AUVESY-MDT

DATASHEET

MDT AutoSave

AutoSave Change Management

Interacting seamlessly with nearly 100 editor packages and any PC-based application, AutoSave empowers users to reduce errors and downtime, increase productivity, protect users and assets, and identify specific modifications.

Reduce Errors and Downtime

The key to rapid recovery is the ability to access and download the correct program to the device at any time. In providing a common central repository of all changes, MDT AutoSave ensures that if a device fails or an incorrect program change is made, the most current copies of program files are available so plant operations can be restored quickly and correctly.

Increase Quality and Compliance

For organizations requiring an extra level of review/approval/audit of change AutoSave supports electronic signature and workflow approval for programs, electronic signature and audit trails for documents, multiple review statuses, verification and confirmation processes, password control, electronic log messages, configurable approval messages and more.

Protect Users and Assets

AutoSave can validate that the program running in the processor matches the current copy of the program in AutoSave. AutoSave also allows a user to see the last time that AutoSave confirmed that this was true. This enables you to detect and identify changes that may have been unknown or unauthorized, thereby protecting your process, people, and equipment. AutoSave is designed to manage access to program folders and programs via a flexible privileging system. All changes in the program include: the user making the change, date, time, client computer used, a user-entered comment, and the specific program changes. When physical access to the devices is possible, AutoSave can periodically compare the program running in each device with the current copy in AutoSave and identify any differences. An e-mail notification is then sent highlighting these differences.

Improve Business Intelligence

MDT AutoSave supports users at all levels of a customer facility to manage information regarding the on-going operations of their facility. This is achieved thru the AutoSave Portal that can be accessed from any computer, tablet, or phone that has access to your AutoSave System. The authenticated user in the portal can set up a customized dashboard to see any information pertaining to the on-going operations of the facility. It could focus on sub-sections of the facility or could provide summary review all operations.

Cybersecurity Protection and Recovery

MDT AutoSave protects the intellectual property in device programs (a critical aspect of security not addressed by data access & network monitoring applications), by enabling users to secure program data and access to data, detection of unknown or unauthorized changes and the ability to recover quickly from a malicious change with immediate access of an approved program copy. AutoSave can also track data such as firmware, software, and CPU versions in automation devices from certain manufacturers.

Plant-wide Control

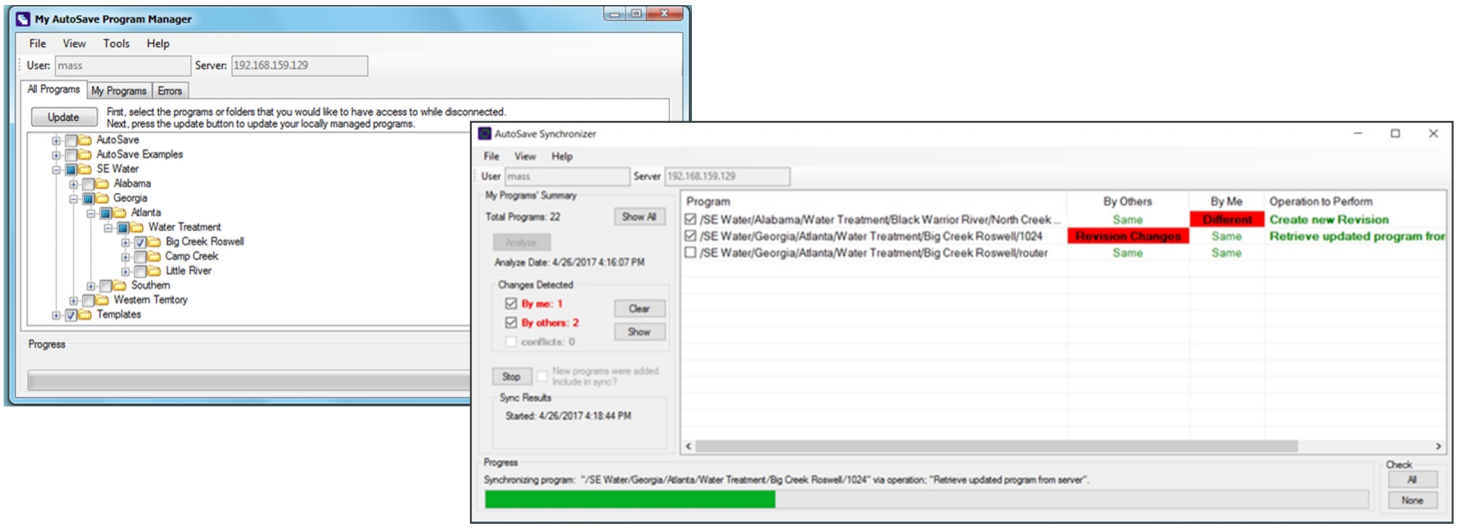
MDT AutoSave change management software supports any PC-based application and the greatest breadth of automation devices in the industry, including PLC, Robots, CNC, Welders, Drives, HMI, Workstations, Project Files, and documents.

ABB	B&R	GE	Omron
Acronis	CODESYS	G&L Motion Control	Pro-face
ADOBE	Cognex	Inductive Automation	Promess
Atlas Copco	Comau	Kawasaki	Rockwell Automation
Autodesk AutoCAD	DENSO	KUKA	Schneider Electric
Automation Direct	Durr	Microsoft	Sciemetric
AVEVA	Emerson	Mitsubishi Electric	Siemens
Bosch Rexroth	FANUC	Motoman	Stäubli

AutoSave can also support any PC-based application with the Universal Product Suite. For more information, and a full list of supported devices, go to: www.mdt-software.com/mdt-autosave/supported-devices/.

Management of Non-networked Devices

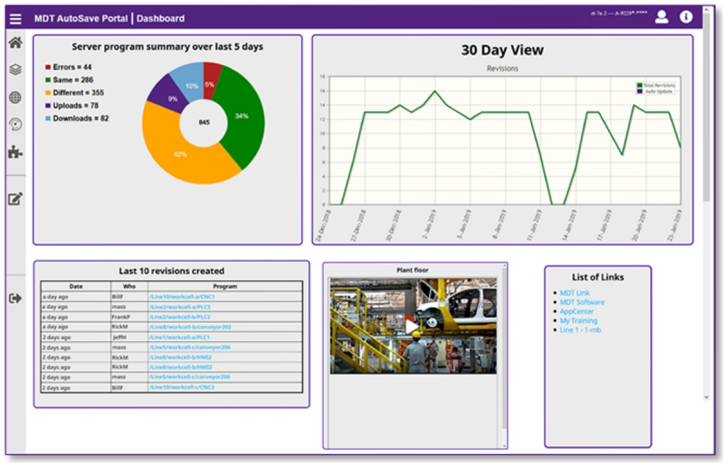
AutoSave enables users to track and analyze changes made to a large number of non-networked devices and easily sync them to the server for version control in remote areas and disconnected devices in the plant. Additionally, this capability can be leveraged by users who must travel to geographically different places that may not have access to your corporate network to work on isolated equipment. Further, it also enables system integrators and off-site development teams to work on programs without providing direct connectivity to devices.



Access Vital Plant Data from a Single Web Tool

Using the MDT AutoSave Portal, users can view all AutoSave activity in the plant including program activity, success or failure of device program compare results, program comparison details, and much more. This vital plant information is accessed from a single web interface that can run on workstations, laptops, and mobile devices. In bringing together the data generated by AutoSave change management activity, manufacturing and utility plants can easily identify issues that could impact plant performance and safety.

- Secure web view of live AutoSave data
- Integration of reporting and data management
- Customizable by users
- View revision activity
- Live monitoring of running command groups, agents and critical program data (program version, firmware version, last time changed and verified, etc.)
- Reporting data on-demand



PROGRAM VERSION CONTROL and BACKUP

Central Storage of all Program Versions

AutoSave maintains accurate records of which software version is in use, when changes were made, and who made the changes. When a change is made, a new current copy is saved. All AutoSave data is stored in a Microsoft SQL Server database and the actual program files are stored in a folder or on a network drive. This data can then be secured using appropriate network security since only the AutoSave Server process needs access.

Current Working Program

In the AutoSave client/server environment, the server stores a compressed version of the program files in their native file format. When the client requests a program from the server, a copy of the complete device-program is made available for use by the client. Since the current copy is stored on the server, authorized users can access the latest copy, enhancing productivity and safety. When a device program is downloaded, all users can be sure they are downloading the most recent "known" version.

Real-time Capture of Changes

After logging into AutoSave, a user can edit any of the programs they have access to. When edited, the AutoSave client automatically captures and saves program updates to the AutoSave server at the conclusion of the edit process. Since a user is connected to the AutoSave server, this means that as they finish the editing process, the changes are automatically stored into AutoSave and immediately accessible to any other users.

On-demand Download and Recovery

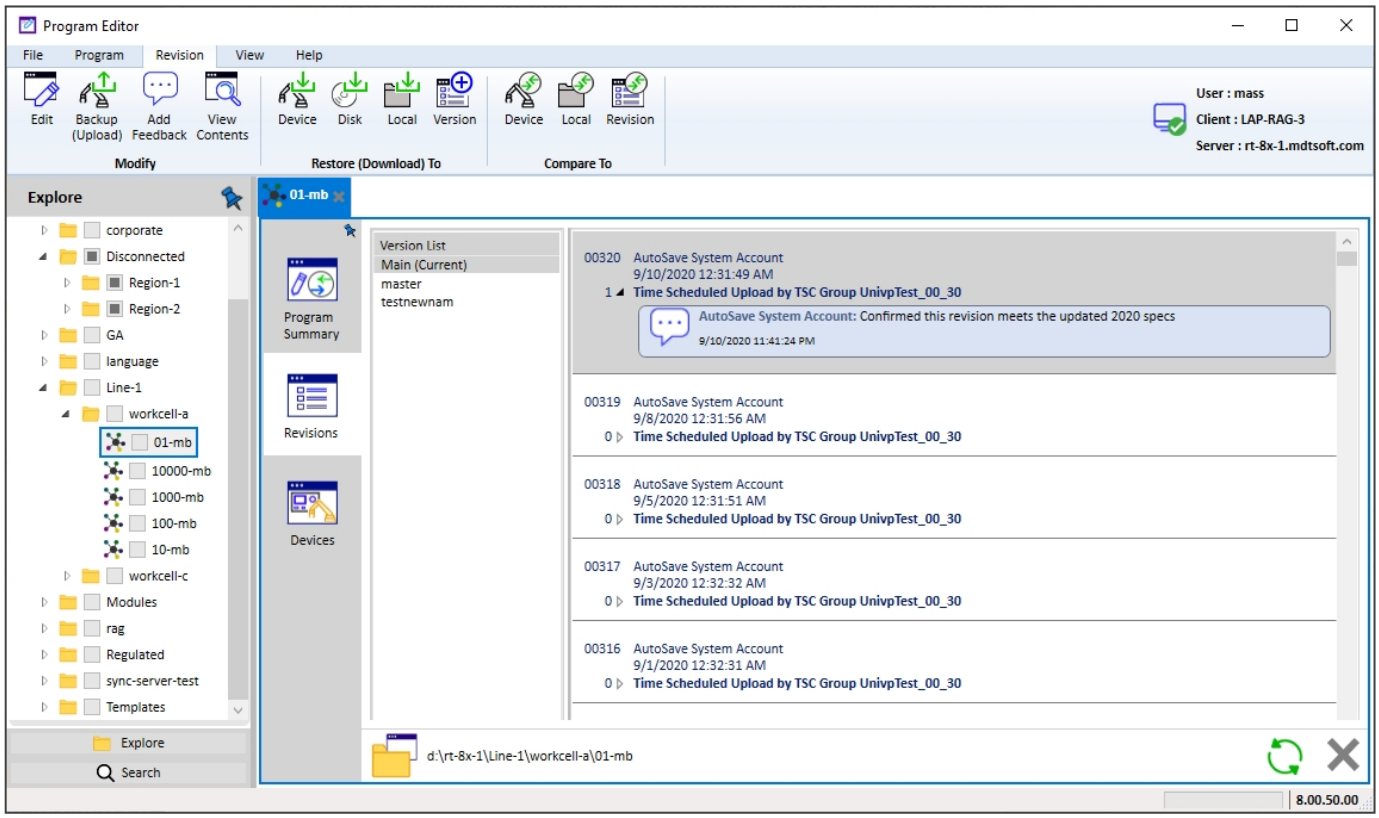
AutoSave provides on-demand access to each program's master copies and other older revisions. If the actual device fails, an appropriate user can then locate and quickly restore the correct program.

Historical Tracking

As each program/device is changed, a detailed history is maintained. Client activities are logged and stored on the server, enabling verification of each change. Users can see this history in the client application or can view this information from within the AutoSave Portal as needed. The history contains the date and time of changes to the program and includes which client was used, who made the change, the date and timestamp, the method of change, and user comments. Detailed activity logs of all changes made to the program can be accessed from within the AutoSave Portal.

Named Version Copies

At any time, an appropriately privileged user can create master/named versions. These named versions could be used to hold a "master copy" of the program at various site-specific times (such as quarterly or yearly) or it could be used to track future changes before they are ready to be rolled into the live running program.



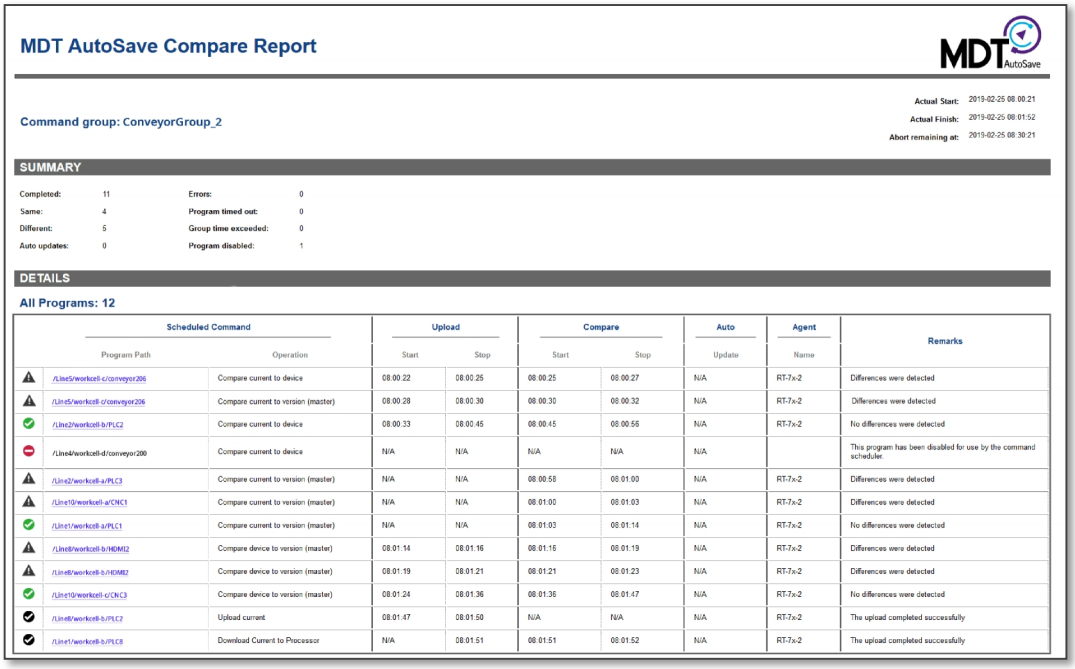
Local Workstation Copies

Many change management plans call for all programs to be readily available in case of network outages or standalone emergency workstations. This is accomplished by configuring AutoSave to keep the latest working copy on a specific local workstation as well as securely stored in the server library. Another AutoSave feature can quickly store program copies to any other networked location selected by the user.

CHANGE DETECTION and NOTIFICATION

On-demand Compare

Any two copies of a program, such as current, local, ancestor, or named version, can be compared to each other or to the device. This comparison is done on demand and may be performed from any client with access to the device program.



MDT AutoSave Compare Report

Command group: ConveyorGroup_2

Actual Start: 2019-02-25 08:00:21
Actual Finish: 2019-02-25 08:01:52
Abort remaining at: 2019-02-25 08:30:21

SUMMARY

Completed:	11	Errors:	0
Same:	4	Program timed out:	0
Different:	5	Group time exceeded:	0
Auto updates:	0	Program disabled:	1

DETAILS

All Programs: 12

Scheduled Command		Upload		Compare		Auto	Agent	Remarks
Program Path	Operation	Start	Stop	Start	Stop	Update	Name	
/Line5/workcell-c/conveyor206	Compare current to device	08:00:22	08:00:25	08:00:25	08:00:27	N/A	RT-7x-2	Differences were detected
/Line5/workcell-c/conveyor206	Compare current to version (master)	08:00:28	08:00:30	08:00:30	08:00:32	N/A	RT-7x-2	Differences were detected
/Line2/workcell-b/PLC2	Compare current to device	08:00:33	08:00:45	08:00:45	08:00:56	N/A	RT-7x-2	No differences were detected
/Line4/workcell-d/conveyor200	Compare current to device	N/A	N/A	N/A	N/A	N/A		This program has been disabled for use by the command scheduler.
/Line2/workcell-a/PLC3	Compare current to version (master)	N/A	N/A	08:00:58	08:01:00	N/A	RT-7x-2	Differences were detected
/Line10/workcell-a/CNC1	Compare current to version (master)	N/A	N/A	08:01:00	08:01:03	N/A	RT-7x-2	Differences were detected
/Line1/workcell-a/PLC1	Compare current to version (master)	N/A	N/A	08:01:03	08:01:14	N/A	RT-7x-2	No differences were detected
/Line8/workcell-b/HDMI2	Compare device to version (master)	08:01:14	08:01:16	08:01:16	08:01:19	N/A	RT-7x-2	Differences were detected
/Line6/workcell-b/HDMI2	Compare device to version (master)	08:01:19	08:01:21	08:01:21	08:01:23	N/A	RT-7x-2	Differences were detected
/Line10/workcell-c/CNC3	Compare device to version (master)	08:01:24	08:01:36	08:01:36	08:01:47	N/A	RT-7x-2	No differences were detected
/Line6/workcell-b/PLC2	Upload current	08:01:47	08:01:50	N/A	N/A	N/A	RT-7x-2	The upload completed successfully
/Line1/workcell-b/PLC8	Download Current to Processor	N/A	08:01:51	08:01:51	08:01:52	N/A	RT-7x-2	The upload completed successfully

Scheduled Compare

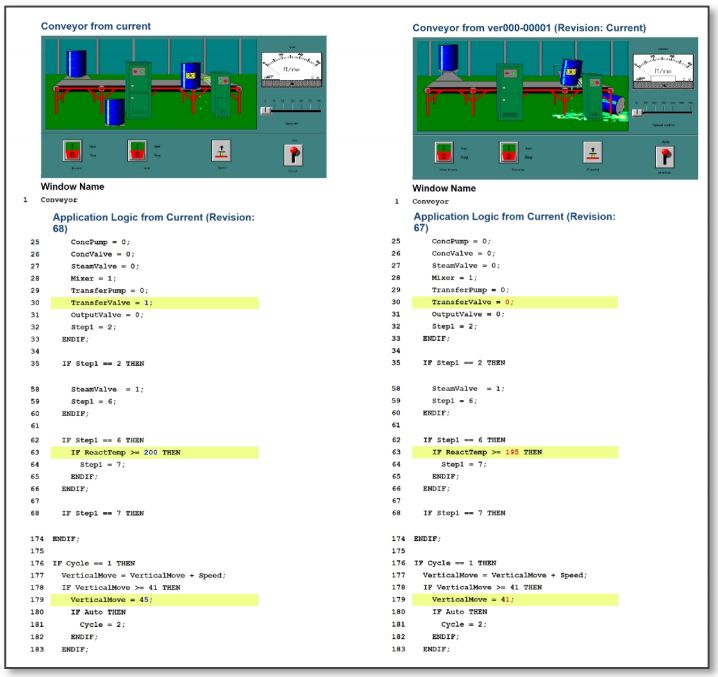
Comparisons can be scheduled and automatically performed. Automatically comparing the program in the device and a program stored in the AutoSave library can detect and identify changes between the program that may have been unknown or unauthorized, thus protecting your process, people, and equipment.

Automated Update

The system can be configured to periodically check for differences between the device and the current copy of a program stored in AutoSave. If there are differences, the program in the device can be automatically saved. This ensures the most up-to-date program revision is always in use at each workstation and a current backup is readily available.

Automatic Change Notice

When a change is made to a program, designated users are immediately notified via e-mail. Detailed comparison reports are generated, and users are notified of differences via e-mail. These e-mailed results are viewed via a Web browser that features hypertext links to graphical, ladder, or text-based details.



Conveyor from current

Window Name

Application Logic from Current (Revision: 68)

```
1   Conveyor
25      ConcPump = 0;
26      ConcValve = 0;
27      SteamValve = 0;
28      Mixer = 1;
29      TransferPump = 0;
30      TransferValve = 1;
31      OutputValve = 0;
32      Step1 = 2;
33    ENDIF;
34
35    IF Step1 == 2 THEN

58      SteamValve  = 1;
59      Step1 = 6;
60    ENDIF;
61
62    IF Step1 == 6 THEN
63      IF ReactTemp >= 200 THEN
64        Step1 = 7;
65      ENDIF;
66    ENDIF;
67
68    IF Step1 == 7 THEN

174 ENDIF;
175
176 IF Cycle == 1 THEN
177   VerticalMove = VerticalMove + Speed;
178   IF VerticalMove >= 41 THEN
179     VerticalMove = 45;
180     IF Auto THEN
181       Cycle = 2;
182     ENDIF;
183   ENDIF;
```

Conveyor from ver000-00001 (Revision: Current)

Window Name

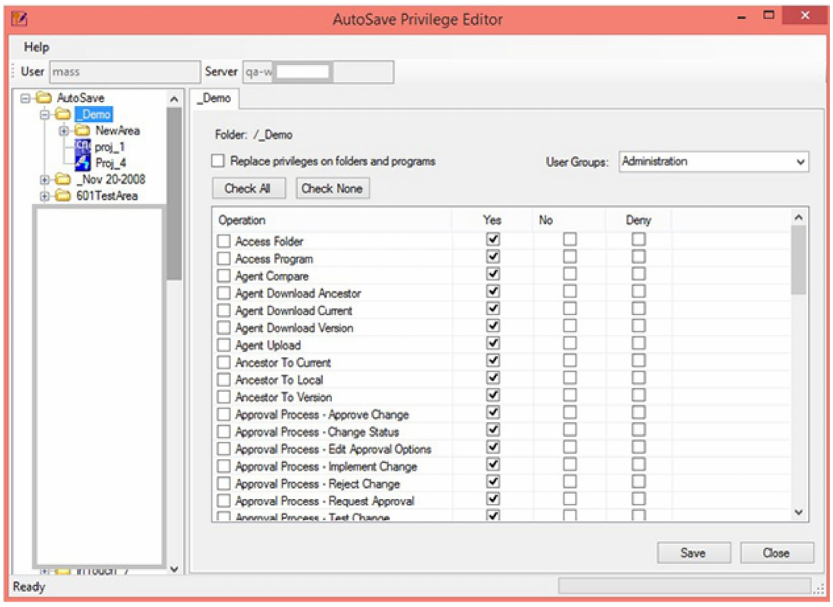
Application Logic from Current (Revision: 67)

```
1   Conveyor
25      ConcPump = 0;
26      ConcValve = 0;
27      SteamValve = 0;
28      Mixer = 1;
29      TransferPump = 0;
30      TransferValve = 0;
31      OutputValve = 0;
32      Step1 = 2;
33    ENDIF;
34
35    IF Step1 == 2 THEN

58      SteamValve  = 1;
59      Step1 = 6;
60    ENDIF;
61
62    IF Step1 == 6 THEN
63      IF ReactTemp >= 195 THEN
64        Step1 = 7;
65      ENDIF;
66    ENDIF;
67
68    IF Step1 == 7 THEN

174 ENDIF;
175
176 IF Cycle == 1 THEN
177   VerticalMove = VerticalMove + Speed;
178   IF VerticalMove >= 41 THEN
179     VerticalMove = 41;
180     IF Auto THEN
181       Cycle = 2;
182     ENDIF;
183   ENDIF;
```

SECURITY and PROTECTION

User Access Protection

Only authorized users can access programs and make changes in AutoSave. User passwords can be either authenticated against the customer's Active Directory Domain or managed directly by AutoSave. Users are assigned to one or more user groups (roles). An add-on is available to synchronize users in AD with users and groups in AutoSave.



Access rights to various programs in the facility are controlled by privileges assigned to the user groups. The detailed privileges available to change programs can also be assigned to user groups. When a user logs into AutoSave, their access to the programs (including what they can do when they open a program) are controlled by their membership to the users groups (e.g., maintenance, engineering).

Flexible administrative tools exist within AutoSave to easily manage the various privileges. This allows the customer to establish and maintain their set of desired privileges for their various groups of users.

Line of Site/Location Protection

Client workstations can be configured to control access to a program or area of the plant. This ensures that only specified programming workstations can be used for editing purposes when a safety or line of sight requirement exists. This capability can also be used to ensure that programs can only be accessed by computers in certain parts of your facility (even if line of site requirements are not relevant).

File Locking

When a user edits a program, the file is locked. Other users will then see an indication of who has the file locked. The system can deny access to others while the program is in use or to allow a read-only copy. When the user completes editing and saves the changes, the file is automatically unlocked.

ARCHITECTURE and WORKFLOW

Central Server Control

The AutoSave Server acts as the master control center, coordinating all security, versioning, and change-related activities from one central and secure location.

Optimized Processing

The AutoSave system also includes AutoSave agents. Agent technology moves compare functions to alternate computers for scalability. Multiple agents can be deployed to provide parallel processing of the unattended upload and comparison functions.

Integrated Technologies for Ease of Upgrade and Enhancements

AutoSave utilizes module extensions to the server that interact directly and uniquely with each 3rd party programming application. This eliminates the need to edit scripts with each new release of 3rd party software

Flexible Network Communications

AutoSave supports standard plant networking protocols, drivers, and devices. AutoSave uses the same communications you enjoy with your programming editor.

Open Standards and Architecture

AutoSave uses standard hardware and software, not proprietary or open-source platforms or tools which can have licensing or security concerns. This would include modern Windows server and client software support as well as a standard Microsoft SQL Server database for ease of corporate reporting and integration.

Fast Transfer and Compressed Storage

All programs, files, and documents are managed as compressed objects. Programs with multiple files are all contained in the single zip file. This allows the transfer of the file set from the server to the client quickly and enables efficient backup to other media and easy recovery of the program.

About AUVESSY-MDT

For over 47 years, AUVESY-MDT has provided global industry leaders with advanced change management and version control solutions for automated manufacturing assets. The MDT AutoSave software empowers users to protect, save, restore, discover, and track changes in industrial programmable devices and plant-floor documents. In using AutoSave to manage program changes, automation users can protect the intellectual property in their automation layer across their enterprise; helping to avoid risk regardless of the environment and device type for rapid recovery from hardware failures, mistakes, sabotage and other hazards.