FORCE EDGE CONNECT

Machine Repository

Version 230721

Product Description

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Product Description

FORCE EDGE CONNECT (hereafter only referred to as EDGE CONNECT) Machine Repository offers the user the possibility to define templates for the connection of any asset. These can either be created via the Machine Repository (MR) configuration wizard or generated from already connected assets from EDGE CONNECT.

ⓘ EDGE CONNECT Machine Repository is an optional extension to FORCE EDGE CONNECT. EDGE CONNECT is therefore a prerequisite to use the Machine Repository.

In this way, templates offer an optimal solution, especially when expanding a machine park with new, similar assets. The template-supported connection of assets considerably reduces the effort required for digitization. The product enables every company to easily create, manage and use templates for the standardized connection of the same asset types.

The use of templates for connecting the same assets ensures that identical information is derived on the basis of asset signals. This creates direct comparability of assets and makes it possible to transfer asset-related measures.

In the process of being able to track individual changes to a template, a new template version is created in MR each time a change is made. The history of a template can be viewed directly in MR. Individual versions can be restored manually.

The MR's asset list provides an overview of all assets connected in the EDGE instances.
The collected knowledge on the MR can be distributed across plants, so that all plants can have the same templates at their disposal. You can easily bring your works up to the same level of digitization.

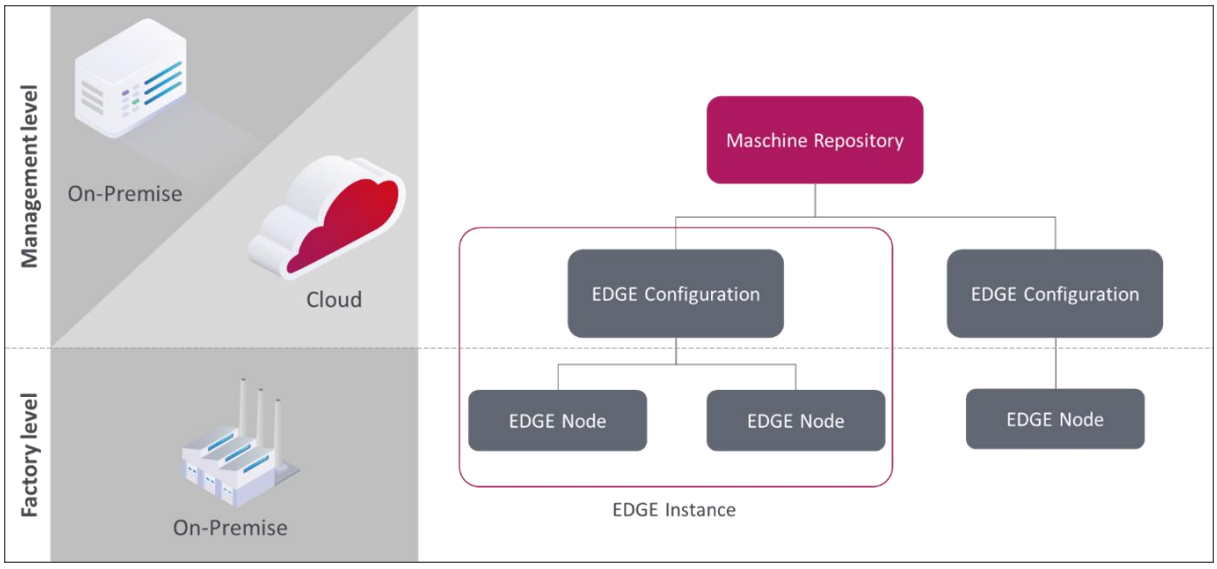

Figure 1: Architectural Structure of EDGE CONNECT Machine Repository

EDGE CONNECT Machine Repository is an optional extension to EDGE CONNECT. The MR is a stand-alone application that communicates with EDGE CONNECT via clearly defined interfaces. Therefore, the MR can be installed and used both in the customer's IT infrastructure and in a cloud environment.

For example, several EDGE instances can be supplied by the MR. FORCAM thus makes a significant contribution to digitalization in industry and focuses on the cost-efficient connection of assets across plants.

System components

This chapter describes the following components of the FORCAM EDGE Machine Repository in more detail:

- Templates
- Asset list

Definition of templates

The template is a connection pattern for digitizing a specific type of asset. It does not contain any asset-specific information such as the IP address or serial number of an asset.

The template may contain the following asset type-specific connectivity information:

- Template name and description
- Asset type and classification
- Manufacturer and model number
- Description of controller type (PLC/PLC) and bus type
- Signal definition
- Script for signal interpretation
- DNC configuration

By providing the general connectivity information of an asset type, the effort required to digitize an asset of the same type is significantly reduced. When using a template in EDGE Configuration, the connection information is automatically applied in the Asset Configuration Wizard.

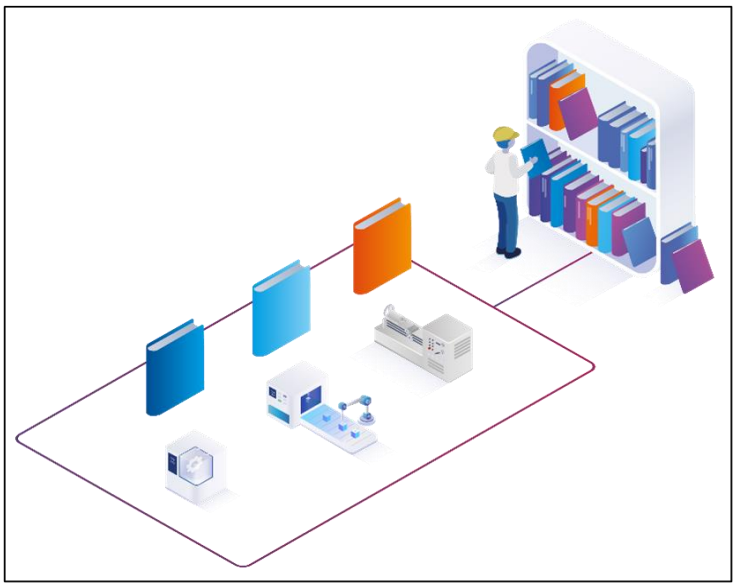

Figure 2: Template management in the Machine Repository

Asset list

An asset is a collective term for elements that can be linked to the EDGE CONNECT (e. g. machines, sensors, databases, etc.). The asset list shows the assets of all linked EDGE instances that are connected to the EDGE CONNECT Machine Repository. In the Machine Repository, templates can be derived from the assets attached in the EDGE instances.

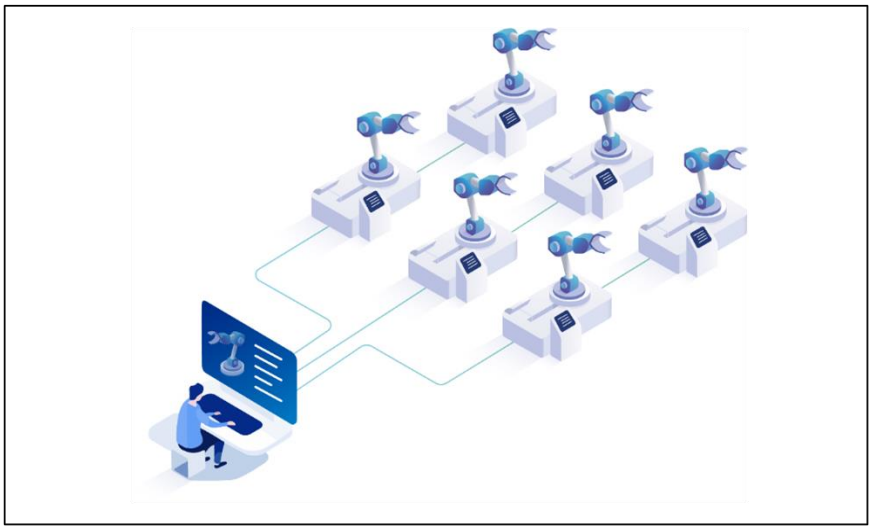

Figure 3: Overview of the asset park

Configuration

EDGE instance

In the Machine Repository, EDGE instances can be added in a few steps. An EDGE instance is a union of an EDGE configuration and the EDGE nodes linked to it. The MR can supply a large number of EDGE instances.

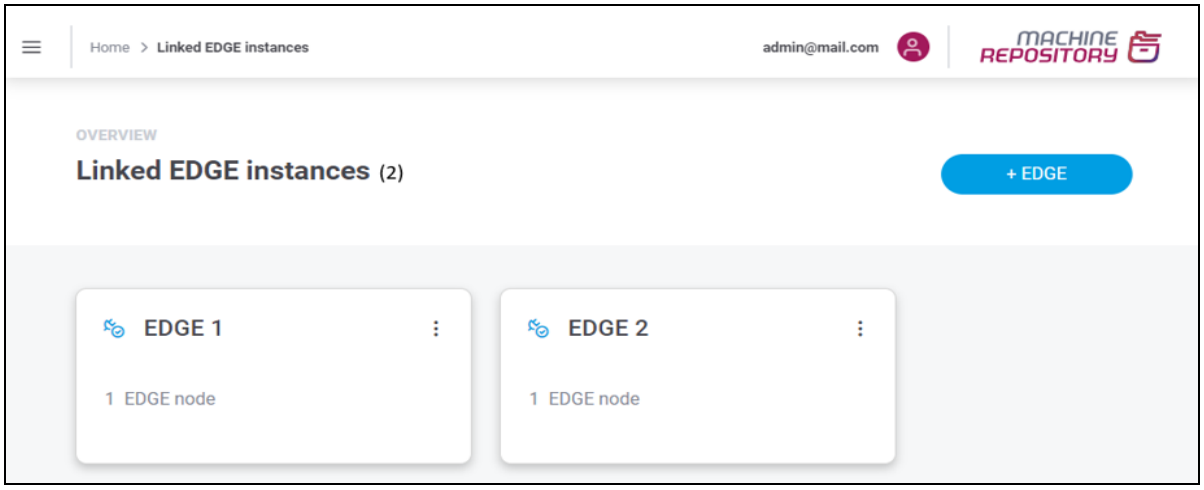

Figure 4: Overview of the linked EDGE instances

Templates

The dialogue for adding a template is done in a few steps. The steps for creating a template are supported by a guided configuration wizard. Here, basic information is specified, MDC/DNC connections are configured, machine signals are defined and the release of the template to the EDGE instances is determined (deployment). If a template is derived from an asset, template-relevant information is already taken from the asset configuration. This significantly reduces the effort required to create a template.

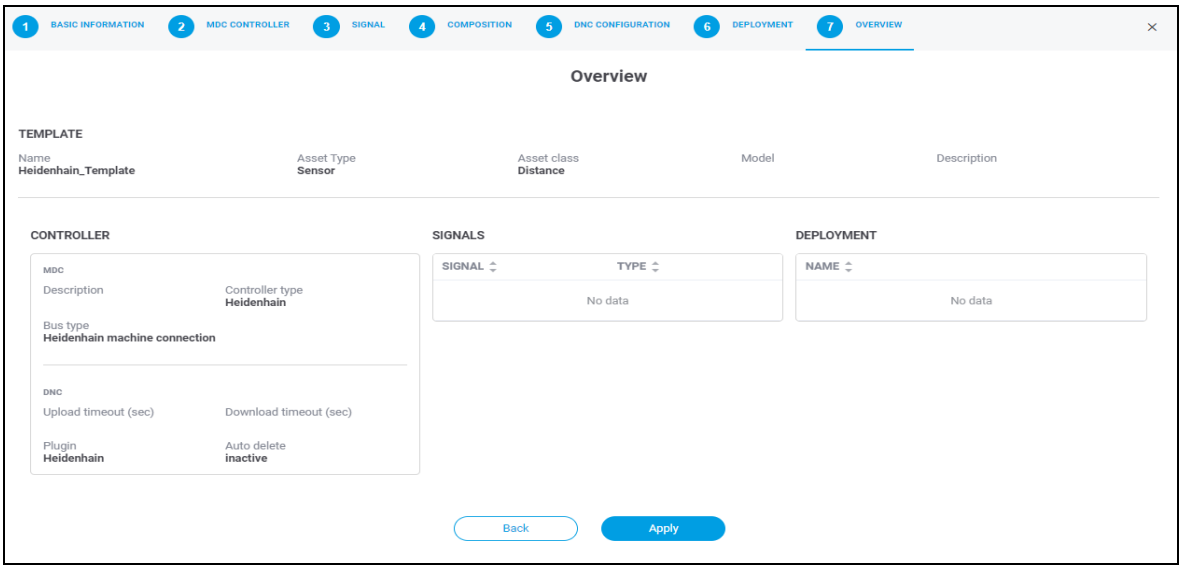

Figure 5: Dialogue for configuring a template in EDGE CONNECT Machine Repository

Scope of services

General

- Easy creation, management and use of asset templates
- Clearly structured and user-friendly interface to create and manage asset templates
- Significant reduction of the effort required to connect an asset
- Traceability when changing templates (template versioning)
- Restoration of individual versions
- Cross-plant distribution of templates
- Import and export of templates

Asset list

- Overview of the entire machine park
- Deriving templates from existing assets for use with the same machine types

Appendix

MDC Plugins

Name	Read	Write	Transmission type polling/event-based
AUDI SPS	X	X	X/
Controller for FORCAM FORCE DB tables	X		X/
CSV File Exchange	X		X/
Euromap 63	X		X/
Euromap 77 (via OPC UA)	X	X	/X
FANUC	X	X	X/
FORCAM IO Controller	X	X	/X
FORCAM I/O Controller (Hardware)	X		
MAKINO Pro 3/Pro 6	X		X/
MAZAK Mazatol Fusion M640M	X	X	/X
MAZAK Mazatol Fusion M640MTPro	X	X	/X
MAZAK Mazatol Matrix	X	X	/X
MAZAK Mazatol Smart	X	X	/X
MAZAK Mazatol Smooth	X	X	/X
MCIS RPC (SINUMERIK 810D/840D/840D)	X		X/X
Modbus	X		
MQTT	X	X*	/X
MT Connect	X		X/
Node-RED	X	X	/X
OKUMA	X		X/
OMRON CS/CJ	X	X	X/
OMRON CV	X	X	X/
OPC Classic	X	X	X/

Name	Read	Write	Transmission type polling/event-based
OPC XML	X		X/
OPC UA	X	X	/X
Rockwell / Allen Bradley	X	X	X/
RPC	X	X	/X
Schneider Electric	X		X/
Siemens LOGO	X		X/
Siemens S5	X		X/
Siemens S7 (200, 300, 400, 1200, 1500)	X	X	X/
SQL Database Exchange	X		X/
Weihenstephan	X		X/
Wiesemann & Theis (WUT)	X		X/
Windows RPC	X	X	/X

DNC-Plug-ins

Name	Read	Write
COM	X	X
Heidenhain	X	X
Mazak-DNC	X	X
RPC Plug-in	X	X
FTP Plug-in	X	X
FANUC	X	X
File Handler (File Copy)	X	X
File Handler Server	X	X
MOXA-Box	X	X
Wiesemann & Theis (WUT)		