



# Technical Release Notes

Version 5.12.21

## *Release Information*



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## Overview

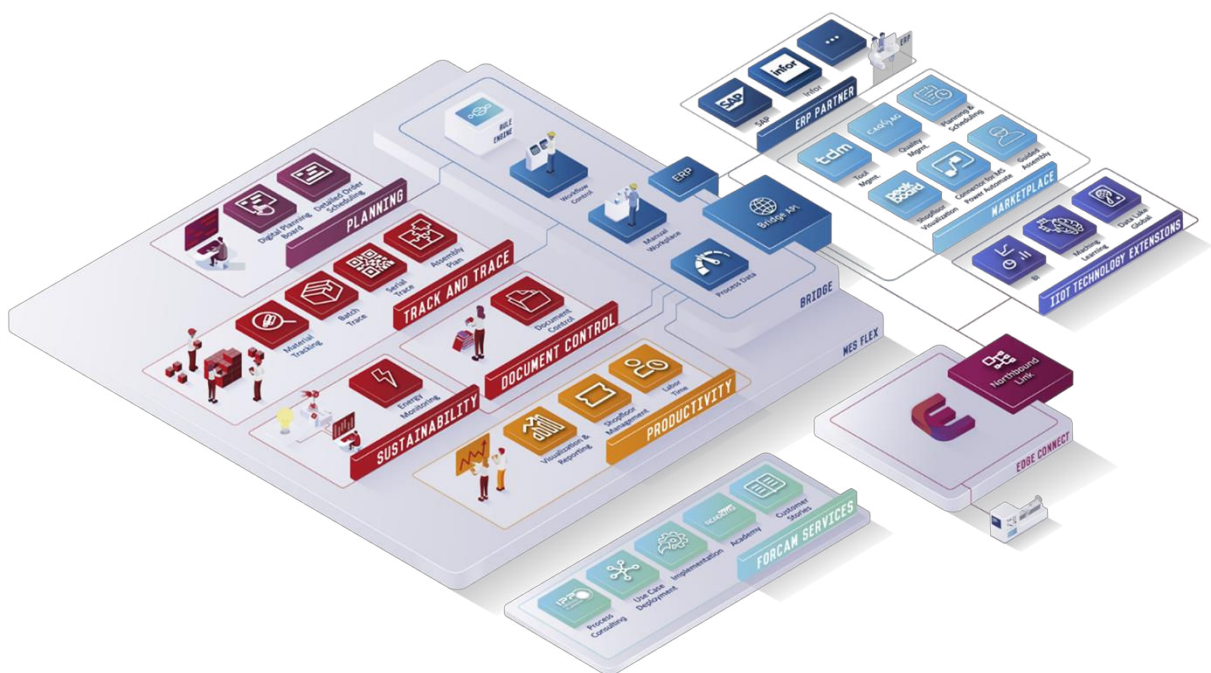
FORCAM provides companies with all the information they need to control and optimize their production. The modular IIoT solution FORCAM FORCE MES FLEX is as flexible as the needs of customers. With a variety of production apps, FORCAM helps companies to make their processes more transparent and improve 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 MES FLEX 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 5.12.21 release. It provides an overview about configurations and parameters that are new or changed for FORCAM FORCE MES FLEX. 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.



## Common

### Support import of PFX files for certificate

Affected module	Affected area	Status
FFSetup	Import of HTTPs Certificates	Changed

FFSetup has been changed to allow the import of .pfx files only.

The .jks file import is not supported anymore, the pfx file internally be converted to the required .jks java applications and .crt format for Nginx.

## Workflow Control

Workplace list in SFT is collapsed by default

Affected module	Affected area	Status
Workbench/SFT	Configuration	Changed

None

Expandable & collapsible operation detail view in SFT

Affected module	Affected area	Status
SFT	Operation Detail View	New

None

## Planning

FFScheduling extension: Fixing started operations to a workplace

Affected module	Affected area	Status
FFScheduling	Master Data	New

None

Improved access of availability in Digital Planning Board

Affected module	Affected area	Status
Workbench	Digital Planning Board	Changed

To implement the updates and changes in the Digital Planning Board, a Java migration process is necessary.

## Platform & Connectivity

### NC-File Transfer between machines

Affected module	Affected area	Status
Workbench	Production Data Management	New

None

### Request program handling

Affected module	Affected area	Status
PDM/DNC	PDM/DNC	New

Two JAVA migrations are necessary. In addition, DNC app has to be configured and running.

### Mitsubishi MDC and DNC plugin

Affected module	Affected area	Status
FORCE MES FLEX	FORCE MES FLEX	New

#### Forcam Mitsubishi Service installation

Forcam Mitsubishi Service software has to be installed to use Mitsubishi plugin. To install it, follow these steps:

- Open command prompt as administrator.
- Go to javis\MitsubishiService (exists in the new Jarvis installation).
- Execute: MitsubishiService.exe install.
- Start the service named "Forcam Mitsubishi service".

#### Forcam Mitsubishi Service uninstallation

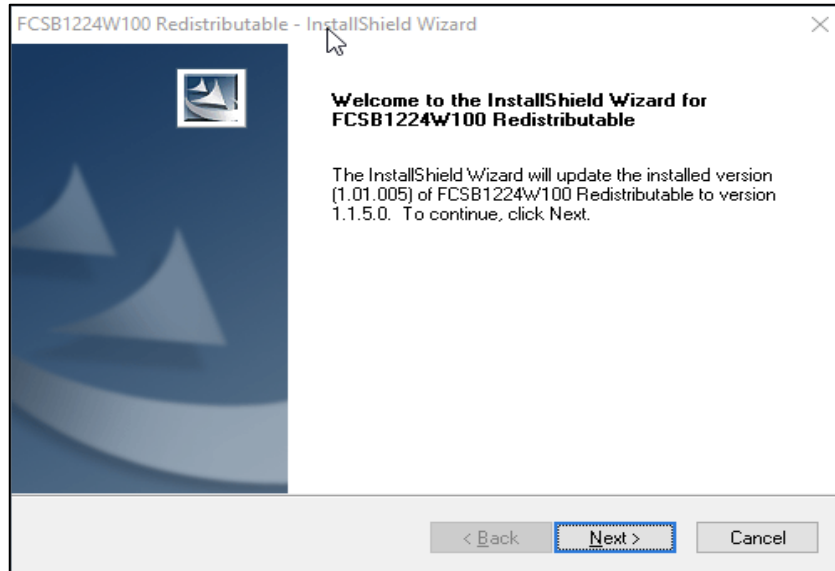
To uninstall Forcam Mitsubishi Service software, follow these steps:

- Open a command prompt as administrator.
- Go to javis\MitsubishiService (exists in the new Jarvis installation).
- Execute: MitsubishiService.exe uninstall.
- The service named "Forcam Mitsubishi service" should have been now removed.

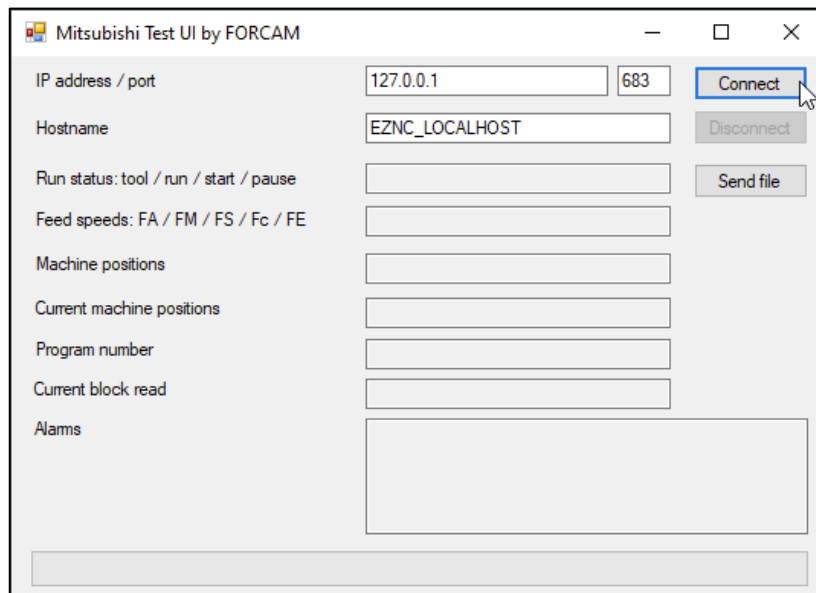
### Installation and usage of Mitsubishi Test UI by FORCAM

Mitsubishi Test UI by FORCAM can be used for the purpose of testing during initial connection attempts. To install the application, follow the steps:

- Install libraries for Windows: run redistributable-setup.exe.



- Run MitsubishiTestUI.exe.
- Enter the IP address of your Mitsubishi controller, then click **Connect**.  
While connecting, if problem arises, check your firewall settings regarding port 683.





- Mitsubishi Test UI by FORCAM in action:



### Short Term Process Data in SQL DB

Affected module	Affected area	Status
<b>FFWebservices/SFT/FFWorkbench/FFSetup</b>	FFWebservices/SFT/FFWorkbench/FFSetup	New/Changed

The process data is stored in the following tables:

- [FR\_DS\_PROCESS\_CS]  
Stores only the most recent process value.
- [FR\_DS\_PROCESS\_LOG\_DOMAIN]  
Stores the historic process values of the WORKPLACE or OPERATION domain.
- [FR\_DS\_PROCESS\_LOG\_GENERIC]  
Stores the historic process values of the GENERIC domain.

For performance reasons the domain is stored as ordinal. For example:

- DOMAIN\_TYPE = 0 for GENERIC
- DOMAIN\_TYPE = 1 for WORKPLACE
- DOMAIN\_TYPE = 2 for OPERATION

### Short term process data configuration

The configuration can be either HTTP or HTTPS, please find below the configuration use cases.

#### Use case 1: Connection between Worker-Client and NGINX with HTTP

- Change the NGINX configuration in Common Properties
 

```
#nginx
nginx.private.host=localhost
nginx.private.path=nginx
nginx.private.port=80
nginx.private.protocol=http
nginx.public.host=FCSTESTFACTORY28
nginx.public.path=nginx
nginx.public.port=80
```

```
nginx.public.protocol=http
nginx.server.proxy.url=https://127.0.0.1:24443
```

- Change the CommunicationAPI in worker properties

```
#communicationApi
communicationApi.host=FCTESTFACTORY28
communicationApi.path=ffwebservices
communicationApi.port=80
communicationApi.protocol=http
```

- To update the NGINX.conf file with HTTP configuration, navigate to the following directory path, for example: "F:\ForcamForce\app\nginx-server\conf". The NGINX.conf file can be found within this directory for modification.

```
# HTTP server
server {
    listen      80;
    server_name localhost;
    return 301 https://$host$request_uri;
    access_log  ./logs/host.access.log  main;

    proxy_cache ffCache;

    location ~ ^/ffwebservices/(.*) {
        allow all;
        proxy_pass https://127.0.0.1:24443$request_uri;

        proxy_set_header Host $host;
        proxy_set_header X-Real-IP $remote_addr;
        proxy_set_header X-Forwarded-Proto $scheme;

        # Calculating the cache key.
        proxy_cache_key
"$scheme$request_method$host$request_uri$http_authorization$http_accept_language$request_body";

        # Cache the responses to requests with methods
        proxy_cache_methods GET HEAD POST;
        proxy_cache_min_uses 1;
        # Bypassing the cache in case of header 'no-cache' http://forcam.com/?nocache=true
        proxy_cache_bypass $cookie_nocache $arg_nocache;

        #Passing the Cache status to client.
        add_header X-Cache-Status $upstream_cache_status;
        # Only one request is allowed to origin server in case a Cache Miss for multiple
requests
        proxy_cache_lock on;
        # Deliver stale content from its cache when it can't get fresh content from the origin
servers
        proxy_cache_use_stale updating;
        # Deliver stale content when clients request an item that is expired or is in the
process
of being updated from the origin server
        proxy_cache_background_update on;
    }
}
```

## Use case 2: Connection between Worker-Client and NGINX with HTTPS

- Change the NGINX configuration in Common Properties

```
#nginx
nginx.private.host=localhost
nginx.private.path=nginx
nginx.private.port=80
nginx.private.protocol=http
nginx.public.host=FCTESTFACTORY28
nginx.public.path=nginx
nginx.public.port=443
nginx.public.protocol=https
nginx.server.proxy.url=https://127.0.0.1:24443
```

- change the CommunicationAPI in worker properties

```
#communicationApi
communicationApi.host=FCTESTFACTORY28
communicationApi.path=ffwebservices
communicationApi.port=443
communicationApi.protocol=https
```

- To update the NGINX.conf file with HTTP configuration, navigate to the following directory path, for example: "F:\ForcamForce\app\nginx-server\conf". The NGINX.conf file can be found within this directory for modification.

```
# HTTPS server
server {
    listen      443 ssl;
    server_name localhost;

    ssl_certificate      ../../../../config/certificate.crt;
    ssl_certificate_key  ../../../../config/privateKey.pem;

    #Disable SSL over TLS
    ssl_protocols TLSv1 TLSv1.1 TLSv1.2;

    #SSL ciphers
    ssl_prefer_server_ciphers on;
    ssl_ciphers HIGH:!aNULL:!MD5;

    #SSL Sessions cache
    ssl_session_cache    shared:SSL:10m;
    ssl_session_timeout  1h;
    ssl_session_tickets on;

    access_log  ./logs/host.access.log  main;

    proxy_cache ffCache;

    location ~ ^/ffwebservices/(.*) {
        allow all;
        proxy_pass https://127.0.0.1:24443$request_uri;

        proxy_set_header Host $host;
        proxy_set_header X-Real-IP $remote_addr;
        proxy_set_header X-Forwarded-Proto $scheme;

        # Calculating the cache key.
        proxy_cache_key
"$scheme$request_method$host$request_uri$http_authorization$http_accept_language$request_body";

        # Cache the responses to requests with methods
        proxy_cache_methods GET HEAD POST;
        proxy_cache_min_uses 1;
        # Bypassing the cache in case of header 'no-cache' http://forcam.com/?nocache=true
        proxy_cache_bypass $cookie_nocache $arg_nocache;

        #Passing the Cache status to client.
        add_header X-Cache-Status $upstream_cache_status;
        # Only one request is allowed to origin server in case a Cache Miss for multiple
requests
        proxy_cache_lock on;
        # Deliver stale content from its cache when it can't get fresh content from the origin
servers
        proxy_cache_use_stale updating;
        # Deliver stale content when clients request an item that is expired or is in the
process of being updated from the origin server
        proxy_cache_background_update on;
    }
}
```

- HTTPS certificate configuration.

**Additional Care**

To enable the utilization of this functionality within the Worker-client, the following steps are required:

- It is necessary to install and configure the NGINX.
- To use the caching mechanism effectively, it is recommended to ensure that the report URL remains static. This can be achieved by creating a data source that does not include a live timestamp within the filter.

**Inclusion of split information in FORCE MES FLEX messages**

Affected module	Affected area	Status
ERP Connectivity / BridgeAPI	ERP Connectivity / BridgeAPI	New

None

## Document Control

### Extension of Delta Export (Filtering)

Affected module	Affected area	Status
PDM/DNC	Delta-Export	New

None

## Appendix

Abbreviation/Term	Meaning
API	Application Programming Interface
DB	database
DNC	Distributed Numerical Control
DPB	Digital Planning Board
ERP	Enterprise Resource Planning
HTTP	Hypertext Transfer Protocol
MDC	Machine Data Collection
MES	Manufacturing Execution System
NC	Numeric Control
NCP	NC Program
PDM	Production Data Management
SFT	Shopfloor Terminal
SQL	Structured Query Language
UI	User Interface
UUID	Universally Unique Identifier