SKF Multilog On-line System IMx-M 1.X to IMx-M 2.0 Upgrade Procedure

Introduction

This document describes the actions needed to upgrade an SKF Multilog IMx-M protection system from version 1.X.X to version 2.0.0. The information included covers:

- Related hardware and software versions
- Hardware compatibility
- Hardware configuration considerations
- Protection firmware and configuration considerations
- Condition monitoring configuration considerations

Carefully follow all the indications and, in case of any doubt, feel free to contact the application engineers or TSG:

- TSG-AMERICAS@skf.com
- TSG-EMEA@skf.com



Related versions

Hardware versions

The related hardware versions for the SKF Multilog IMx-M 1.X.X and the SKF Multilog IMx-M 2.0.0 are described in **tables 1** and **2**.

		Table 1
SKF Multilog IMx-M 1.X.X		
Component	Revision	
Rack (back plane) CPU Adapter Board CPU Board IO Card Power Supply Relay Board CPU/IO Connector Board Relay Connector Board	4 12 1.44 23 and 24 3 8 4 3	

		Table 2
SKF Multilog IMx-M 2.0.0		
Component	Revision	
Rack (back plane) CPU Adapter Board CPU Board* IO Card Power Supply Relay Board CPU/IO Connector Board Relay Connector Board	4 12 1.44 and 1.45 25 4 8 4 3	

Software versions

The related software versions for the SKF Multilog IMx-M 1.X.X and the SKF Multilog IMx-M 2.0.0 are described in **tables 3** and **4**.

		Table 3			Table 4
SKF Multilog IMx-M 1.X.X			SKF Multilog IMx-M 2.0.0		
Software	Revision		Software	Revision	
Protection Firmware CM Firmware IMx-M Configurator Multilog IMx Configurator Online Device Configurator SKF @ptitude Observer SKF @ptitude Analyst	192 0.972 1.0.13P26 - 8.5 8.5 -		Protection Firmware CM Firmware IMx-M Configurator Multilog IMx Configurator Online Device Configurator SKF @ptitude Observer SKF @ptitude Analyst	214 1.1 1.1.13 2012 FR1 9.0 9.0.1 2012 FR1	

Hardware compatibility

Consider three important things related with the power supplies and the IO boards when upgrading an SKF Multilog IMx-M system, as follows:

- Both power supplies in an SKF Multilog IMx-M rack shall be of the same revision. This means both power supplies are revision 03 or both power supplies are revision 04. Power supply revision 04 produces a higher voltage and cannot be combined with power supply revision 03.
- IO boards with a serial number pre-260 cannot be used in combination with power supplies revision 04 or newer. Because of the higher voltage of the revision 04 power supplies, the RTD temperature measurements will be out of specification.
 Note: IO boards of revision 23 and 24 can only be recalibrated at the factory by replacing some components to support power supply revision 04 or newer. For older IO board revisions, contact SKF Condition Monitoring Center Luleå.
- IO boards of revision 25 are compatible with power supplies of revision 03.

Fig. 1 presents an IO board with serial number 212 and a power supply with revision 04. These two boards shall not be combined.

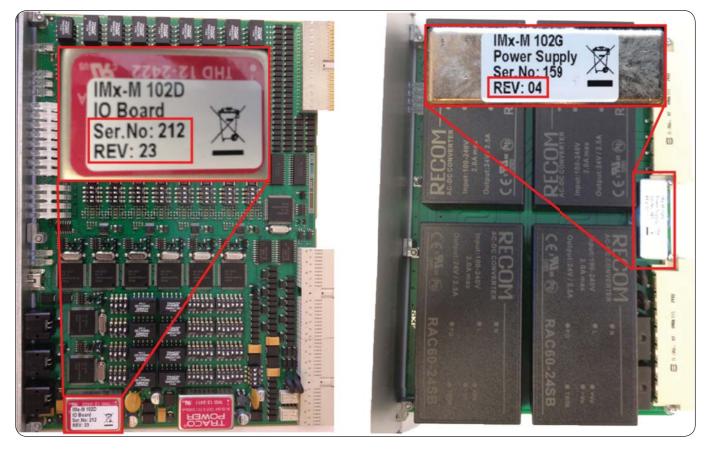


Fig. 1. 10 board with a serial number pre-260 cannot be used in combination with power supply revision 04 or newer.

Hardware configuration considerations

If the upgrade of the system implies a change in an IO board that is used with RTD sensors, care must be taken with the dip switches setup depending on the IO boards' (old and new) serial numbers (\rightarrow fig. 2).

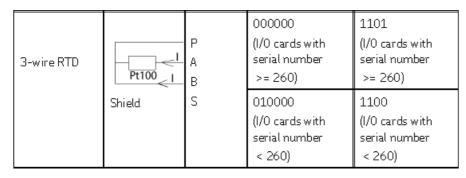


Fig. 2. Dip switch setup for RTD sensors when using IO boards with a serial number lower or higher than 260.

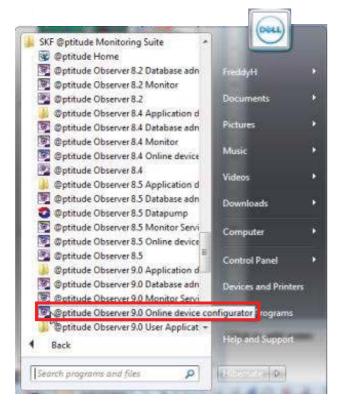
Protection firmware and configuration considerations

The protection configuration in the IO board should be upgraded by using the IMx-M Configurator 1.1.13 due to improved validation of the configuration. For this, get the configuration file from the IO board (recommended) or use the configuration file initially used for your phase 1 system.

It is recommended to upgrade the configuration files before upgrading the firmware, and then download the upgraded configuration files to the IO boards as described in the next procedure.

Procedure

1 Start the Online device configurator or the Multilog IMx Configurator and click Get Config (→ fig. 3)...



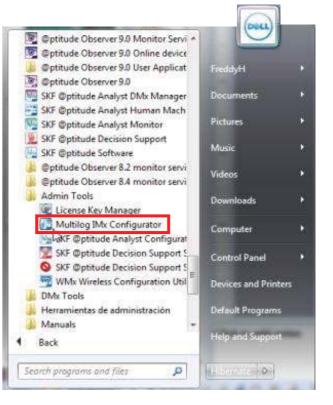


Fig. 3a. Starting the IMx-M Serial Interface.

Serial Interface for IMx-M Protection	×
Select COM Port :	
Command	Adv. debug modes 1. Slave version (2) Update master fiv. 3. Update firmware Adv. Enable debug Ør Capture to disk
Ascii row pause 0 [ms] Get Config Update Config Update Firmware CF	

Fig. 3b. Starting the IMx-M Serial Interface.

2 Save the "IMx-M_TsiCfg_Readout.bin" file (\rightarrow fig. 4)..

STARTING DUMP OF FILE ***	CLEAR LOCK	^			
STARTING DUMP OF FILE *** Save As					_
→ FreddyH → My Docum	nents 🔸 SKF CMC LULEÅ 🔸 TEST 🔸 IMX M 🔸		• i	Search IMX M	
Organize 🔻 New folder					•
Documents	^ Name	Date modified	Туре	Size	
J Music	🗉 🔰 Delivery test	9/5/2011 2:57 PM	File folder		
Pictures	No CPU test	11/30/2011 2:04 PM	File folder		
SKF CMC LULEÅ	Pt100-sensor theory_files	10/19/2011 6:07 AM			
SKF LATINTRADE	Specification test	12/6/2011 4:01 PM	File folder		
Videos	Specification test 2	2/15/2012 4:59 PM	File folder		
FreddyH	Specification test 3	2/17/2012 8:59 AM	File folder		
AppData	Mx-M_ProtCfg_Slot1_2012-01-11_05_2	1/11/2012 6:22 AM	BIN File	3 K	В
E Contacts	IMx-M_ProtCfg_527_Slot1_5_2012-01-12		BIN File	3 K	В
besktop	IMx-M_ProtCfg_Test_Slot1_1_2011-07-21		BIN File	3 K	В
bownloads	IMx-M_TsiCfg_Readout.BIN	8/5/2011 11:44 AM	BIN File	3 K	В
nar 🙀 Favorites	IMx-R_TsiCfg_Readout.bin	10/17/2011 1:44 PM	BIN File	3 K	В
Links	Orbit testing.bin	12/12/2011 4:50 PM	BIN File	3 K	В
My Documents	PT100 testing F.bin	12/27/2011 11:52	BIN File	3 K	B
rov 📙 Bluetooth	 PT100 testina.bin 	12/27/2011 11:45	BIN File	3 K	В
File name: IMx-M_TsiCfg_Read	dout.bin				
Save as type: Binary files(*.BIN)					

Fig. 4. Readout file stored as "IMx-M_TsiCfg_Readout.bin".

3 Start the IMx-M Configurator application, type the password (secret) and click **Open Configuration** (→ fig. 5)..

IMxMConfig.exe	
↓ ·	S IMx-M Protection Configurator 1.1.13
IMx-M Protection Configurator 1.1.13	Configuration settings Configure IMx-M Change password File commands
	Open Configuration Generate Configuration
	Type: 5 Close

Fig. 5. Starting IMx-M Configurator application.

4 Select the "IMx-M_TsiCfg_Readout.bin" file or a previously stored configuration file and click **Open** (→ fig. 6).

Irganize + New folder				目 •	1
Apps del Drivers Intel OkiDriver oractexe pathops PertLogs Program Files Program Files OkiDriver Program Files Program Files QUARANTINE skf temp Tempdata Ucers Default		Name Delivery test No CPU test Pt00-sensor theory, files Specification test Specification test 2 Specification test 3 Mo-M_PrectCg_Stort_2012-01-11_05_2 Mo-M_PrectCg_Stort_2012-01-22 MO-M_PrectGg_Stort_2012-01-22 MO-M_PrectGg_S	Date modified 9/5/2011 2:57 PM 11/30/2011 2:04 PM 10/19/2011 6:07 AM 2/15/2012 4:59 PM 2/15/2012 4:59 PM 2/17/2012 6:59 AM 1/11/2012 6:23 AM 1/21/2012 6:23 AM 1/21/2011 2:08 PM 2/20/2012 5:27 PM 10/17/2011 1:45 PM 12/27/2011 1:51 PM 12/27/2011 11:52	Type File folder File folder File folder File folder File folder BIN File BIN File BIN File BIN File BIN File BIN File BIN File BIN File BIN File	5
File name: IMx-M_TsiCfg_Reador	ut.80N		• Mo-Mi	Configuration file	(".bir *

Fig. 6. Readout file selection.

5 Click **OK** and then click **Configure IMx-M** (\rightarrow fig. 7).

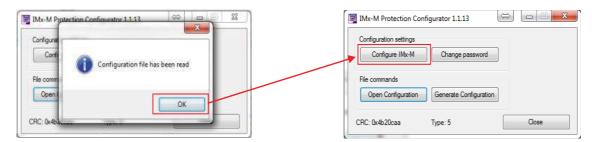


Fig. 7. Opening the configuration file.

6 Check that the configurations for analogue channels, digital channels, relays and modbus are OK (→ fig. 8).

Marthon Series	nels Digital channels Relay	1001127				_			_	_	-	_	_	-
System setup Installed IO boards Stot 1 Stot 2 Stot 3 Stot 4	Installed relay boards Stot 1 Stot 2 Stot 3	·	alization of	system setu;					Same of the					•
This configuration is for		а 5 П	1		SE									
3101 2	•).	1					0	83	-		0		-	

Fig. 8. Verify that all the configurations are OK.

7 If using Power Supply Circuit Fault Check, you should verify the ranges according to the type of power supply used (-> fig. 9). See table 5.

Firmware versions older than 214 have fixed power supply check limits (not user configurable) and hence do not support the new revision 04 power supply with increased voltage level.

General Analogue	channels Digital	channels Relay	s Modbus	Power			
	at 1 Circuit Fault Ch						
V Enable	Low level:	22000	[mV]	High level:	26000	[wV]	
Power Supply Ur	nt 2 Gircuit Fault Ch	eck					
V Enable	Low level:	22000	[mV]	High level:	26000	[mV]	

Fig. 9a. Power configuration for power supplies revision 03.

General	Analogue channels	Digital channels	Relays Modbu	as Power			
Power	Supply Unit 1 Circuit	Fault Check					
V E	inable Low	level: 240	00 [mV]	High level:	27500	[Vm]	
Power	Supply Unit 2 Circuit	Fault Check					
	nable Low	level: 240	00 [mV]	High level:	27500	[mV]	

Fig. 9b. Power configuration for power supplies revision 04.

			Table 5
Power supply circu	it fault check ranges		
	Power supply rev 03 (mV)	Power supply rev 04 (mV)	
Low level High level	22000 26000	24000 27500	

8 When all the parameters are configured, click **Close** and then generate the configuration file (→ **fig. 10**). The configuration file will be stored in the same folder as where the IMx-M Protection Configurator software is located.

Before downloading the new configuration file to the IO board, proceed with the firmware upgrade.

Configuration settings	
Configure IMx-M	Change password
File commands	
Open Configuration	Generate Configuration

Fig. 10. Generating the new configuration file.

9 Advanced upgrade procedure must be used when upgrading the protection firmware to version 214. For this, go back to the IMx-M Serial Interface (as in step 1.), select the **Enable debug** option and then click **Update firmware Adv.** (→ **fig. 11**).

Serial Interface for IMx-M Protection	
Select COM Port : 1	
CLEAR LOCK	
	Adv. debug modes
	1. Slave version
	 Update master fw. Update firmware Adv.
	✓ Enable debug
T Command	Capture to disk
	J€ Capitale to disk
Ascii row pause 0 [ms] Get Config Update Config Update Firmware CF	Close

Fig. 11. Update firmware advanced when upgrading to firmware 214.

10 Select firmware imxm_214.a48 and click Open (→ fig. 12).

pen		0.8.	×
🕤 🔵 🔻 🥼 « SKF CMC LULEÅ	TEST • IMX M • Specification test 4 • Phase 2 • Test 2 • Applications		Applications 3
Organize 👻 New folder			II • 🗐 0
Release informati * Signal simulation Special sensors	SKF CMC LULEÅ library Applications		Arrange by: Folder -
Specification test	Name	Date modified	Type Si
J Specification test	imxm_214.a48	8/27/2012 12:41 PM	A48 File
Specification test Specification test Specification test Specification test CM firmware CM firmware Modiscan Simply modb Simply modb Test 1 Part 2 Paplication Configuration Configurat	Type: A48 File Size: 36 KB Date modified: 8/27/2012 12:41 PM		
S Modscanzip +	4 [
File <u>n</u> ame: in	xm_214.a48	 Firmwa Ope 	n 🔽 Cancel

Fig. 12. Select firmware version 214.

11 Type the password (secret) and click OK (→ fig. 13). It will take a few minutes to send the firmware, and then a pop up window will display when the firmware has successfully been downloaded. The "intd0" command will give you information about the firmware version (→ fig. 14).

Serial Interface for IMx-M Protection	23
Select COM Port: 6	
4 Data: 03 FW Brcst: Adr: 00FC7E90 Num: 64 Data: AF FW Brcst: Adr: 00FC7EF4 Num: 64 Data: F0 FW Brcst: Adr: 00FC7F58 Num: 64 Data: BB FW Brcst: Adr: 00FC7F50 Num: 64 Data: 23 FW Brcst: Adr: 00FC6020 Num: 64 Data: 23 FW Brcst: Adr: 00FC8084 Num: 64 Data: DA FW Brcst: Adr: 00FC8080 Num: 64 Data: DA FW Brcst: Adr: 00FC8180 Num: FW Brcst: Adr: 00FC8180 Num: FW Brcst: Adr: 00FC8218 Num: FW Brcst: Adr: 00FC8210 Num: FW Brcst: Adr: 00FC8210 Num: FW Brcst: Adr: 00FC8340 Num: FW Brcst: Adr: 00FC8340 Num: FW Brcst: Adr: 00FC8400 Num: FW Brcst: Adr: 00FC8400 Num: FW Brcst: Adr: 00FC8340 Num: FW Brcst: Adr: 00FC8340 Num: FW Brcst: Adr: 00FC8400 Num: FW Brcst: Adr: 00FC8580 Num:	er fw.
FW Brcst: Adr: 00FC8660 Num: 64 Data: CB FW Brcst: Adr: 00FC86C4 Num: 64 Data: 0C FW Brcst: Adr: 00FC8728 Num: 64 Data: 88	
Command Capture to disk	
Ascii row pause 0 [ms] Get Config Update Config Update Firmware CF	ose

Fig. 13. Initiating firmware download.

Serial Interface for IMx-M Protection	×
Select COM Port : 6	
CLEAR LOCK	
SFW CRC: 00000000 .	
intd0	
FW Versions:	
IOM = 0214	
IOS0 = 0214	
IOS1 = 0214	
IOS2 = 0214	
IOS3 = 0214	
IOS4 = 0214	
IOS5 = 0214	
IOS6 = 0214	
IOS7 = 0214 RELM = 0214	
RELM = 0214 RELS0= 0214	
RELSU= 0214 RELS1= 0214	
RELS1- 0214 RELS2= 0214	
RELS3= 0214	Adv. debug modes
RELS4= 0214	
RELS5= 0214	1. Slave version
RELS6= 0214	(2). Update master fw.
RELS7= 0214	
MFW CRC: 11749521	3. Update firmware Adv.
SFW CRC: 00000000	
· · · · · · · · · · · · · · · · · · ·	Enable debug
Command	Capture to disk
Ascii row pause 0 [ms] Get Config Update Config Update Firmware CF	

Fig. 14. Printout for the intd0 command.

Firmware 214 can be used on previously released IO boards (revisions 23 and 24).

12 Now it is possible to proceed downloading the upgraded configuration file. Click Update Config, select the upgraded configuration file and type the password to download the new configuration to the IO board (\rightarrow fig. 15).

rial Interface for IMx-M Protection			
Select COM Port : 6			
CLEAR	LOCK		
FW CRC: 00000000	* ·		
ntd0			
W Versions: ON = 0214		Serial Interface for IMx-M Protection	
CR = 0214 OS0 = 0214		Select COM Port: 6 *	
051 = 0214			
052 = 0214		Sending file to DAD	
OS3 = 0214		CLEAR LOOK	
054 = 0214		Relflash: OK	
035 = 0214		Please send configuration file	
036 = 0214		Received ok.	
057 = 0214		Relflash: Flash programming started	
ELM = 0214		E	
ELS0= 0214		Rebooting! Cause: 0x50	
ELS1= 0214		TWY-M (C) SKE CHC AB	
ELS2= 0214	A Password	sion: 0214	
ELS3= 0214 ELS4= 0214		1d: Aug 27 2012 12:43:46 Observer on-line device Configura.	
EL54= 0214 EL55= 0214	- Please enter password		
ELS6= 0214	- rease ever particular		
ELS7= 0214		rdType: IO Seffect OK	
(FW CRC: 11749521	Dk.	Cancel cuAdr: 00	
SFW CRC: 00000000		ntID: 01	
	Enable debug	mySlotID: 02	Adv. debug modes
ommand		mynemic of	-
VIIIINE N	Capture to disk	Scanning for I2C devices 3C 3	1. Slave version
		DisarmCh: 0000	121 Update master for
aci row pause 0 [ms] Get Config Update Config Update Firmware	CF Dose	Selftest; Ok!	
Ice row paces in [mail occounty close county chose county		DiagOk Disp: OK	3. Update firmware Ad
Ория		1	F Enable debug
* 05 (C) + Users + Freddyl+ + My Documents + SKF CMC BLEA + TEST + BMCM +	• 49 (Search MIT)	Command	Capiture to disk.
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a dell	8/5/2011 2-57 PM File-folder		
Bruest Burger	11/30/2011 2/4 PM File Islate		
in local and here the second s	10/15/2011 AM Fitchder		
ChiDover	12/6/201 AULPM File-folder		
a cractese Exercise text 2	2/15/2/12 4-50 PM File-fulder		
primo	2/12/2012/8-30 AM File-fulder P.		
Perfogs			
Program Files			
Program Files (MR)	TITLIDEL 200 PM BRIFIN		
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QUARANTINE Date of Course and Cou	10/17/2011 1-44 PM #81/File		

Fig. 15. Download the new configurations to the SKF Multilog IMx-M.

Condition monitoring configuration considerations

The distribution of the virtual channels when using the internal communication between the protection part and the condition monitoring part has changed in SKF @ptitude Observer. Because of this, care must be taken and a review of the virtual channel assignment shall be done according to the following:

1 When using SKF @ptitude Observer 8.5 in combination with CM firmware 0.972, the virtual channels were distributed as in table 6:

				Table 6
SKF Multilog IMx-M	1.X			
Protection analogue channel	Analogue virtual channel	Protection digital channel	Digital virtual channel	
ch1 ch2 ch3 ch4 ch5 ch6 ch7 ch8 ch9 ch10 ch11 ch12 ch13 ch14 ch15 ch16	101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116	ch1 ch2 ch3 ch4 ch5 ch6 ch7 ch8	117 118 119 120 121 122 123 124	

2 When using SKF @ptitude Observer 9.0.1 in combination with CM firmware 1.1, the virtual channels are now distributed as in table 7:

						Table 7
SKF Multilog IMx-M	12.0.0					
Protection analogue channel	Analogue virtual channel	Protection analogue channel (DC GAP)	Analogue virtual channel (DC GAP	Protection digital channel	Digital virtual channel	
ch1 ch2 ch3 ch4 ch5 ch6 ch7 ch8 ch9 ch10 ch11	101 102 103 104 105 106 107 108 109 110 111	ch1 ch2 ch3 ch4 ch5 ch6 ch7 ch8 ch9 ch10 ch11	117 118 119 120 121 122 123 124 125 126 127	ch1 ch2 ch3 ch4 ch5 ch6 ch7 ch8	101 102 103 104 105 106 107 108	
ch12 ch13 ch14 ch15 ch16	112 113 114 115 116	ch12 ch13 ch14 ch15 ch16	128 129 130 131 132			

Please contact:

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