



Technical Release Notes

Version 5.11.23

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1 Overview

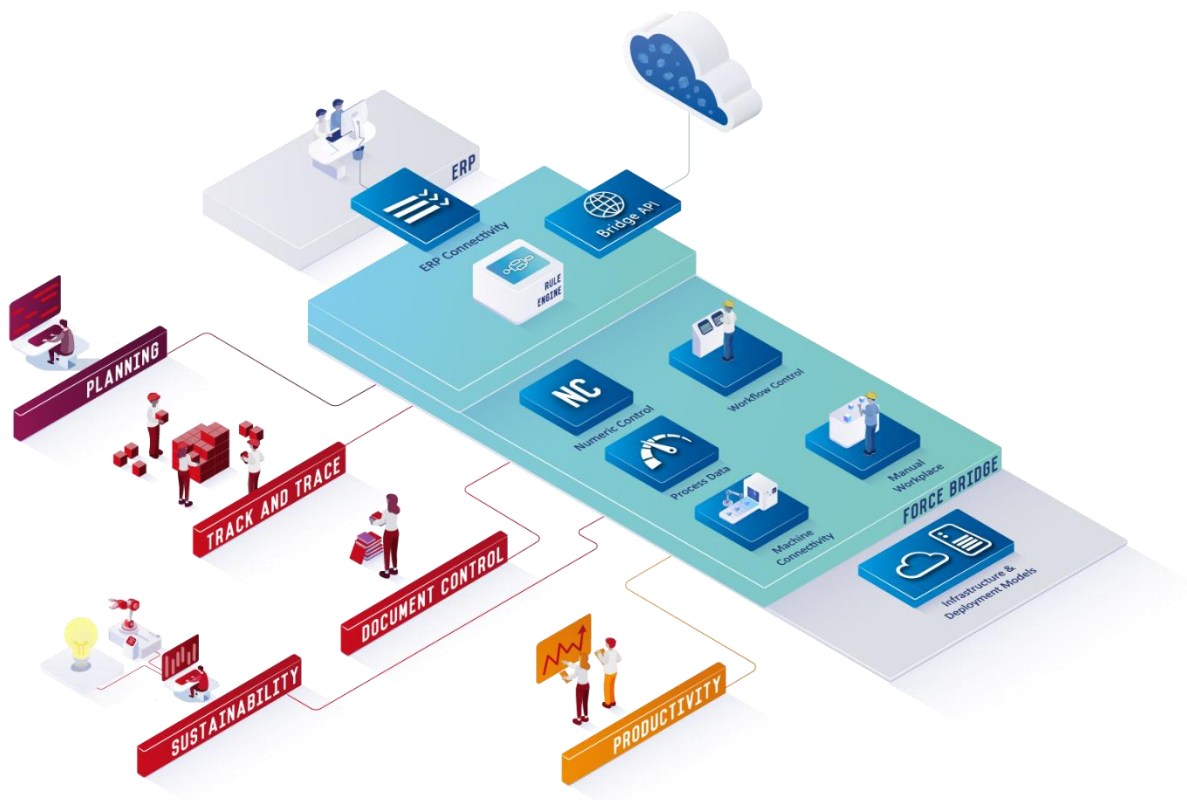
FORCAM provides companies with all the information they need to control and optimize their production. The modular IIoT solution FORCAM FORCE™ IIOT is as flexible as the needs of customers. With a variety of production apps, FORCAM helps companies to make their processes more transparent and improve their workflows. In this way, companies create the basis for optimization measures and sustainable success, thereby ensuring their competitiveness.

FORCAM is always endeavored to optimize the solution FORCAM FORCE™ IIOT further, to enrich it with functions, offering customers consistent growth and greatest possible use. For this purpose, several releases are published throughout the year.

This document lists technical changes during the 5.11.23 release. It provides an overview about configurations and parameters that are new or changed for FORCAM FORCE™ IIOT. For changes in the functionality, please refer to the Functional Release Notes of this release.

Detailed descriptions of the individual functions can be found in the respective product documentation.

 In some cases, there are no technical changes. These are marked accordingly.




2 FORCAM FORCE™ COMMON

2.1 SSO - State Monitor Updating Only on Refresh

Affected module	Affected area	Status
Workbench	Digital Planning Board	New

Workbench changes

Introduced “longpolling” component of Captain Casa instead of “websocketpolling” inside different Workbench UIs, because SSO is not working with AJP (Apache JServ Protocol) with “websocketpolling”.

 The traditional LONGPOLLING component opens an http-connection and keeps it open. There are always browser limits with the number of connections that can be kept open. The number of tabs/UIs of the Workbench is responsive via browser from host that are listed below:

Browser	Number of Tabs/UI
Chrome	6
Edge	6
Firefox 2	2
Firefox 3+	6
IE 7	2
IE 8	6
IE 10	8
Opera 9.26	4
Opera 12	6
Safari 3	4
Safari 5	6

2.2 HTTPS Protocol and Encrypted System Credentials

Affected module	Affected area	Status
FFAuth	Tomcat Server Configuration	Changed

The SSL connector must use the “com.forcam.lib.security.tomcat.SecureHttp11Nio2Protocol” class to support decryption of the password.

There is a forcam.security-library.tomcat-X.X-jar-with-dependencies.jar file deployed to your tomcat/lib directory.

Both things are done for the user via Finster Base.

Migration steps

Run Finster Base to apply the changes to your server.xml and deploy the required library.

If you are using SSL for other applications, then use FFAuth, then apply the same configuration to these SSL connectors manually.

2.3 Installation for BridgeAPI: Scalability of ffwebservices

Affected module	Affected area	Status
Connectivity	BridgeAPI	New

The changes are applied to the properties which are taken by the FORCAM FORCE applications. The “use multi-node” toggle will also cause changes in the broker.xml file of ActiveMQ, there will be three extra queues defined.

```
<address name="RequestQ.mirror">
  <multicast>
    <queue name="ffwebservices.requestQ">
      <durable>true</durable>
    </queue>
  </multicast>
</address>
<address name="topic.GlobalEvent">
  <multicast>
    <queue name="ffwebservices.globalEvent">
      <durable>true</durable>
    </queue>
  </multicast>
</address>
<address name="topic.ServerEventInformerTopic">
  <multicast>
    <queue name="ffwebservices.serverEvent">
      <durable>true</durable>
    </queue>
  </multicast>
</address>
```

3 Cross-Platform

3.1 Operating State Classes for the SFT

Affected module	Affected area	Status
Workbench	Shopfloor Terminal/Master Data	New

Migration steps

Use regular java migration scripts to receive the newly added column Operating State Class Assignment.

Database changes

New Table “FR_MD_OPSTATE_CLASS_WP_REL” is created to store the relation between the workplace and the operating state class.

3.2 Implementation of Location Identifier

Affected module	Affected area	Status
Workbench/Office	Shopfloor Terminal/ERP/Reporting	New

Logic library

Several logic components have been modified to support the feature. No changes besides the logic upgrade to existing logic projects are necessary. The feature is always active but irrelevant if no location identifier is transmitted.

Database changes

The event tables (FR_EVT_* have been given a new column “LOCATION_IDENTIFIER” which holds the location identifier for each event.

Commands

All commands for the Rule Engine can now also carry the optional field mLocationIdentifier.

3.3 Track & Trace data buffer on EDGE

Affected module	Affected area	Status
Workbench/Office	fftracing-acquisition, fftracing-processing, ffnewoffice, ffworker, ffworkbench	Changed

Custom coding

Due to the huge refactoring in this ticket, also the custom coding related to Track & Trace can be impacted. There is a Java migration in place; nevertheless, the Groovy scripting must be checked before a go-live.

Track & Trace Groovy scripting is part of the customization of a customer installation. Custom code related to Track & Trace can exist as:

- Groovy activity step in a SFT activity
- Trace Procedure configured in Office under Track & Trace > Configuration > Trace Procedure. Here Track & Trace supports:
 - Functional procedure
 - Search procedure
 - Check procedure
- Bulk processing
- User Exit configured in Office under Track & Trace > Configuration > User Exit

Our TCs must check the custom coding on the test system of the customer. In some instances, those tests must be done by the customer itself, if - for instance - the customizing has been done by the customer itself. In this case the customer must be informed by our TC / BC that custom coding needs to be checked before a go-live/update/upgrade of the productive system.

MongoDB deployment:

MongoDB should run as a replica set (as it is also described in our system requirements today) to use the MongoDB change event feature.

Migration steps

Run the NoSQL migration. For this, please get in touch with the Trace team.

Configuration changes (common.properties)

Add the following in the common.properties file for the key activemq.server.deserializationWhiteList:

```
org.springframework.util.LinkedCaseInsensitiveMap
```

Database changes

SQL database schema is not changed.

4 Platform & Connectivity

4.1 New APIs for Recorded Attendance Times

Affected module	Affected area	Status
Connectivity	BridgeAPI	New

No technical changes.

4.2 MQTT Enhancement

Affected module	Affected area	Status
Connectivity	MQTT plugin	Changed

SSL capability implemented.

Check after installation

In the wrapper.conf, these files must be specified new:

- wrapper.java.classpath.15=../lib/bcpkix-jdk15on-1.64.jar
- wrapper.java.classpath.16=../lib/bcprov-jdk15on-1.64.jar
- These files must be located in the Jarvis\lib directory.

Configuration

The SSL parameters are specified after the URL. Optionally, a configuration file can also be specified here. Note that the URL must start with "ssl:".

Example of a configuration with direct specification of the SSL parameters:

```
ssl://localhost:8883(LOGD:10:2)(SSL:caCertificateFile=D:\tmp\ssl\m2mqtt_ca.crt,clientCertificateFile=D:\tmp\ssl\m2mqtt_client.crt,clientKeyFile=D:\tmp\ssl\m2mqtt_client.key,clientKeyPassword=fact)
```

Example of a configuration with SSL configuration file:

```
ssl://localhost:8883(LOGD:10:2)(SSL:sslParameters.cfg)
```

Example of SSL configuration file:

```
caCertificateFile=D:\tmp\ssl\m2mqtt_ca.der
clientCertificateFile=D:\tmp\ssl\m2mqtt_client.der
clientKeyFile=D:\tmp\ssl\m2mqtt_client.key.der
clientKeyPassword=fact
```

Platform & Connectivity

The parameters (not case-sensitive):

caCertificateFile	CA certificate file
clientCertificateFile	Client certificate file
clientKeyFile	Client key file
clientKeyPassword	Client key password

Migration steps

DBUpgrade should be performed to widen the table columns. If you are sure that no long parameters are needed, you can leave the columns as they are. But then there will be an SQL error if you enter too long values.

Alternatively, you can widen the columns manually:

In JAVISSPS_CONTROLLERS: BUSPARAM1, BUSPARAM3, BUSPARAM4 and BUSPARAM5 to 4000 characters.

IN PARAMETER_CFG: DATA to 1024 characters.

Database changes

In JAVISSPS_CONTROLLERS: BUSPARAM1, BUSPARAM3, BUSPARAM4 and BUSPARAM5 to 4000 characters.

IN PARAMETER_CFG: DATA to 1024 characters

API changes

MQTT

4.3 Jarvis Version Number Logged

Affected module	Affected area	Status
Connectivity	DCU/DACQ	New

ffDNC

Java class: "VersionInfoLogger" will be used for this purpose.

4.4 FANUC Supports Windows 64 Bit

Affected module	Affected area	Status
Connectivity	FANUC plugin	FANUC plugin

New files:

- FanucWrapper64.dll
- fwlib64.dll
- fwlibe64.dll

4.5 Access to Error Code ID in a Global DACQ Variable

Affected module	Affected area	Status
Workbench	Error Code Mapping	New

No technical changes.

5 Productivity

5.1 Operation Correction Affects ERP System

Affected module	Affected area	Status
Workbench	Corrections – Operation End/Interrupted	Changed

No technical changes.

5.2 Additional Personnel reports

Affected module	Affected area	Status
Office	Reporting	New

No technical changes.

5.3 New Reports & Operation State Detail Levels

Affected module	Affected area	Status
Office	Reporting	New/Changed

Database changes

Table “REP04_FILTERDEFINITION” was extended by the Boolean column “STATUS_DETAIL_LEVEL_SELECTABLE”.

The view “V_MD_MALFUNCTION_REASON_VEC” was extended by following columns:

Name	Type	Description
MFR1_ID	BIGINT	ID of malfunction reason on level 1
MFR2_ID	BIGINT	ID of malfunction reason on level 2
MFR3_ID	BIGINT	ID of malfunction reason on level 3
MFR4_ID	BIGINT	ID of malfunction reason on level 4
MFR5_ID	BIGINT	ID of malfunction reason on level 5
MFR6_ID	BIGINT	ID of malfunction reason on level 6
MFR7_ID	BIGINT	ID of malfunction reason on level 7
MFR2_COLOR	VARCHAR	color of malfunction reason on level 2
MFR3_COLOR	VARCHAR	color of malfunction reason on level 3
MFR4_COLOR	VARCHAR	color of malfunction reason on level 4
MFR5_COLOR	VARCHAR	color of malfunction reason on level 5
MFR6_COLOR	VARCHAR	color of malfunction reason on level 6
MFR7_COLOR	VARCHAR	color of malfunction reason on level 7

The view “V_MD_MALFUNCTION_REASON_VEC_1” was extended by the BIGINT column “MFR1_ID”.

5.4 User Fields for Personnel Master Data

Affected module	Affected area	Status
Workbench	Master Data – Personnel	New

No technical changes.

5.5 New Personnel and Cost Center Filters

Affected module	Affected area	Status
Workbench	Master Data/Corrections	New

No technical changes.

5.6 Coupling Filter for Operation-Related Times

Affected module	Affected area	Status
Workbench	Correction – Operation-Related Times	Changed

No technical changes.

5.7 OEE Time Base Config for Personnel Reports

Affected module	Affected area	Status
Office	Reporting	Changed

No technical changes.

6 SFT Configuration

6.1 Barcode Scan of Split Operations in Activities with Multi-Search-Result-Dialog

Affected module	Affected area	Status
Workbench	Shopfloor Terminal	New

No technical changes.

6.2 Language Display Instead of Countries

Affected module	Affected area	Status
Workbench/SFT	Shopfloor Terminal	Changed

No technical changes.

6.3 Preset Expression for Quantity Booking

Affected module	Affected area	Status
Workbench	Shopfloor Terminal	New

No technical changes.

7 Planning

7.1 Operation Blocks

Affected module	Affected area	Status
Workbench	Digital Planning Board	New

Use the default database migration script to update necessary changes. For DB changes see FF-27492. For infrastructure changes see FF-27493.

To utilize Planning Elements, the system also needs to be supplied with proper data via ERP (ERP download). The ERP download must be equipped with a suitable XSLT sheet to process incoming ERP supplies. This is always customer-specific, analogous as already the case with operation blocks. See FF-27494 for details and an example XSLT.

Migration steps

Use regular migration scripts.

Database changes

See FF-27492.

API changes

New operation attributes regarding BlockGrp/Block are included in the API, for details see FF-27520.

7.2 Colored Cells for State/Status

Affected module	Affected area	Status
Workbench	Digital Planning Board	Changed

Migration steps

Use regular migration scripts. JAVA migration is done.

- i** If in existing user specification config one of the now removed attributes "PHASE_COLOR", "DERIVEDSTATUSCOLOR" & "STATUSCOLOR" was present, it still appears in the table (without literal). Until the user changes/saves the config again, then it gets removed.

8 Process

8.1 Auto-Assignment of Containers in Assembly

Affected module	Affected area	Status
Shopfloor Terminal	Track & Trace	New

TCs need to activate the feature in the SFT assembly dialogue with a new flag named “Automatic assignment of containers”

Migration steps

Use the normal SFT template migration.

8.2 Switch Production Order for Assembly

Affected module	Affected area	Status
Shopfloor Terminal	Track & Trace	Changed

TCs need to activate the feature in the SFT assembly dialogue with a new flag named “Order change possible”.

Migration steps

Use the SFT template migration.

9 Appendix

Abbreviation/Term	Meaning
AJP	Apache JServ Protocol
DACQ	Data Acquisition
DCU	Data Collection Unit
DNC	Distributed Numerical Control
ERP	Enterprise Resource Planning
FFAuth	FORCAM FORCE™ Authentication (single sign-on solution from FORCAM FORCE™)
HTTPS	Hyper Text Transfer Protocol Secure
IE	Internet Explorer
LOCIDs	Location identifier
MQTT	Message Queuing Telemetry Transport
SFT	Shopfloor Terminal
SQL	Standardized query language for databases
SSL	Secure Sockets Layer
SSO	Single Sign-on
VPI	Virtual Process Image
VPIE	Virtual Process Image Editor
XSLT	XSL transformation (programming language for transforming XML documents)