Focus 61 and Scalable Quality Solution 3 Integration

Pocket Guide

1 Revision history

Revision	Date	Author	Description
1.0	August 11, 2017	Phillip Irla, Hendrik Fischer	Initial version
1.1	January 10, 2020	Hendrik Fischer	SQS name change; change of instructions due to SQS3 Configurator improvements

Contents

1 Revision history 2
2 Purpose of this document 4
3 Prerequisites 4
4 Focus 61 configuration 4
4.1 ToolsTalk BLM 4
4.2 Pick a station 4
4.3 Add an event 5
4.4 Add an action 5-6
4.5 Update Open Protocol configuration 6
4.6 Link a wrench 6
4.7 Add a job 6
5 Scalable Quality Solution 3 configuration 6
5.1 Add the tool 6
5.2 Assigning the tool to bolt cases 6
6 Troubleshooting 7
6.1 No connection from SQS3 to Focus 61 7
6.2 Wrench not enabled 7
6.3 No torque data reported to SQS3 8
6.4 Torque sequence appears to be aborted in SQS3 8

2 Purpose of this document

This document describes the configuration steps that are required to integrate a Focus 61 controller and the Scalable Quality Solution 3 (SQS3). It details only those steps that are specific to the basic integration of the two products. The reader of the document needs to possess good knowledge of the configuration and operation of all components involved.

3 Prerequisites

These components are required for a successful integration of Focus 61 and SQS3:

- A Focus 61 with a FW revision supported by SQS3 according to the SQS3 Fact Sheet: http://toosseas0004/portal/content.php/3343-Single-Qualition-Solution-tool-connectivity-corner
- ToolsTalk BLM 10.3.1 or newer
- Scalable Quality Solution 3.3.0 or newer

4 Focus 61 configuration

4.1 ToolsTalk BLM

Start ToolsTalk BLM, switch the *Target device* to “Focus 61” and connect to your Focus 61 controller.

4.2 Pick a station

Choose one of the two stations of the Focus 61 that you want to configure for the integration with the SQS3 and perform the following actions on this station. You can also integrate both station with the SQS3. In this case repeat all configuration steps of this chapter for the other station.

4.3 Add an event

The SQS3 will submit a Vehicle Identification Number (VIN) to the Focus 61 via Open Protocol every time it sends a tightening job. You need to configure an event on the Focus 61 so it can react to the upload of a VIN.

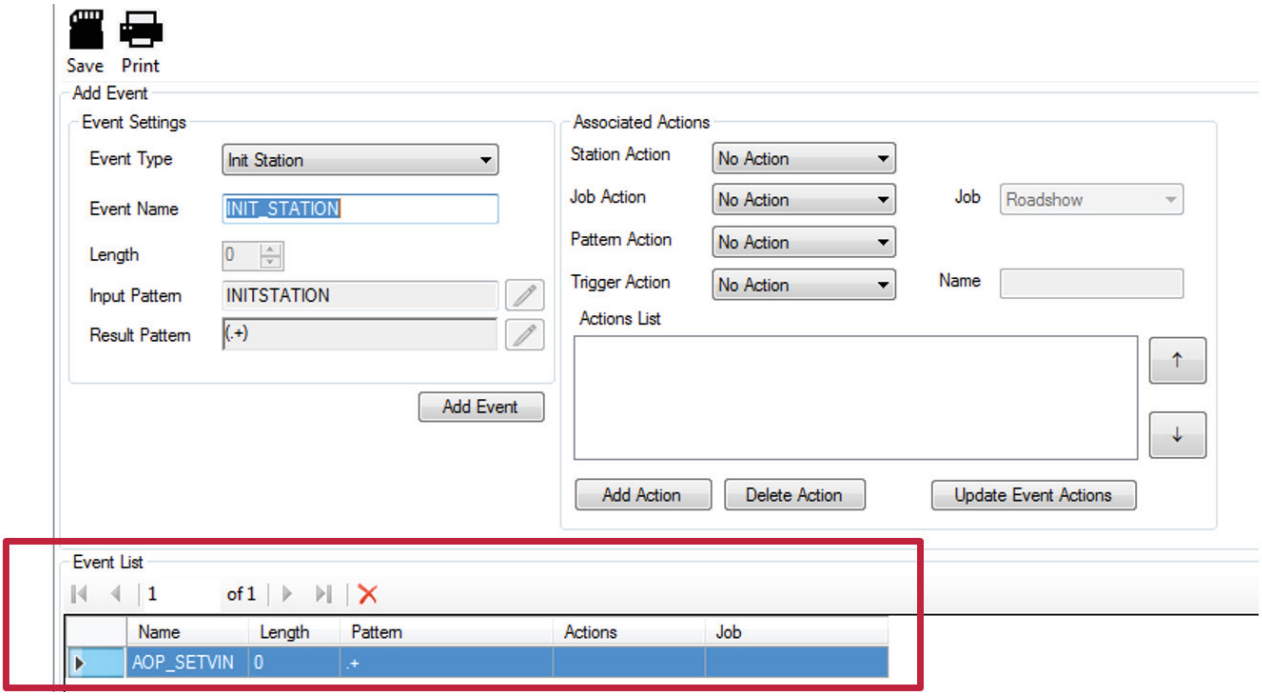
1. Login as Super User from the main menu by clicking *Tools, Super User, Login…*
   The password is **"focus6x"**
2. Super User has access to the *Events* feature in the station configuration. Double-click it to open the *Events* pane.

3. From the list *Event Type* select "AOP Set ID", leave all other settings to their defaults, and click *Add Event*.

4.4 Add an action

The Focus 61 needs to set the station identifier uploaded from the SQS3 every time the event "AOP Set ID" occurs.

1. In the *Events* pane, select the event *AOP_SETVIN* from the *Event List*, which you added in the previous step.



4.4 Add an action

2. From the list *Pattern Action* select "Set Station IDN" and click *Add Action* to add the new action to the *Actions List*.
3. Click *Update Event Actions*.
4. Save the Focus 61 configuration.

4.5 Update Open Protocol configuration

An adjustment to the Open Protocol configuration of the station is required.

1. Double-click *Open Protocol* from the *Connections* folder of the wrench map.
2. Switch *Adjustment* to "Customer_5" and press *Save*.

4.6 Link a wrench

Link a wrench to the controller and set up the parameter set (PSet).

4.7 Add a job

Create a job for the wrench you just linked. If you don't know the correct batch size, select *Infinite Batch Size*. Set the *Timeout [s]* of the *Job Settings* to "0" so the job will not time out and check *Infinite NOK*. The SQS3 will control the time outs and the allowed number of retries on NOK.

5 Scalable Quality Solution 3 configuration

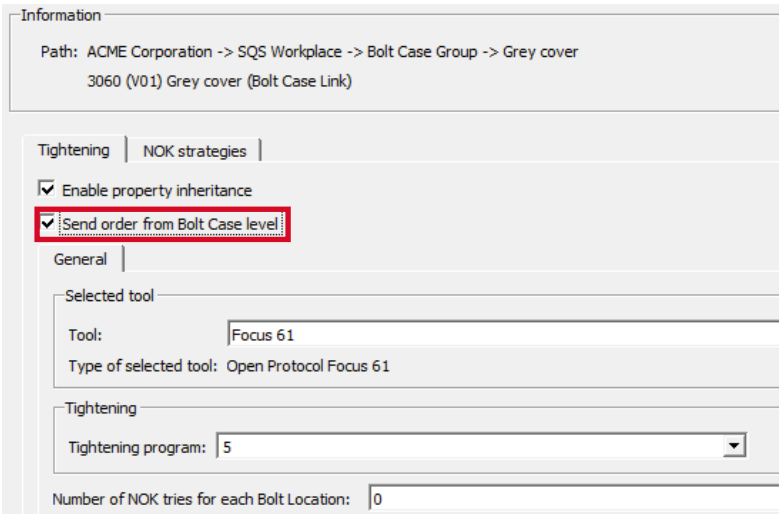
5.1 Add the tool

The Open Protocol connection to the Focus 61 needs to be configured:

1. In the *Station Tree*, add new *Tool* to the *Hardware* of your station. Choose "Open Protocol Focus 61" as the *Device class*.
2. Enter a *Tool/channel name* for your Focus 61 controller. Also enter the *IP Address* of the controller interface 2.1 and adjust the *Port* if it's not the default of "4545". The default IP address of the Focus 61 is 192.168.1.61.

5.2 Assigning the tool to bolt cases

When you assign the Focus 61 to any of your bolt cases on the station, it is recommended you check the option *Send order from bolt case level*. This speeds up enabling and disabling the wrench.



6 Troubleshooting

6.1 No connection from SQS3 to Focus 61

The status light that represents the Focus 61 in the SQS3 operator guidance remains red. This means that the SQS3 is unable to establish a network connection to the Focus 61.

Cause	Solution
The network settings of the Focus 61 do not meet the settings of the network it is in. The controller is completely unavailable on the network.	Try to connect ToolsTalk BLM to the controller. If the connection is not available, verify the network settings of the Focus 61 with a network administrator and correct them if needed.
The network settings of the PC that hosts the SQS3 do not meet the settings of the network it is in. No other network device can be reached from the PC.	Use the *ping* command to reach other devices on the network. If there's no connection to other network devices, verify the network settings of the PC with a network administrator and correct them if needed.
The IP address and/or the Open Protocol port of the Focus 61 is incorrectly configured in the SQS3.	In the SQS3 Configurator, open the *Network* tab of the Focus61 Open Protocol tool you configured for the Focus 61. Check the IP address and the Open Protocol port configured for the Focus 61. Correct them if needed. Be sure to use the Open Protocol port associated with the correct station of the Focus 61!
Network IP address conflict	Check the Focus 61 for further information. If there is an IP address conflict in the network, this will be indicated on the Focus 61 display.

6.2 Wrench not enabled

When the SQS3 operator guidance reaches a bolt case that is to be fastened with a mechatronic wrench, the bolt location on the screen turns blue but the LED of the mechatronic wrench does not start flashing blue meaning it stays locked.

Cause	Solution
The wrench is not linked to the Focus 61 controller. This is indicated by a rapidly flashing red LED on the wrench.	Use ToolsTalk BLM to link the wrench to a station of the Focus 61. Also configure a PSet for the wrench.
There is no job configured for this station.	Using ToolsTalk BLM verify that there is at least one job available at the station.
The Open Protocol adjustment is incorrect.	Using ToolsTalk BLM make sure the Open Protocol adjustment is set to "Customer_5".
The wrench is linked to another station	Link the wrench to the correct station
The wrench is not ready to be used	Check the four status LEDs of the wrench for their status. Refer to the signal table of the Mechatronic Wrench user guide to determine whether the wrench is in a normal or error state.

6.3 No torque data reported to SQS3

When a bolt is torqued, the result data is reported from the mechatronic wrench to the controller but the active bolt location on the SQS3 operator guidance stays blue instead of turning green or red. The operator guidance does not move on to the next bolt location. Under certain circumstance the Focus 61 displays "LCK" in its display next to the torque results.

Cause	Solution
The event "AOP Set ID" is not configured or it is not associated with the right action.	Configure the event "AOP Set ID" for the station on the Focus 61 as explained in chapter 4.2. Associate the pattern action "Set Station IDN" with the event as explained in chapter 4.3.
The wrench is not enabled at all. (blue LED on wrench won't start flashing at all)	Link the wrench to the station of the Focus 61 if not done yet.
The wrench is enabled but the blue LED starts flashing only after several seconds pass.	Set the option "Send order from bolt case" level for all bolt cases that are torqued with a mechatronic wrench. See chapter 5.2 for details.
The identifier is not stored in the job file.	Ensure that ToolsTalk BLM Version 10.2.1 is used (or newer). Delete any existing jobs from the configuration and recreate them.

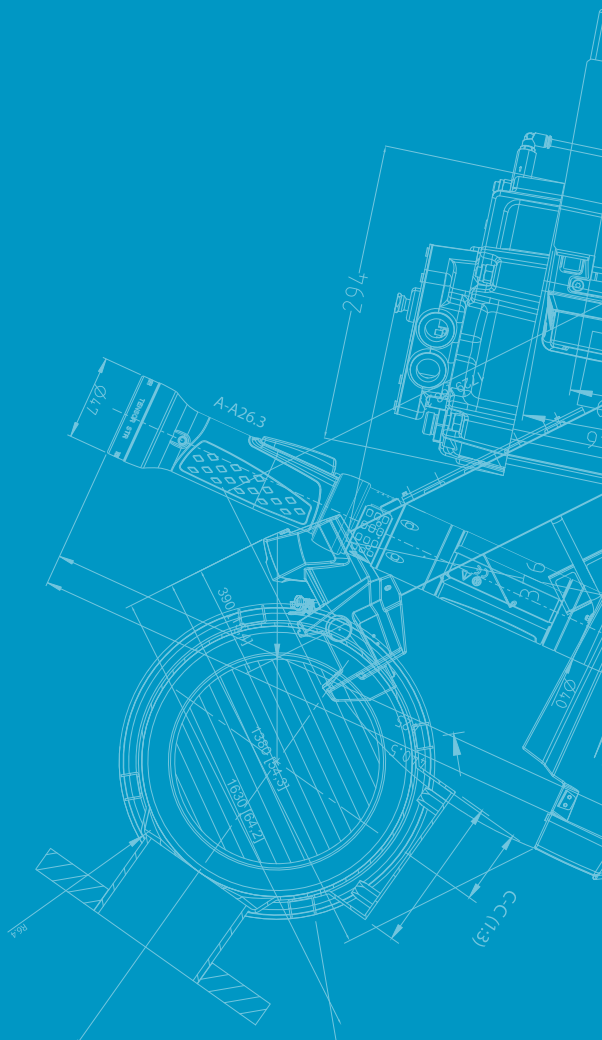
6.4 Torque sequence appears to be aborted in SQS3

Bolts are torqued with the mechatronic wrench and the results are displayed in the SQS3 operator guidance correctly. In some cases however the SQS3 stops receiving results from the Focus 61 in the middle of a torque sequence of a bolt case. The active (blue) bolt location will not turn green or red and the blue bolt location will not move on. At the same time, the Focus 61 displays LCK next to the torque results and the wrench is locked (blue LED flashes).

Cause	Solution
The *Batch Size* or *Max NOK* settings of the job are lower than the number of bolt locations in the bolt case and/or the number of *NOK* tries on the bolt case.	Increase the *Batch Size* and *Max NOK* so they match the settings in the SQS3. When in doubt, check *Infinite Batch Size* and *Infinite NOK* on the job to let the SQS3 control the number of tightenings and the number of NOKs.
A *Timeout [s]* is specified in the *Job Settings* in Tools Talk BLM.	Set the *Timeout [s]* to 0 seconds, which will disable this function.

Notes:

Atlas Copco AB

(publ) SE-105 23 Stockholm, Sweden
Phone: +46 8 743 80 00
Reg. no: 556014-2720

atlascopco.com