

DIGSI-5-QN0024:

DIGSI 5 QUICK NOTES DIGSI 5 and SCD files

This Quick Note is provided to cover the situation where a Project file and SCD file have been supplied to a technician for loading into a relay. It does not cover the generation of the setting or SCD file.

The Quick Note has been prepared using DIGSI 5 v7.5, but the process is the same for later versions that were available at the time this document was written (DIGSI 5 v7.8, v7.9, v8.0).

To load settings into a SIPROTEC 5 relay that is to use IEC 61850 GOOSE and/or MMS, a DIGSI 5 setting file MUST have a correctly linked SCD file. If the SCD file is not correctly linked or missing the main protection settings will be uploaded but MMS points and GOOSE connections may be missing.

This 'linking' essentially allows DIGSI 5 to pull the required IEC 61850 information from the SCD file and load that with the 'setting file'. You do not separately directly load the SCD file to the relay – but you make the SCD file available for DIGSI 5 to pull the appropriate information which is uploaded as part of the DIGSI 5 "setting upload". WARNING - if the SCD file is not correctly 'available' to DIGSI 5, the DIGSI 5 setting file can still be uploaded to the protection relay without obvious warning messages and you may find some IEC 61850 MMS points are missing, or GOOSE connections do not work.

This linking needs to be checked each time a DIGSI 5 Project is opened on a PC for the first time, or when an existing SCD file is moved or renamed.

When DIGSI 5 is installed on your PC, the separate IEC 61850 System Configurator program is normally also installed. DIGSI 5 will start the IEC 61850 System Configurator as required. However, if needed it should be able to be found via the start menu... All Programs>Siemens Energy>IEC 61850 System Configurator>IEC 61850 System Configurator.



Recommended procedure for linking SCD file

1	Obtain the setting file and separate SCD file created for the target relay								
-	ostant the setting me and separate separate setting the treated for the target relay.								
	This Quick Note example is based on a .dz5 project file being provided, and the SCD file that was								
	linked to this on the source/originating computer has also been provided								
	inked to this on the source/originating computer has also been provided.								
2	Onen the Project in DIGSUE								
2	Open the Project in Diddi 5.								
	la this summed as define have "Detrieved" and ensist folder around as								
	in this example, a .az5 file has been "Retrieved", and project folder saved as								
	"C:\Users\warwick\Documents\Automation\KIN_19_7U185_07_09_18_Issued"								
	Using the Project Tree, navigate to and expand the IEC 61850 stations section.								
	Project tree								
	Devices								
	▼ T KIN_T9_7UT85_07_09_18_Issued								
	T Single-line configuration								
	Add new device								
	📩 Devices and networks								
	▶ 🔄 KIN_T9_7UT85_Issued_07_09_2018 🧳								
	IEC 61850 stations								
	Add new station								
	Load firmware to devices								
	Document information								
	Frames								
	Cover pages								
	Languages & resources								
	Image Online access								
3	Right-click on the IEC station entry, and select Properties								
	Project tree								
	Devices								
	KIN_T9_7UT85_07_09_18_Issued								
	🕂 Single-line configuration								
	Add new device								
	Devices and networks Let KIN TR ZUTRS locued 07 09 2018								
	▼ EC 61850 stations								
	Add new station								
	T KIN_T9_ X Delete Del								
	Load config Rename F2								
	Toad firmwa								
	Frames The Export changes to IEC 61850 System Configurator								
	🕨 🛅 Cover pages 👉 Import changes from IEC 61850 System Configurator								

HV Power File: DIGSI-5-QN0024v1 DIGSI 5 and SCD files .docx Version 1. Feb 2020 Page 2 of 8 Originator: W Beech



A window opens showing the path that was last used in the creation of the project (or location during last save) to link to the SCD file. In our scenario, as the technician copy of DIGSI 5 does not access to the original file location/path, a valid link to a copy of the SCD file must be set up.

General	
Details	Details
	IEC station name: KIN_T9_7UT85_Issued_07_09_2018
	IEC Edition: IEC 61850 Edition 1
	IEC 61850 station description
	Create new IEC 61850 station description (SCD)
sa tha ''	button to the right to select the SCD file obtained in step 1 and click Open
Setne	button to the right to select the SCD file obtained in step 1 and thick Open .
General	
Details	Details
	R Assign IEC 61850 station description (SCU)
	Look in: 🎍 Temp 👻 😨 🌶 📼 🗸
	Name ^
	IEC 61850 station Recent Places PAS
	PQ Forum
	Desktop
	RMU selection tool
	Libraries JSIPSAPPnotes
-	SITRAM
-	Computer
	KIN_T9_7UT85_07_09_18_Issued(1).scd
	Network ()
	File name: KIN_T9_7UT85_07_09_18_issued(1).scd Open
	Files of type: SCD files (".scd) Cancel
ne IEC Stat	ion description file now links to the SCD file this is accessible on this PC.
N T9 7UT85 I	sued 07 09 2018 (IFCStationData)
N_19_70105_8	
General	
Details	Details
	IFC station name: KIN T9 7UT85 Issued 07 09 2018
	IEC Edition: IEC 61850 Edition 1
	IEC 61850 station description
	file: C:lUsers\warwicklDocuments\TemplKIN_T9_7UT85_07_09_18_Issued(1).scd
	Create new IEC 61850 station description (SCD)
	•
ick OK to a	close the Properties window.

HV Power File: DIGSI-5-QN0024v1 DIGSI 5 and SCD files .docx Version 1. Feb 2020 Page 3 of 8 Originator: W Beech



4	4 Note the information warning icons now showing.	
	Project tree	
	Devices	
	KIN_T9_7UT85_07_09_18_Issued	
	🕂 Single-line configuration	
	Add new device	
	Devices and networks	
	KIN_19_70185_Issued_07_09_2018	2
	Add new station	
	* KIN T9 7UT85 Issued 07 09 2018	6
	Load configuration to devices	
	Details of the warning can be found in the inconsistencies list. In	his case DIGSI is informing that
	the associated station is not synchronised with the IEC station.	Ç
	General	🔍 Properties 🚺 Info 👔 💆 Diagnostics
	I Result object Indication	Opens Editor Date Time
	 KIN_179_7UT85_07_09_18_Usued KIN_179_7UT85_USUEd_07_09_2018 IEC 61850 station is modified. Export the updated station to the IEC 61850 System Configurator. KIN_179_TUT85_USUEd_07_09_108_The according of the updated station is not updated with the IEC 61850 System Configurator. 	2/1/2020 3:46:53 PM IEC Station 2/1/2020 3:46:53 PM
	King 19_70105_153ded_07_05_2010 The associated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the device. Import the updated station is not synchronized with the led of 050 conligation of the updated station o	TOD TOD TOD IEL STREAM LODIDUITATOL IEL STREAM CONTRACTOR
		ion nom the IEC 61650 System Conngurator. IEC Station 211/2020 3:49:39 PM
		ion from the IEC 61850 System Configurator, IEC station 211/2020 3:49:59 PM
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station 	n. (There should be no changes,
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: 	n. (There should be no changes, ile is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: 	n. (There should be no changes, File is correctly linked). This is done
5	 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch 	n. (There should be no changes, file is correctly linked). This is done
5	 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. 	n. (There should be no changes, file is correctly linked). This is done
5	 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. 	n. (There should be no changes, iile is correctly linked). This is done
5	 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export che Configurator. 	n. (There should be no changes, file is correctly linked). This is done
5	 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. 	n. (There should be no changes, iile is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. 	n. (There should be no changes, iile is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. Project tree Devices Configuration 	n. (There should be no changes, iile is correctly linked). This is done
5	 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export che Configurator. Project tree Project tree Image: Configuration in the Project Tree and select Export che Configurator. Image: Configuration in the Project Tree and select Export che Configurator. Project tree Image: Configuration in the Project Tree and select Export che Configurator. Image: Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree and select Export che Configuration in the Project Tree	n. (There should be no changes, iile is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. Project tree Project tree © © © © © © © © © 09_18_Issued © Single-line configuration © Add new device © Devices and networks 	n. (There should be no changes, file is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export che Configurator. Project tree Project tree Single-line configuration Add new device Devices and networks Single-line configuration Add new device Devices and networks Single-line configuration Con	n. (There should be no changes, iile is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. Project tree Project tree Export for the station Add new device Devices and networks Export changes for the station KIN_T9_7UT85_Issued_07_09_2018 IEC 61850 stations Add new station 	n. (There should be no changes, file is correctly linked). This is done anges to the IEC 61850 System
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. Project tree Project tree © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © © ©	n. (There should be no changes, file is correctly linked). This is done
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. Project tree Project tree © © KIN_T9_7UT85_07_09_18_Issued © Single-line configuration Add new device Devices and networks © KIN_T9_7UT85_Issued_07_09_2018 © IEC 61850 stations © Add new station © Mode to the station 	n. (There should be no changes, file is correctly linked). This is done anges to the IEC 61850 System
5	 5 To synchronise, EXPORT the changes from DIGSI to the IEC station but this and the following steps are done to ensure that the SCD as follows: Right-click on the Station in the Project Tree and select Export ch Configurator. Project tree Project tree © © © © © © © © © © © © © © © © © © ©	h. (There should be no changes, file is correctly linked). This is done anges to the IEC 61850 System

HV Power File: DIGSI-5-QN0024v1 DIGSI 5 and SCD files .docx Version 1. Feb 2020

Page 4 of 8 Originator: W Beech





HV Power File: DIGSI-5-QN0024v1 DIGSI 5 and SCD files .docx Version 1. Feb 2020 Page 5 of 8 Originator: W Beech



	Check there are no errors reported.
	Import
	Successfully imported.
	Status Imported data
	Validating XML structure
	Validating against schema Validating IEC 61850 edition
	Checking consistency
	Importing device KIN0322P2 Check for unconnected GOOSE inputs
	Caue regult
	ОК
7	The DIGSLE project new bas the SCD file correctly linked – the information warning is no longer
'	The blosh s project now has the SCD me correctly linked – the information warning is no longer
	present.
	Project tree III
	Devices
	KIN_T9_7UT85_07_09_18_Issued
	T Single-line configuration
	Add new device
	Devices and networks
	► KIN_T9_7UT85_Issued_07_09_2018
	▼ IEC 61850 stations
	Add new station
	to ad firmware to devices
	Document information
	Earmes
	Cover pages
	Concerption pages
	Confine access
8	The settings (with GOOSE/MMS information) can now be loaded to the target relay
0	The settings (with GOOSE) while information, can now be loaded to the target relay.



Useful information in the IEC 61850 System Configurator:

Devices screen – IED naming:

KIN_T9_7UT85_07_09_18_Issued(1) [C:\Users\warwick\Documents\Temp\KIN_T9_7UT85_07_09_18_Issued(1).scd] - IEC 61850 System Configurator												
Station Edit View Option Tools Help												
Devices Substation Revork - Substation Reports and logs Protocol mapping												
IEDs	Properties											
Name	IED Description	• 1	dentification									
KIN_T9_7UT85_07_09_18_issued(1)(1)		1	Name	KIN0322P2								
KIN0322P2	IN T9 7UT85 Issued 07 09 2018	1	ED Description	KIN_T9_7UT85_lssued_07_09_2018								
]	1	Туре	Device								
		(Description	KIN_T9_7UT85_lssued_07_09_2018								
		[Device type	7UT85								
		(Configuration version	V07.31.03								
		1	Manufacturer	SIEMENS								
		(Owner	7UT85								
		E	EngRight									
		(Original Scl Version									
		(Original Scl Revision									
		(Original Scl Release									
			Siemens Parameter									
		(Date Modified	10/08/2018 22:57:01								
		1	ED Tool Identifier	DIGSI 5								

Network screen – device IP addresses (can be changed here, or in the relay setting file):

KIN_T9_7UT85_07_09_18_I	ssued(1) [C:\Users\warwick\Doc	cuments\Temp\KIN_1	[9_7UT85_(07_09_18_lssued(1).scd	- IEC 61850 S 🔔 🔳 🗙						
Station Edit Insert Vie Option Tools Help											
Devices Substatic Substatic Substatic COSE SMV ENDERPorts and logs Protocol mapping											
Subnets Properties I											
Name	IED Description	IP address	▼ Identification								
★ T→ KIN T9 7UT85 07 09 18 L			ľ	lame	KIN0322P2/E						
New devices				ED Description	KIN_T9_7UT85_lssued_07_09_201						
			Т	ype	Connected access point						
				Comment							
KIN0322P2/E	KIN_T9_7UT85_Issued_07_09_2018	10.73.136.247		Devicetype	7UT85						
			0	Configuration version	V07.31.03						
			N	Nanufacturer	SIEMENS						
			0	Dwner	7UT85						
			E	EngRight							
			0	Driginal Scl Version							
			0	Driginal Scl Revision							
			👻 F	Parameter							
			1	Paddress	10.73.136.247						
			S	Subnet mask	255.255.255.0						
			S	Standard Gateway							
				Device-device communication	Both						
			N	/ertical communication	Server						
			Т	imer function	False						
			F	Router function	False						
			• 5	Giemens Parameter for SIPRO	TEC						
I			1	lse as a timer	No						

HV Power File: DIGSI-5-QN0024v1 DIGSI 5 and SCD files .docx Version 1. Feb 2020 Page 7 of 8 Originator: W Beech



Protocol mapping:

KIN_T9_7UT85_07_09_18_Issued(1) [C:\Users\warwick\Documents\Temp\KIN_T9_7UT85_07_09_18_Issued(1).scd] - IEC 61850 System Configurator															
Station Edt View Option Tools Help															
	n meanes 🔪 antibarani 🛄 ucuma 🕹 Zanar 🛋 metorus aur bai 🛝 🔊 Luonon Tabbud														
1 🌁															
	Protocol mapping														
ğ 📃	Topology path	IED	LD	LN	DO	DA	CDC	Description	CASDU	IOA 1	TI CASDU	CASDU2	IOA1 I	OA2 I	IOA3
ř.												-			-
		KIN0322P2	Application	LLN0	SGChoiceB1	stVal	SPS	Application/General/>SG choice bit 1							
		KIN0322P2	Application	LLN0	SGChoiceB2	stVal	SPS	Application/General/>SG choice bit 2							
		KIN0322P2	Application	LLN0	SGChoiceB3	stVal	SPS	Application/General/>SG choice bit 3							
		KIN0322P2	Application	LLN0	LedTstStrt	stVal	SPS	Application/General/>LED reset							
		KIN0322P2	Application	LLN0	FloOn	stVal	SPS	Application/General/>Device funct.logoff of	n						
		KIN0322P2	Application	LLN0	FIoOff	stVal	SPS	Application/General/>Dev.funct.logoff.off							
		KIN0322P2	Application	LLN0	FloCmd	stVal	SPS	Application/General/Logged off via control							
		KIN0322P2	Application	LLN0	FloState	stVal	SPS	Application/General/Device logged off							
		KIN0322P2	Application	LLN0	Beh	stVal	INS	Application/General/Behavior							
		KIN0322P2	Application	LLN0	Health	stVal	INS	Application/General/Health (61850 only)							
		KIN0322P2	Application	LLN0	HealthDev	stVal	INS	Application/General/Health							
		KIN0322P2	Application	LLN0	Inactive	stVal	SPS	Application/General/Protection inactive							
		KIN0322P2	Application	LLN0	LedTstOut	stVal	SPS	Application/General/LED have been reset							
		KIN0322P2	Application	LLN0	LocKey	stVal	SPS	Application/General/Sw.authority key/set							

HV Power File: DIGSI-5-QN0024v1 DIGSI 5 and SCD files .docx Version 1. Feb 2020

Page 8 of 8 Originator: W Beech