



## M1 ServiceCenter

Item	Item-No.
M1 ServiceCenter	00029604-00
Senvion Plugins Standard RT	00035106-63
SFS-Modul Plugin RT	00036404-63

## M1 ServiceCenter

The constantly growing demand for new technologies makes the further development of customer applications for machinery automated by an M1 controller unavoidable. Productivity can also be increased through expansions with Bachmann's latest hardware products. Carrying out the necessary upgrades on one or several machines can be very expensive, amounting to a considerable share of the costs, which include training required for service personnel. Bachmann has developed the M1 ServiceCenter for designing and implementing automated service operations.

The M1 ServiceCenter focuses on ensuring the transparent and reusable design of process sequences. Besides offering functions, such as the reading and saving of software versions, the M1 ServiceCenter also makes it possible to automate software and hardware updates. Interaction with the user is only requested when absolutely necessary. In this case, the user is assisted with step-by-step instructions, wizards and information texts in order to prevent any errors.

The configurable and freely combinable process steps in the M1 ServiceCenter make it possible to combine both general as well as customized configuration steps into user-friendly applications. After a short explanation, these can even be carried out by untrained operating personnel with no detailed knowledge of the controller configuration.

### Standard technologies

The M1 ServiceCenter is a stand-alone application and can be run on any PC. The M1 ServiceCenter is supplied on a USB stick, from which the application can be run directly (portable program). Alternatively, the program can also be installed on a computer.

### Functions

The M1 ServiceCenter software provides configurable process steps for many typical applications used in practice.

These include following applications:

- Data backup and recovery
- Software and driver updates
- Firmware update/downgrade
- Hardware and software diagnostics
- Migration to new controller types and generations
- Support and help during configuration and commissioning
- Safety-PLC (SLC) program updated
- Validation of hardware and software installations
- Creation of device protocol
- Connection tests
- Read and write variables
- RT-license handling for M1
- File management

The process steps mentioned are provided in a catalog, which is being continuously expanded by Bachmann and adapted to new technologies and requirements of the M1 portfolio.

## Engineering

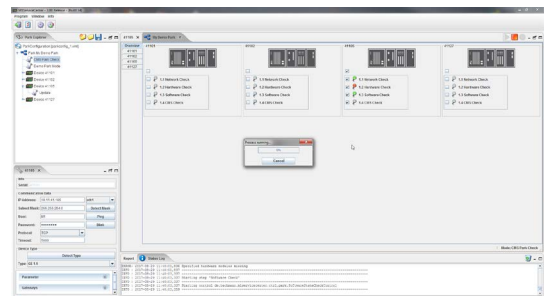
Thanks to the ease of completing the engineering tasks offline, work can begin before the hardware is available. The engineering of process operations is carried out by drag and drop in the program using a graphic configurator. For this, the process steps provided in the catalog, such as "Software Backup", are selected and added to groupable list elements. The result of the configuration is a sequence definition that is saved in the program.

## Process sequence and monitoring

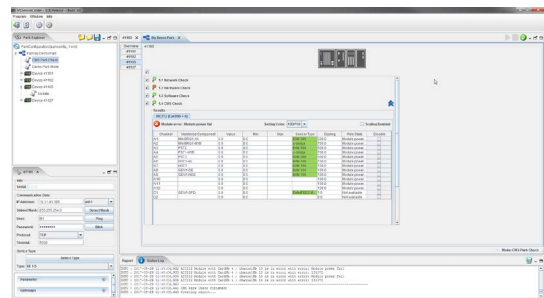
Once the sequence definition is created in the configurator perspective, the actual work of the service operation can start in the process view. The controller devices are shown in a tree structure in the actual topology. This configuration can also be configured with the program offline, so that it can be selected and loaded at a later time. Automatic plant type identification can also be configured in order to prevent the possibility of working with the wrong plant or version. If an image or backup of the file system of the M1 controller does already exist on the PC, the M1 ServiceCenter emulates this device on the PC and the created process could be completely tested offline.

The Monitor view displays the execution and progress of a process sequence, and if necessary, interrupts it or requests interaction with the user. If necessary, user input is carried out by user-friendly dialogs and step-by-step instructions.

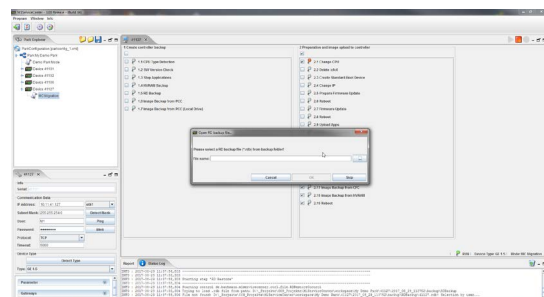
Process sequences can be used and monitored for both individual as well as multiple plants (park). Both single view and park view of the monitor window indicate the states of the individual steps in different colored LEDs.



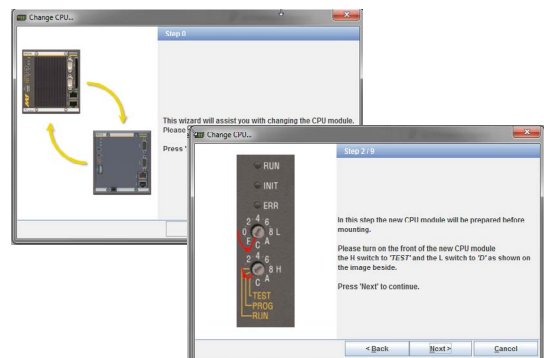
▼ Farm view: Process started



▼ Farm view: Results page for the individual plant



▼ Process sequence for individual plant with user interaction



▼ M1 ServiceCenter - step-by-step instructions

## Plugins

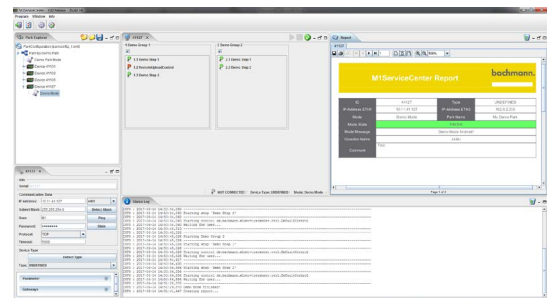
There are two additions to the M1 ServiceCenter software that can be installed as plugins. These plugins are intended for special use cases.

The plugin **SenvionPlugins Standard RT** is used for the product „M1SenAccess“. It includes all the necessary configurations and processes to install Bachmann's access solution for Senvion turbines. After the initial conversion of the access software with the plugin, the M1 ServiceCenter (incl. plugin) can be used in day-to-day business to maintain the user data and roll it out to the parks/turbines.

The plugin **SFS Module Plugin RT** can be used in the M1 ServiceCenter as an extension to configure the SFS236C module from Bachmann. There are ready-made process sequences that check the communication to the module via CAN and, if necessary, update the mandatory CAN firmware and install the existing application.

## Reporting

Each process sequence is systematically logged and the results automatically generated and stored in a clear directory structure. A report is also created and archived in PDF format for each process. If the chosen process steps will produce an output, e.g. read out hardware version numbers, an Excel document is created and also archived in the same structure.



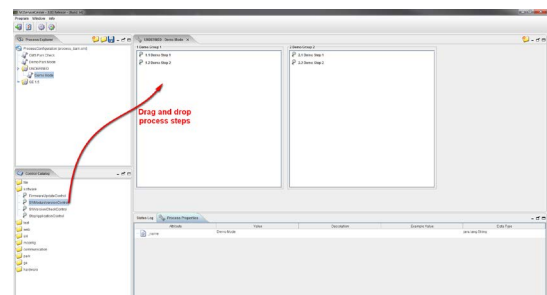
Report preview



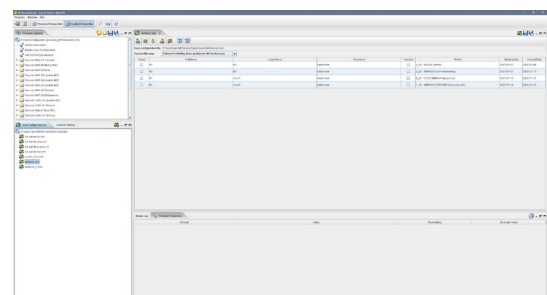
Report as a PDF document

## Features Software M1 ServiceCenter

- Offline configurations of parks and process sequences
- Online monitoring of process sequences
- User-defined plant types, process sequences and individual steps
- Automatic plant type detection
- Use of process sequences on individual plants and entire parks
- Several sequences can be defined for one plant type
- All process steps can be carried out independently of each other
- Use of standard Java for communication with M1 controller system (M-JSYS)
- Interaction via user-friendly dialogs
- Expandability through implementation by Bachmann – of custom applications
- Saving of all configurations in readable standard XML files with encryption of sensitive data
- Reading and processing of INI files for changing controller configuration automatically
- Entire program language in English
- Reduction of user interactions to a minimum
- Independent from M-Base and SolutionCenter
- No Java installation required since JDK already contained
- Target group: engineering and service personnel



Process configurator with catalog function



User management

M1 ServiceCenter	
Process connection / Communication	
Technology	Java application with DockingFrames framework
Protocol	Bachmann Java M-JSYS library for communicating with the M1 controller
Physical interface	Ethernet
Parallel operation	Yes, several connections to different M1 controllers with TCP or SSL
Hardware	PC, notebook or terminal with Windows OS / Linux OS
Installation	USB stick with executable program (and USB license) can also be installed
Project design	
Development environment	Graphical configurator tools integrated in the program for all necessary operating steps
Data retention	All configurations are XML-based and can be read and changed manually
Functionality	
Single operation	M1 can be configured and automatically operated with defined customized step sequences
Multiple operation	A machine park can be configured and operated with defined customized step sequences
Park configuration	A machine park can be created and configured offline
Step sequence configuration	Freely definable step sequences (if required in subgroups) via graphical editor (drag & drop)
Libraries	Many predefined and recurring steps for use/operation with M1 provided as a library catalog for direct use
Automation	All configured process steps are run automatically, any manual inputs required are indicated via appropriate dialogs and prompts
Reports	All results of step sequences related to several plants as well as single results of all steps are documented (PDF with preview in the program, Excel document in folder)
Connection	Multiple options to test the connection and function of the M1
User management	Integrated user management for BE AccessControl/M1SenAccess including roll-out process for park level and devices
Visualization	
Framework	Configurable plant layout with movable and dockable windows
Plugins	
Senvion Plugins Standard RT	Additional steps and process definitions for access solution at Senvion wind turbines
SFS Modul Plugin RT	Additional steps and process definitions for configuration and commissioning of SFS236C modul