Functional Release Notes

Version 5.12.8

Release Information

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👤	Author: Raj Chaulagain

Content

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 functions that have been added or changed during the **5.12.8** release. It serves as an overview of the most important features to use FORCAM FORCE IIOT in the best possible way.

Detailed descriptions of the individual functions can be found in the respective product documentation.
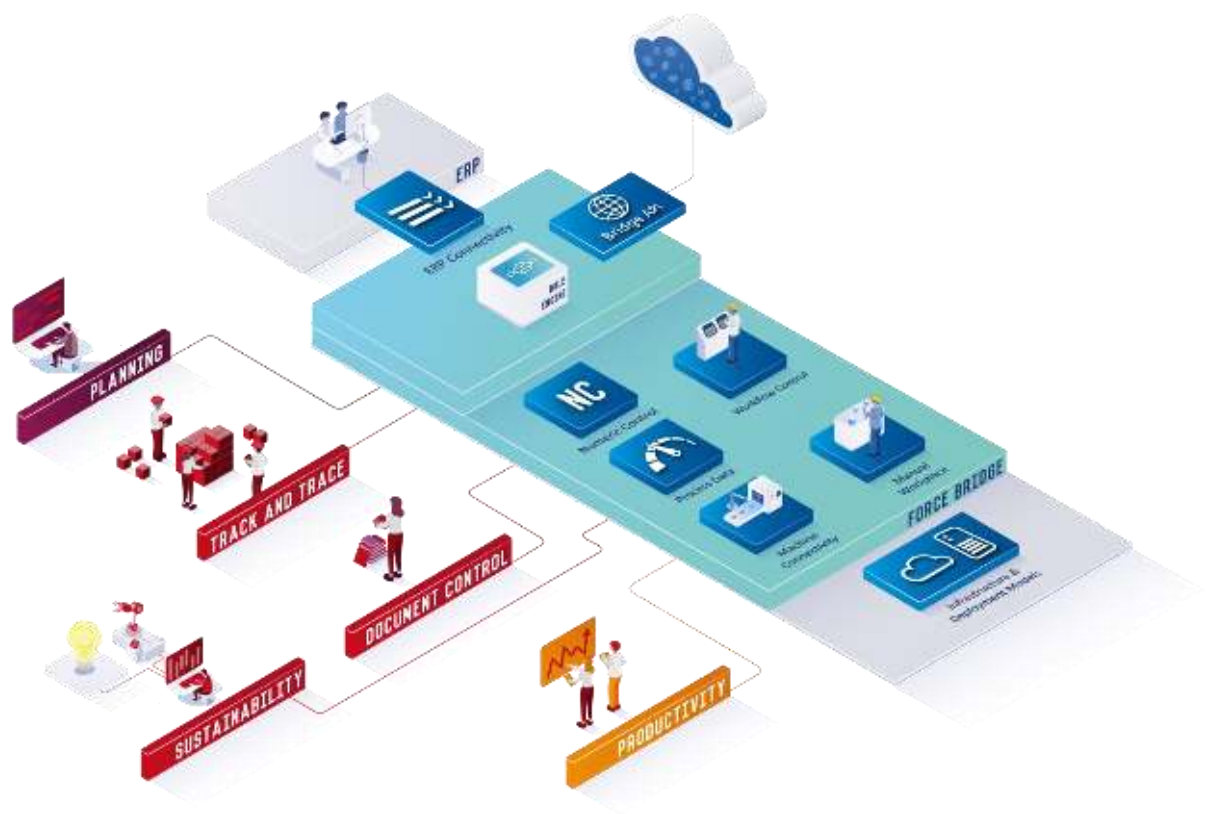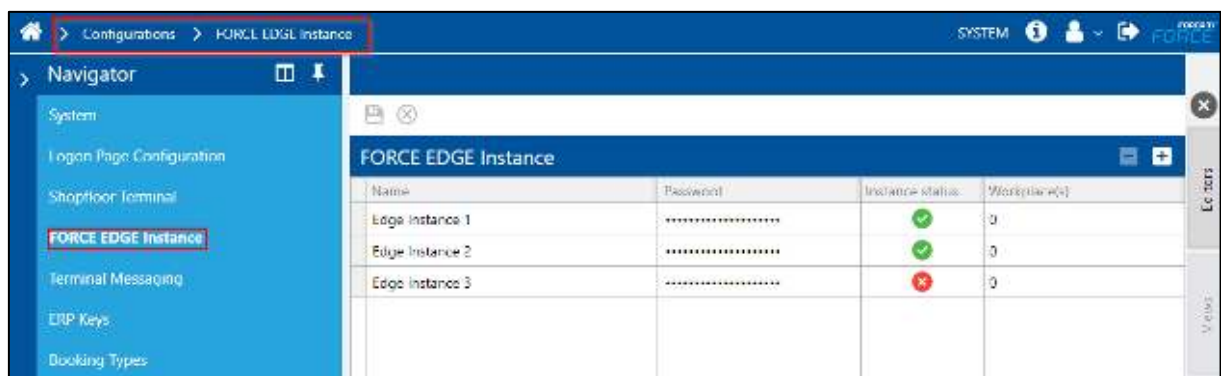
2 FORCAM FORCE IIOT Common

2.1 Full Connectivity between FORCAM FORCE EDGE and IIoT

Affected module	Affected area	Status
SFT Configurator	FORCAM FORCE EDGE Instance	New

FFWorkbench

Path: Configurations > FORCE EDGE Instance

New configuration has been added for configuring FORCE EDGE instances which is under Configurations > FORCE EDGE Instance.

User can add new EDGE instance by pressing **+** button. After adding/editing/deleting new EDGE instance user must press the save button in order to save all the changes.

User can delete new EDGE instance by pressing - button.

The EDGE Instance Editor also shows in how many workplaces this instance is referenced.

If an EDGE instance is marked as deleted that is referenced by some workplaces, then a warning is displayed. The deletion can now be proceeded or canceled.

Editing can be done directly by selecting the row and can be changed according to the user. If the EDGE instance is reachable/available, then **Open EDGE Instance** context menu action is available and user can open the EDGE instance in different tab by clicking **Open EDGE Instance** context menu action.
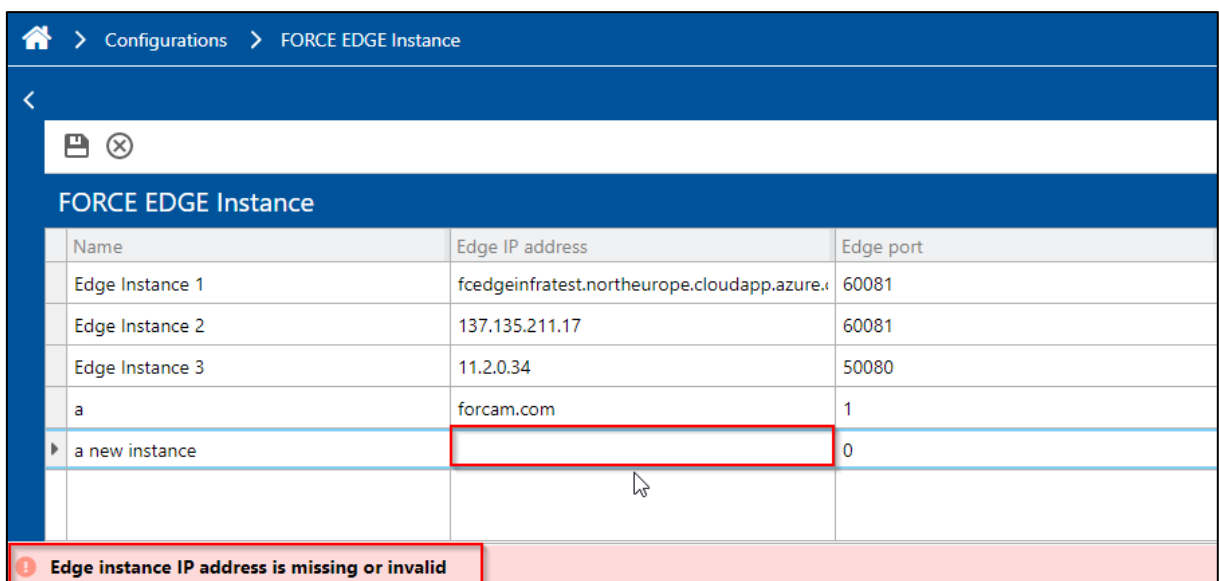

There are some corresponding validations also included. For instance, if IP address and port number is missing or invalid, EDGE instance name is missing, etc. Some of them are shown below:

Only Instances with an established connection can be saved. If the status changes later (e.g. EDGE instance maintenance) the user can see it in the **Instance Status** column.

Path: Master Data > Workplace Configuration

A new option to assign EDGE machines has been added in Master Data > Workplace Configuration. The column **Machine Name** has a new option **Assign Edge Machine**.

The dialog for selecting an EDGE machine is a tree dialog where only single select is possible.
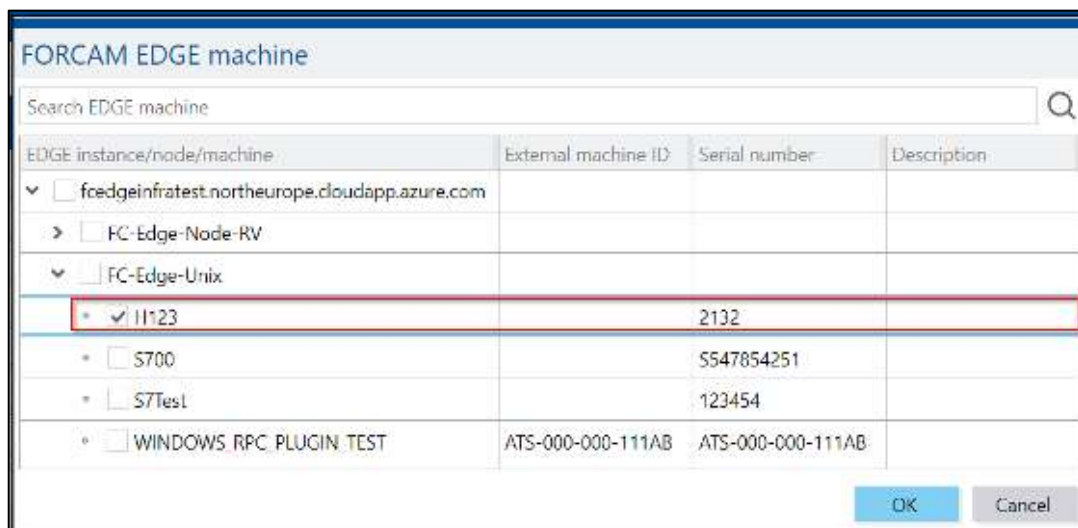
If an EDGE Machine is selected that is unknown to our IIoT system, then a name and description is generated. The name is generated in the pattern **Edge Node -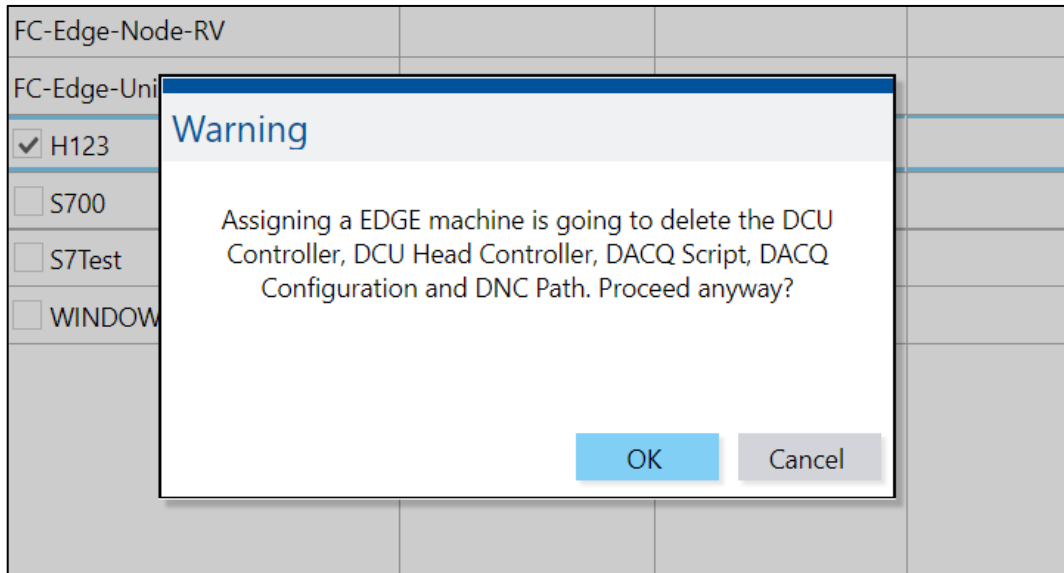 Machine Name** (e.g. FC-Edge-Unix - H123) and the description is a standard description (**EDGE Machine**) that can be changed afterwards if needed. If an EDGE Machine is assigned, some configuration gets deleted. If any of those configurations has values in it, then a warning message is displayed to get a confirmation that some configurations are removed from the workplace.

The same **Assign Edge Machine** option with the same behavior is available within the **Create Workplace**-UI while adding a new workplace.

The configuration for **DCU Controller**, **DCU Head Controller**, **DACQ Script**, **DACQ Configuration** and **DNC Path** is also disabled afterwards when an EDGE Machine is assigned. In the **Workplace Configuration** the Context menu to do that is not available and in the **Create Workplace** UI the tabs with these configurations are not visible.

To Filter the EDGE Machines, a new search filter option has been added. The filter option is not activated in the default configuration. To make the filter available, it needs to be configured in **search filter configuration**.
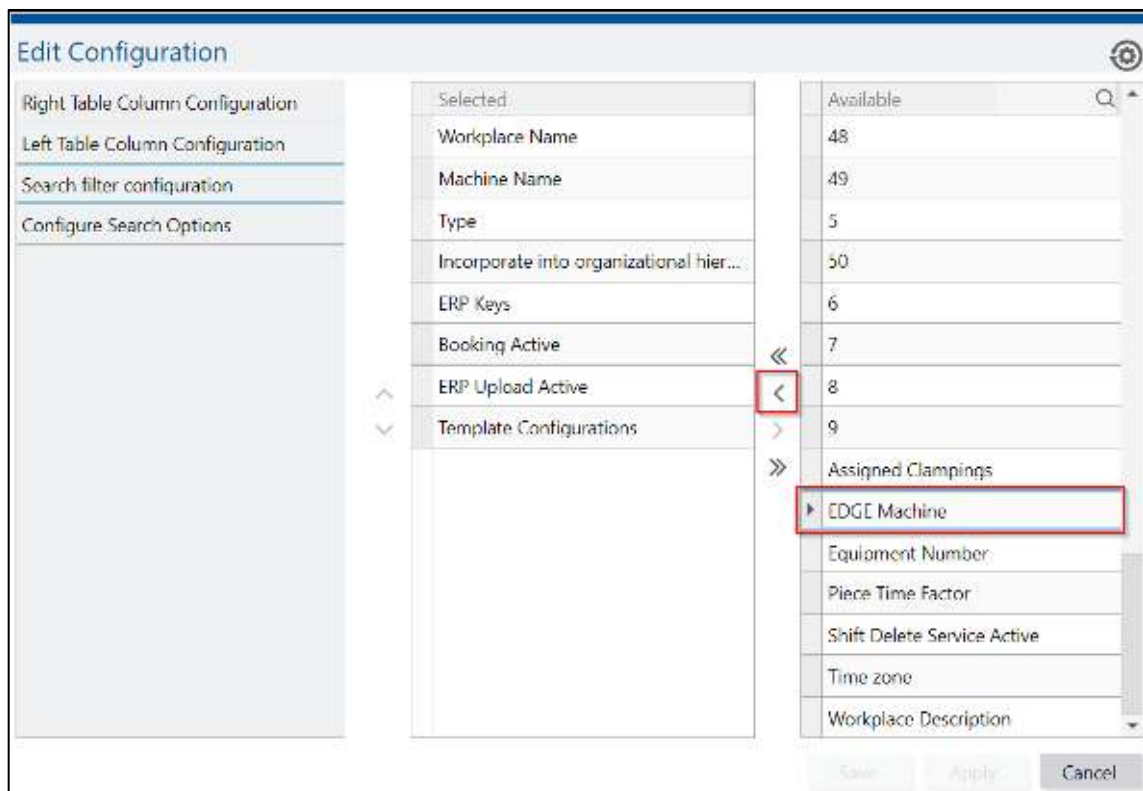
While opening the filter, the same tree dialog box is displayed as the one which was shown while assigning an EDGE machine. Multi-selection is possible to select edge machines/nodes/instances for filtering.

The validity of an assigned Edge machine to workplace can be checked via button **Validate Edge machines**.
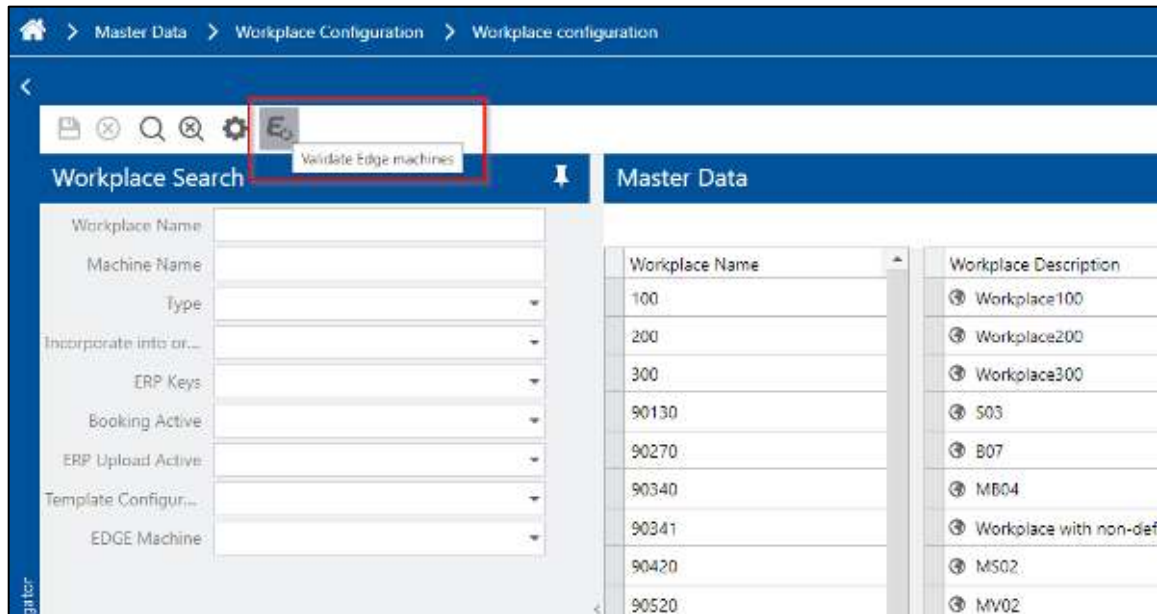
If all the assigned machines are validated successfully, a user acknowledgement is displayed in the message bar. Otherwise, a popup containing the workplace names and assigned Edge machine names (which are not validated successfully) are displayed.
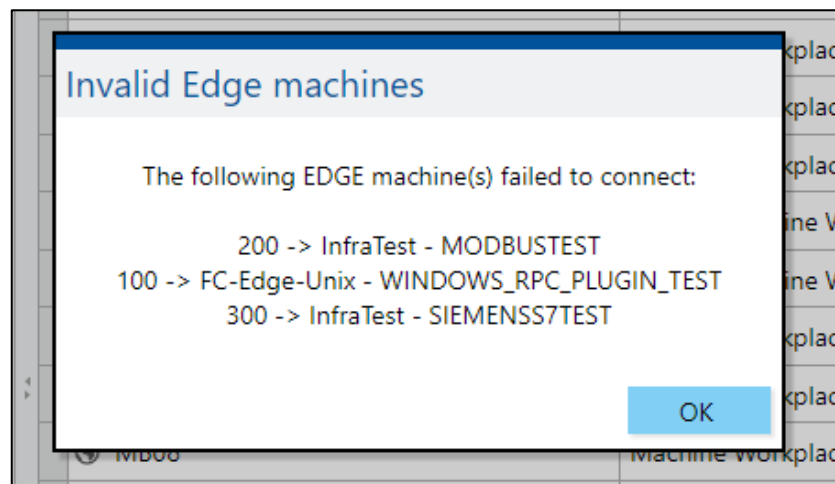
FFWebservices

Command API

Special BridgeAPI commands have been implemented to simplify the integration with the EDGE. The commands are only meant to be used internally and are therefore not officially documented.
It is mandatory to configure FORCE in a way that the commands can be interpreted unambiguously.

The following commands can be sent to the command API.

Machine Count Command
```
{
  "machineNumber": "R_M_04",
  "count": 2,
  "counterNumber": 0,
  "type": "MACHINE_COUNT_BY_MACHINE_NUMBER"
}
```

Machine Quantity command
```
{
  "machineNumber": "R_M_04",
  "quantity": 2,
  "qualityDetailCode": "Y1", // optional
  "type": "MACHINE_QUANTITY_BY_MACHINE_NUMBER"
}
```
   ⓘ   If **qualityDetailCode** cannot be resolved, the fallback is always Default: YIELD.

Machine State Command
```
{
  "machineNumber": "R_M_04",
  "machineStateId": "DOWNTIME",
  "machineStateDetailCustomerCodes": ["200"], // optional
  "type": "MACHINE_STATE_BY_MACHINE_NUMBER"
}
```
   ⓘ   If **machineStateDetailCustomerCodes** cannot be resolved, the default fallback is in case of PRODUCTION: PRODUCTION, in case of DOWNTIME: UNDEFINED STOPPAGE.

Machine State Revision Insert Command
```
{
  "insertionTimestamp": "2017-05-03T15:42:49.622+0200",
  "machineStateCommand": {
    "machineNumber": "R_M_04",
    "machineStateId": "DOWNTIME",
      "machineStateDetailCustomerCodes": ["200"], // optional
  },
  "type": "MACHINE_STATE_REVISION_INSERT_BY_MACHINE_NUMBER"
}
```

   ⓘ   If the **machineStateDetailCustomerCodes** cannot be resolved, the default fallback is in case of PRODUCTION: PRODUCTION, in case of DOWNTIME: UNDEFINED STOPPAGE.
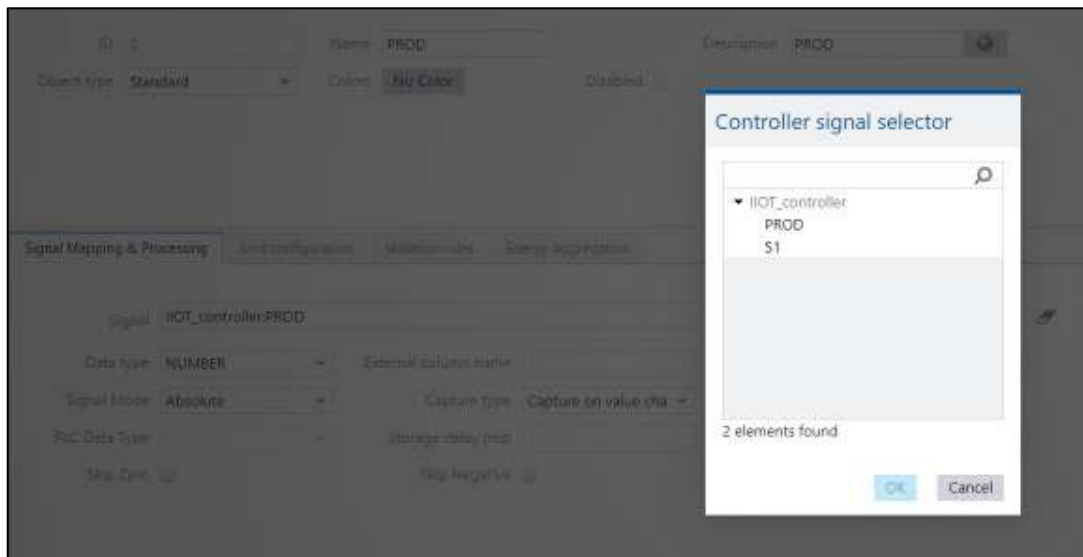
Machine Stroke Command
```
{
  "machineNumber": "R_M_04",
  "strokes": 2,
  "type": "MACHINE_STROKE_BY_MACHINE_NUMBER"
}
```

FFTracing

Virtual Process Image (VPI) Configuration (New Office)
User can configure the Force Edge Node controller/signals in VPI to capture the trace or process data. If the workplace has the Edge Machine, then user can configure it.

Trace Acquisition
Based on the VPI configuration trace acquisition will make the connection to Force Edge Node Active MQ and read the signal data for processing. Depends upon the configuration trace capture the data either as Process Data or Trace Data.

Add following in "activemq.server.deserializationWhiteList" of the common properties:

```
activemq.server.deserializationWhiteList=com.forcam
```

3 Platform and Connectivity

3.1 Server-side background activity via BridgeAPI

Affected module	Affected area	Status
BridgeAPI	FORCAM FORCE Simulator	New

The BridgeAPI model is extended with new properties to match the capabilities of the MDC simulator.

API changes

"activityIdentifier" is now a mandatory field

"relationIdentifier" is mandatory, if the relationType is TERMINAL or WORKPLACE

"relationType" can be WORKPLACE, TERMINAL or the new UNRELATED type, which can be used to trigger a background activity

"prioritize" was introduced to configure if the internal processing of this activity event should be prioritized

"eventScope" can be EXTERNAL (default), the new scopes are: DACQ, TRACE, SERVER_SIDE_ACT or STATUSBAR_MESSAGE

"modificationType" UPDATE (default), new types are: NEW, DELETE

4   Appendix

Abbreviation/Term	Meaning
API	Application Programming Interface
DACQ	Data Acquisition
DCU	Data Collection Unit
DNC	Distributed Numeric Control
MDC	Machine Data Collection