Status Operation Mode Access Protection Level	Information _N_HELIX_MPF Cancelled JOG	Alarms Dashboard Aspects		
State NC Program NC Program Status Operation Mode Access Protection Level Stop Condition	InformationN_HELX_MPF Cancelled JOG Machine Manufacturer : Development	Alarms Dashboard Aspects Export Spindle Monitor	Please select another time ran	
State NC Program NC Program Status Operation Mode Access Protection Level stop Condition	Information _N_HELIX_MPF Cancelled JOG Machine Manufacturer : Development No Stop State	Alarms Deshboard Aspects Export		
State KC Program KC Program Status Operation Mode kccess Protection Level ktop Condition lime of Last Value Change	Information IN_HELX_MPF Cancelled JoG Machine Manufacturer : Development: No Stop State 18 Mar 2021 12:24	Alarms Dashboard Aspects Export Spindle Monitor	Please select another time ran	
State KC Program KC Program Status Operation Mode kocess Protection Level top Condition ime of Last Value Change	Information IN_HELX_MPF Cancelled JoG Machine Manufacturer : Development: No Stop State 18 Mar 2021 12:24	Alarms Dashboard Aspects Export Spindle Monitor Machine Location Motor Temperature	Please select another time ran	ige or change filter settings
	Information _N_HELIX_MPF Cancelled JOG Machine Manufacturer : Development No Stop State	Alarms Deshboard Aspects Expert Spindle Monitor Machine Location	Please select another time ran • Event Detail	sge or change filter settings 2d event

Figure 5-63 MMM other pages

5.6.4 Failure Analysis

Overview

Machine failure analysis, in terms of technical disturbances and NC stops, are important for the user to determine the critical problems within the machine and indicate main causes of downtimes.

It is important to see and interact with these failures with a combination of dashboard containing "Machine Status", "NC Program Status", and "Operation Mode", so that the user can define the root-cause and prevent the triggering of these disturbances.

All states which are available for the user refer to the "Machine Status", "NC Program Status", and "Operation Mode". The states are listed below and have to be presented to the user with a list of technical disturbances within the "Failure Analysis" functionality:

- General Status: Machine Off, Unknown
- Machine Status: Production, Technical Disturbance, Organizational Disturbance, no Disturbance
- NC Program Status: Stopped, suspended, running, waiting, aborted
- Operating Mode: JOG, MDA, AUTO

To reach this state of functionality, MMM connectivity will be used.

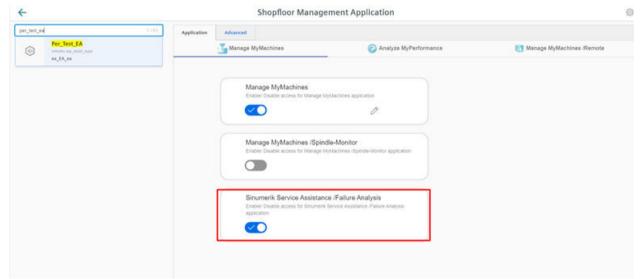
The following requirements have to be fulfilled:

- Purchasing SSA and MMM: "Failure Analysis" is a feature of SSA and an add-on for MMM.
- Purchasing Error Analysis Service (complete for related Asset): Failure Analysis works depending on Tech Disturbance.

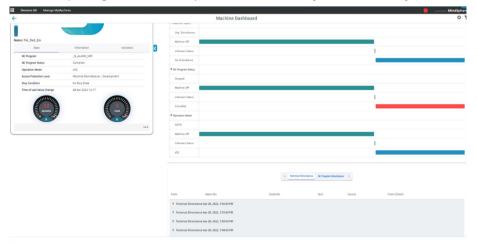
You have to activate the toggle for "Machine Error Analysis".

					<u>6</u>
Name 7	Machine Model	Description	Machine Transparency	Machine Condition	Machine Error Analysis
Q. MMMSSA217_DoNotDelete	Q	٩			
- mmmdev					
MMMSSA217_DoNotDelete	828 •		Inactive	Active 📕 ⊘	Active 📕 🕗

• Activating "Failure Analysis" Service on Shopfloor Management Application. For activation of the "Failure Analysis" service, admin rights are required.



After completing the described process, Failure Analysis will be ready to use.



Module description

5.6 Machine Error Analysis

Troubleshooting

Problem	Solution
Machine connection to MindSphere	In case of problems with the machine connection, the latest MMM documentation should be consul- ted.

Appendix



A.1 Data Acquisition only in MindSphere

Data Acquisition only in MindSphere

SINUMERIK Service	Assistance	- Data Acquisition only	in Min	dSphere					
Aspect	Catego- ry	Description	# Vars	Variable	Da- ta typ e MM M	Uni t MM M	Data type Mind- Spher e	Unit Mind- Sphere	Maxi- mum length
SINUMERIK_CSPRO- TECTIONLEVEL	Dynamic	Compressed Protec- tionLevel for SSA App	1	ProtectionLevel	-	-	DOU- BLE	ONE	-
			2	ProtectionLevel0	-	-	DOU- BLE	ONE	-
			3	ProtectionLevel1	-	-	DOU- BLE	ONE	-
			4	ProtectionLevel2	-	-	DOU- BLE	ONE	-
			5	ProtectionLevel3	-	-	DOU- BLE	ONE	-
			6	ProtectionLevel4	-	-	DOU- BLE	ONE	-
			7	ProtectionLevel5	-	-	DOU- BLE	ONE	-
			8	ProtectionLevel6	-	-	DOU- BLE	ONE	-
			9	ProtectionLevel7	-	-	DOU- BLE	ONE	-
SINUMERIK_CSRE- SULTS	Dynamic	Result Values for SSA App	1	BootStatus	-	-	INT	ONE	-
SINUMERIK_CSMA- CHINESTATUS	Dynamic	Compressed Maschi- neStatus for SSA App	1	MachineStatus	-	-	DOU- BLE	ONE	-

A.1 Data Acquisition only in MindSphere

ClosedAlarms	Dynamic	-	1	alarmNo	-	-	STRIN G	-	255
			2	alarmText	-	-	STRIN G	-	255
			3	clearInfo	-	-	INT	-	-
			4	ctDuration	-	-	STRIN G	ms	255
			5	ctEndTime	-	-	STRIN G	-	255
			6	ctStartTime	-	-	STRIN G	-	255
			7	priority	-	-	INT	-	-
			8	source	-	-	STRIN G	-	255
			9	stDuration	-	-	STRIN G	ms	255
			10	stEndTime	-	-	STRIN G	-	255
			11	stStartTime	-	-	STRIN G	-	255
			12	text	-	-	STRIN G	-	255
SINUMERIK_TRIG- GERINGALARMS	Dynamic	-	1	alarms	-	-	BIG_ST RING	-	99985
			2	triggerType	-	-	STRIN G	-	15

A.2 Data Acquisition in MMM - "Time-based / cyclic trigger"

Data Acquisition in MMM - "	'Time-based / cyclic trigger"
-----------------------------	-------------------------------

Aspect/ Configura- tion	Rea ding cy- cle	# Va rs	Variable	Address SIN840 / SIN- UMERIK ONE	Adress SIN828	Data type MMM	Uni t M M M	Data type Mind- Sphere	Unit Mind- Sphere
SINUMER- IK_CSRAW	5 sec.	1	NCKAlive	/Nck/State/nckAli- veAndWell	/Nck/State/nckAli- veAndWell	DOUBLE	On e	DOUBLE	ONE
		2	PowerOnTime	/Nck/ChannelDiag- nose/poweronTime	/Nck/Channel- Diagnose/power- onTime	DOUBLE	On e	DOUBLE	ONE
		3	PrioAlarm	/NCK/TopPrioalarm/ textIndex[1]	/Nck/TopPrioa- larm/textIndex[1]	DOUBLE	On e	DOUBLE	ONE
		4	SetupTime	/Nck/ChannelDiag- nose/setupTime	/Nck/Channel- Diagnose/setup- Time	DOUBLE	On e	DOUBLE	ONE
		5	timesync_offset	/ePSStore/time- sync_offset	/ePSStore/time- sync_offset	DOUBLE	On e	DOUBLE	ONE
CSM_Gener- al_Info	30 sec.	1	NUM_AX- ES_IN_SYSTEM	/Nck/ChannelDiag- nose/dpAxisCfgNu- mAxes	/Nck/Channel- Diagnose/dpAx- isCfgNumAxes	DOUBLE	On e	DOUBLE	ONE
		2	NC_CPU_Ready	/Plc/DataBlock/ Bit[c10,104.7]	n/a	DOUBLE	On e	DOUBLE	ONE
		3	Varia- ble_Group1 ¹⁾	/Plc/DataBlock/ Byte[c10,108]	/Plc/DataBlock/ Byte[c2700,2]	DOUBLE	On e	DOUBLE	ONE
		4				DOUBLE	On e	DOUBLE	ONE
		5				DOUBLE	On e	DOUBLE	ONE
		6	Varia- ble_Group2 ²⁾	/Plc/DataBlock/ Byte[c10,109]	/Plc/DataBlock/ Byte[c2700,3]	DOUBLE	On e	DOUBLE	ONE
		7				DOUBLE	On e	DOUBLE	ONE
		8				DOUBLE	On e	DOUBLE	ONE
		9				DOUBLE	On e	DOUBLE	ONE
		10				DOUBLE	On e	DOUBLE	ONE

Appendix

CSM_AX01	30 sec.	1	AX01_Drives_Sta tus	2,3,1	2,3,1	DOUBLE	On e	DOUBLE	ONE
		2	AX01_Mo- tor_Temp	35,3,1	35,3,1	DOUBLE	°C	DOUBLE	°C
		3	AX01_Impul- seEnable_PLC	/Channel/MachineAx- is/impulseEna- ble[u1,1]	/Channel/Machi- neAxis/impul- seEnable[u1,1]	DOUBLE	On e	DOUBLE	ONE
		4	AX01_Control- ConfirmAc- tive_NC	/Channel/MachineAx- is/contrConfirmAc- tive[u1,1]	/Channel/Machi- neAxis/contrCon- firmActive[u1,1]	DOUBLE	On e	DOUBLE	ONE
		5	AX01_Varia- ble_Group ³⁾	/Plc/DataBlock/ Byte[c31,93]	/Plc/DataBlock/ Byte[c3900,4001	DOUBLE	On e	DOUBLE	ONE
		6]	DOUBLE	On e	DOUBLE	ONE
CSM_AX02	30 sec.	1	AX02_Drives_Sta tus	2,3,2	2,3,2	DOUBLE	On e	DOUBLE	ONE
		2	AX02_Mo- tor_Temp	35,3,2	35,3,2	DOUBLE	°C	DOUBLE	°C
		3	AX02_Impul- seEnable_PLC	/Channel/MachineAx- is/impulseEna- ble[u1,2]	/Channel/Machi- neAxis/impul- seEnable[u1,2]	DOUBLE	On e	DOUBLE	ONE
		4	AX02_Control- ConfirmAc- tive_NC	/Channel/MachineAx- is/contrConfirmAc- tive[u1,2]	/Channel/Machi- neAxis/contrCon- firmActive[u1,2]	DOUBLE	On e	DOUBLE	ONE
		5	AX02_Varia- ble_Group ³⁾	/Plc/DataBlock/ Byte[c32,93]	/Plc/DataBlock/ Byte[c3901,4001	DOUBLE	On e	DOUBLE	ONE
		6]	DOUBLE	On e	DOUBLE	ONE
CSM_AX03	30 sec.	1	AX03_Drives_Sta tus	2,3,3	2,3,3	DOUBLE	On e	DOUBLE	ONE
		2	AX03_Mo- tor_Temp	35,3,3	35,3,3	DOUBLE	°C	DOUBLE	°C
		3	AX03_Impul- seEnable_PLC	/Channel/MachineAx- is/impulseEna- ble[u1,3]	/Channel/Machi- neAxis/impul- seEnable[u1,3]	DOUBLE	On e	DOUBLE	ONE
		4	AX03_Control- ConfirmAc- tive_NC	/Channel/MachineAx- is/contrConfirmAc- tive[u1,3]	/Channel/Machi- neAxis/contrCon- firmActive[u1,3]	DOUBLE	On e	DOUBLE	ONE
		5	AX03_Varia- ble_Group ³⁾	/Plc/DataBlock/ Byte[c33,93]	/Plc/DataBlock/ Byte[c3902,4001	DOUBLE	On e	DOUBLE	ONE
		6]	DOUBLE	On e	DOUBLE	ONE

A.2 Data Acquisition in MMM - "Time-based / cyclic trigger"

A.2 Data Acquisition in MMM - "Time-based / cyclic trigger"
A.Z DULU ACQUISILIOITIITIVIIVIIVI - TITTE-DUSEU / CYCIIC LITUQEI
1 3 33

CSM_AX04	30 sec.	1	AX04_Drives_Sta tus	2,3,4	2,3,4	DOUBLE	On e	DOUBLE	ONE
		2	AX04_Mo- tor_Temp	35,3,4	35,3,4	DOUBLE	°C	DOUBLE	°C
		3	AX04_Impul- seEnable_PLC	/Channel/MachineAx- is/impulseEna- ble[u1,4]	/Channel/Machi- neAxis/impul- seEnable[u1,4]	DOUBLE	On e	DOUBLE	ONE
		4	AX04_Control- ConfirmAc- tive_NC	/Channel/MachineAx- is/contrConfirmAc- tive[u1,4]	/Channel/Machi- neAxis/contrCon- firmActive[u1,4]	DOUBLE	On e	DOUBLE	ONE
		5	AX04_Varia- ble_Group ³⁾	/Plc/DataBlock/ Byte[c34,93]	/Plc/DataBlock/ Byte[c3903,4001	DOUBLE	On e	DOUBLE	ONE
		6]	DOUBLE	On e	DOUBLE	ONE
CSM_AX05	30 sec.	1	AX05_Drives_Sta tus	2,3,5	2,3,5	DOUBLE	On e	DOUBLE	ONE
		2	AX05_Mo- tor_Temp	35,3,5	35,3,5	DOUBLE	°C	DOUBLE	°C
		3	AX05_Impul- seEnable_PLC	/Channel/MachineAx- is/impulseEna- ble[u1,5]	/Channel/Machi- neAxis/impul- seEnable[u1,5]	DOUBLE	On e	DOUBLE	ONE
		4	AX05_Control- ConfirmAc- tive_NC	/Channel/MachineAx- is/contrConfirmAc- tive[u1,5]	/Channel/Machi- neAxis/contrCon- firmActive[u1,5]	DOUBLE	On e	DOUBLE	ONE
		5	AX05_Varia- ble_Group ³⁾	/Plc/DataBlock/ Byte[c35,93]	/Plc/DataBlock/ Byte[c3904,4001	DOUBLE	On e	DOUBLE	ONE
		6]	DOUBLE	On e	DOUBLE	ONE
CSM_SP01	30 sec.	1	SP01_Drives_Sta tus	2,3,6	2,3,6	DOUBLE	On e	DOUBLE	ONE
		2	SP01_Mo- tor_Temp	35,3,6	35,3,6	DOUBLE	°C	DOUBLE	°C
		3	SP01_Impul- seEnable_PLC	/Channel/MachineAx- is/impulseEna- ble[u1,6]	/Channel/Machi- neAxis/impul- seEnable[u1,6]	DOUBLE	On e	DOUBLE	ONE
		4	SP01_Control- ConfirmAc- tive_NC	/Channel/MachineAx- is/contrConfirmAc- tive[u1,6]	/Channel/Machi- neAxis/contrCon- firmActive[u1,6]	DOUBLE	On e	DOUBLE	ONE
		5	SP01_Varia- ble_Group ⁴⁾	/Plc/DataBlock/ Byte[c36,93]	/Plc/DataBlock/ Byte[c3905,4001	DOUBLE	On e	DOUBLE	ONE
		6]]	DOUBLE	On e	DOUBLE	ONE

¹⁾ Variable_Group1 contains these three variables: "NC_Ready", "Drives_Cyclic" and "Panel_BTSS_Ready" variables.

²⁾ Variable_Group2 contains these five variables: "NC_Battery_Alarm", "AirTemp_Alarm", "Cooling_Temp_Alarm_NCU", "PC_System_Error" "and NC_Alarm_Pending".

³⁾ AX*_Variable_Group contains these two variables: "AX*_Enable_Impulse" and "AX*_Drive_Ready".

⁴⁾ SP*_Variable_Group contains these two variables: "SP*_Enable_Impulse" and "SP*_Drive_Ready".

A.2 Data Acquisition in MMM - "Time-based / cyclic trigger"

See also

Clarification of machine variable parameters (Page 154)

A.3 Data Acquisition in MMM - "Variable value-based trigger"

SINUMERIK Service A	ssistance - Data acq	uisition	in M	MM - "V	'ariabl	e value	e-based	trigger"		
WHEN the variable								THEN		
Name of Data Ac- quisitíon	Variable Address	Data type MMM	U nit M M M	Oper- ator	Vari abl e Val- ue	De- boun ce Time	Hys- tere- sis	Variable Address	Re- cord- ing for	With- in cy- cle time
SINUMERIK_CSA- LARMREACTION	/Channel/State/ acAlarmStat[u1,1]	DOU- BLE	O ne	Not equal s	0	1 sec	-	/Channel/State/ acAlarmStat[u1,1]	30 sec	30 sec

Data Acquisition in MMM - "Variable value-based trigger"

A.4 Aspect configuration with MMM - minimum aspect requirements

A.4 Aspect configuration with MMM - minimum aspect requirements

Note Precondition

Please keep in mind that at least one aspect should be configured which starts with "CSM_AX".

Aspects	Asset Selec- tion	Machine Transparency	Machine Condition	Machine Er- ror Analysis
AgentOnlineStatus	Mandatory	-	Mandatory	Mandatory
Alarms	-	-	-	Mandatory
CH1_BasicConfig	Mandatory	-	Mandatory	
CH1_MachineStatus	Mandatory	-	Mandatory	Mandatory
ClosedAlarms	-	-	-	Mandatory
CSM_AX01	-	-	Optional	-
CSM_AX02	-	-	Optional	-
CSM_AX03	-	-	Optional	-
CSM_AX04	-	-	Optional	-
CSM_AX05	-	-	Optional	-
CSM_General_Info	-	-	Mandatory	
CSM_SP01	-	-	Mandatory	-
MachineModel	-	-	Mandatory	-
SINUMERIK_CSALARMREACTION	-	-	-	Mandatory
SINUMERIK_CSMACHINESTATUS	-	-	Mandatory	Mandatory
SINUMERIK_CSPROTECTIONLEVEL	Mandatory	-	Mandatory	-
SINUMERIK_CSRAW	-	-	Mandatory	Mandatory
SINUMERIK_CSRESULTS	-	-	Mandatory	-
SINUMERIK_TRIGGERINGALARMS	-	-	-	Mandatory
Startup	-	-	Mandatory	Mandatory

Naming of aspects

The naming of these aspects do not have to be named as stated above. The naming might still be different, i.e. for optional axes. Here is an example of the axes defined in another tenant. As shown, the naming "CSM_AX_W_Achse" differs from the ones stated above.

Types	core.	basicasset > core.basicdevice > core.ba	asicsinumerikasset >	pgosm.MVL1				00
< Zurück BasicSinumerikAsset	Asp	ects						
🕣 Type hinzufügen		Name ‡		Aspect		Kategorie		
Filter		AgentOnlineStatus	naming - r	ules ^{gentstatus}		Dynamisch	Vererbt	2
* Eigene Types	>			core.sinumerikbasicalarms		Dynamisch	Vererbt	1
CNC Kit		CH1_BasicConfig		core.sinumerikbasicconfig		Dynamisch	Vererbt	1
pgosm.CNC_Kit		CH1_MachineStatus		core.sinumerikbasicmachinesta	tus	Dynamisch	Vererbt	,
MVL1 pgosm.MVL1	~	CSM_AX_W_Achse		pgosm.CSM_AX_W_Achse		Dynamisch	Definiert	,
OSM Robot		Name ‡	Einheit		Datentyp		Max. Länge	
pgosm.OSMRobot		Drehmoment	NAM		DOUBLE			
Smart MFM posm.SmartMFM		Drehzahl	PMI		DOUBLE			
		Leistungsteiltemperatur	°C		DOUBLE			
		Momentenausnutzung	96		DOUBLE			
		Motortemperatur	°C	т	DOUBLE			
		StromistWert	A	1	DOUBLE			
		Wirkleistung	KW		DOUBLE			
		ZK_Spannung	v		DOUBLE			

Figure A-1 Example for different spindle name

A.5 Clarification of machine variable parameters

A.5 Clarification of machine variable parameters

In chapter Data Acquisition in MMM - "Time-based / cyclic trigger" (Page 147) the variables for the aspect configuration are listed. There are specific variables assigned to the controller like "param", "slave number", "drive number", "io system nr". These variables are coded in parameter numbers, i.e. "35,3,4". This example describes how these variables are observed and determined.

Variable and parameter numbers

The following screen in SINUMERIK Operate shows the connection between variables and parameter numbers:

3 21 Linear CHRH1 Ia 4 SP1 Spindel 4 SERV0_3.3.3 ARM CHRH1 5 SP2 Spindel 5 SERV0_3.3.1 ARM CHRH1 5 SP2 Spindel 5 SERV0_3.3.1 ARM CHRH1 <	Maschin ndex h	ienachse Name	Тур	Antri Nr.	ieb Bezeichner	Motor Typ	Kanal	
5 SP2 Spindel 5 SERVO 331 ARM CHAN1 <param/> , <slavenumber>,<dnve nr="">,<lo system:nr=""></lo></dnve></slavenumber>	2 Y	*1	Linear				CHAN1	Change languag
<param/> , <slavenumber>,<dnve nr="">,<io nr="" system=""></io></dnve></slavenumber>	4 5	SP1	Spindel	- 4	SERV0_3.3:3	ARM	CHAN1	
	≤t	param	>, < <mark>slav</mark>	enun	~		teminr≥	Reset (po) Kennuo
ctuelle Zugriffsstufe: Hersteller								Details

Figure A-2 Variables and parameter numbers

A.6 Supplementary documentation

This manual describes only the advanced administration tasks for using **SINUMERIK Service Assistance Mindsphere Application**. The instructions for the machine connection to MindSphere via **Manage MyMachines** are not part of this manual.

If you need support to connect your machine via Manage MyMachines to MindSphere, use the links below:

- Function Manual Manage MyMachines (<u>https://documentation.mindsphere.io/resources/</u> <u>html/manage-my-machine/en-US/index.html</u>)
- Readme Manage MyMachines (<u>https://documentation.mindsphere.io/resources/html/</u> manage-my-machine-readme/en-US/index.html)

For further information on installation of Brownfield Connectivity Services (BFC) please refer to Function Manual. (<u>https://support.industry.siemens.com/cs/at/en/sc/5392</u>)

Appendix

A.6 Supplementary documentation

Glossary

Asset

For MindSphere, an asset is each connected element that provides data. This can be a machine or an individual component. In conjunction with this documentation, an "asset" is a connected controller.

Manage MyMachines

MindApp that displays the operational and plant-specific data of machine tools configured in MindSphere.

MindSphere

MindSphere – the open cloud platform from Siemens – is the core component of a highperformance IoT operating system. It offers data analysis, comprehensive connectivity, tools for developers, applications and services. MindSphere supports you in the analysis and utilization of your data in order to obtain new insights. In this way, you can optimize your resources for maximum availability

Index

Α

Aarm History graph, 133 Acknowledgement, 98 Hardware Components, 98 Activation Components, 87 Machine Condition, 87 Machine Error Analysis, 87 Machine Transparency, 87 Activation page, 87 Active assets, 90 Add column Column Chooser, 89 Alarm History, 129 Filtering, 134 table of values, 134 Alarm reaction / NC Stop within 7 days, 129 Aspects Configuration, 26 Creating, 27 Asset Creating, 33 Asset Selection, 82 Asset status error, 82 Okay, 82 warning, 82 Asset Type Creating, 30

В

Basic Information, 94, 96 Billing, 87 Boot Monitoring, 109 graph, 115 table of values, 116

С

Change Protocol, 95, 105 Acknowledgement, 106 Changed Item History, 106 Column Chooser, 89 Add column, 89 Components Activation, 87 prices, 87 Configuration change Configuration status, 82 Configuration status Configuration change, 82 Not configured, 82 Upload date, 82 Configuring aspect time-based / cyclic trigger acquisition, 42 Variable value-based trigger acquisition, 47 Connected Connection status, 82 Connecting Machine to asset, 35 Connection status Connected, 82 Disconnected, 82 Creating Aspects, 27 Asset, 33 Asset Type, 30 identSNAPSHOT file, 74 Current alarms table of values, 131 Current Alarms, 129 Filtering, 131 graph, 130 Customer Programmer, 108 Customer Qualified Operator, 108 Customer Service, 108

D

Data acquisition Mindsphere, 145 MMM, 147, 151 time-based / cyclic trigger, 147 Variable value-based trigger, 151 Definition Machine Condition, 73 Machine Error Analysis, 73 Machine Transparency, 73 Description, 95 Details graph, 109 Development, 108 Disconnected Connection status, 82 Disturbances Filtering, 137 graph, 135 table of values, 137 Zooming, 136 Drives cyclic, 108

Е

Enabling MMM data aquisition, 36 End Customer Name, 94 End of Commissioning, 94 Equipment Name, 94 Equipment Number, 94 Equipment Type, 94 Error Asset status, 82

F

FAQ, 143 First Commissioning, 94 Fleet Manager identSHNAPSHOT file, 80

Η

Hardware Components, 95, 96, 98 List View, 97 Tree View, 97 HMI Version, 108

I

identSNAPSHOT file Creating, 74 Fleet Manager, 80 Uploading, 75

L

Last boot event, 109 Last Change Date, 95 Licenses, 102 Logbook, 101 Logbook and Licenses, 94 Logbook Entries, 94 Logbook Last Entry Date, 94

Μ

Machine Condition Activation, 87 Definition, 73 Machine connection MMM Function Manual, 25 Machine Error Analysis, 129 Activation, 87 Definition, 73 Restrictions, 129 Machine ID, 94 Machine On, 109 Machine to asset Connecting, 35 Machine Transparency Activation, 87 definition. 73 Manufacturer Name, 94 Meantime between boot events, 109 Mindsphere Data acquisition, 145 MMM Data acquisition, 147, 151 MMM data aquisition Enabling, 36 MMM Function Manual Machine connection, 25 modules, 73

Ν

Name, 95 NC ready, 108 NCK Type/Device Type, 108 NCK Version, 95 No. of boot events, 109 Not configured Configuration status, 82 Number Axes of Channel 1, 108 Number of alarms within 8 hours, 129 Number of alarms within last 7 days, 129 Number of alarms within last day, 129 Number of Control Units and NXs, 95 Number of current alarms, 129 Number of Line Modules, 95 Number of Motor Modules, 95 Number of Total Drive/Motor Components, 95 Number of un-ack HW Changes, 95

Number of un-ack License Changes, 95 Number of un-ack SW Changes, 95

0

OEM/Commissioning, 108 Okay Asset status, 82 Operating Time, 109 graph, 113 table of vaues, 114

Ρ

PLC Version, 95 Prices Components, 87 Pricing sheet, 87 Process Data, 108 Product Group, 94 Production, 109 Purchasing rules, 92

R

Restrictions Machine Error Analysis, 129 Rules of purchase, 92

S

Security Level, 108 table of values, 112 Securty Level graph, 111 Serialnumber CF Card, 94 service packages, 73 SINAMICS Version, 95 SINUMERIK NCU/PPU MLFB, 95 SINUMERIK Operate Version, 95 SINUMERIK_CSMACHINESTATUS, 26 SINUMERIK_CSPROTECTIONLEVEL, 26 SINUMERIK CSRESULTS, 26 SINUMERIK TRIGGERINGALARMS, 26 Software Components, 95, 102 Acknowledgement, 104 List View, 103 Tree View, 103 System Software NCU Version, 95

Т

thereof with high priority, 129
Time since last boot event, 109
Time-based / cyclic trigger acquisition Configuring aspect, 42
Triggering Alarms for Disturbances, 129
Triggering Disturbances within 7 days, 129
Troubleshooting, 143

U

Upload date Configuration status, 82 Uploading identSNAPSHOT file, 75

V

Variable value-based trigger acquisition, 47

W

Warning Asset status, 82