



Automotive manufacturer speeds up S7 firmware updates with versiondog

Factory Floor Status

In the production facility of one particular German automotive manufacturer, SIMATIC S7 firmware updates used to require a great deal of man hours and represented a huge organisational challenge. These updates are rolled out frequently in order to fix device errors, for example, and each time the same questions are asked: “Which firmware and hardware is installed on which PLCs? Which devices will actually be affected by the update?” Previously, this information was recorded manually using Excel tables. Every time an update was announced, the relevant data had to first be updated by hand. Depending on the number of PLCs and CPUs being used at the facility, this could be a long and arduous process. This particular automotive manufacturer uses around 800 PLCs across an area of 7000 square metres. On top of the fact that large sections of the facility were difficult to access, maintenance workers also had to deal with barely visible CPUs. The facility even had to be partially shut down just to read the devices’ MLFB numbers.

Für die Versionsverwaltung und DatensicherungThe data management system versiondog by AU- VESY has been used for version control and backing up the facility’s PLCs for around 4 years

now. The system has become an indispensable maintenance tool and ensures complete documentation and traceability of all changes made to PLCs, CNCs, HMIs, robots and SCADA systems as well as the central management of projects or programs. Automated backups mean that data from ongoing production processes is backed up on a regular basis. If this data is deleted, overwritten or a particular device fails, then the most recent version is always available from a central location and can be restored at the push of a button.

versiondog has now become the gold standard of internal quality and data management systems and is therefore used throughout the entire plant at this particular location. Depending on the how often changes are made, around 2,500 components in the press shop, body shop, paint shop and assembly facilities are backed up on a daily or weekly basis and compared with the versions stored on the central server (online-offline comparison). In a bid to reduce the effort involved in firmware updates and to increase efficiency in this area, this automotive manufacturer decided to look for a software-based solution. The result of this customer-initiated project is Factory Floor Status,

a versiondog add-on that has officially been available to all users since the release of versiondog version 4.0. The aforementioned automotive manufacturer was involved as a premium tester and took part in the system's pilot project back in 2015. In the networked production facility, Factory Floor Status ensures a reduced workload, more streamlined processes and an accurate, factory-wide overview with no manual transcription errors.

Directory	Component name	Job name	Component type	Last executed	Address
Dienstleister DavidH...	ABB Freelance	ABB Freelance	ABB Freelance	17/09/2018 09:49:40	
Dienstleister DavidH...	Siemens	Siemens	Siemens S7	14/09/2018 11:12:11	10.0.0.220
Job results					
<input checked="" type="checkbox"/>	Backup age				
<input checked="" type="checkbox"/>	Cycle time				
<input checked="" type="checkbox"/>	Forced values				
<input checked="" type="checkbox"/>	RAM usage				
<input checked="" type="checkbox"/>	Battery				
<input checked="" type="checkbox"/>	Error display				
Dienstleister DavidH	Schneider Concept	Schneider Concept	Schneider Concept	14/09/2018 10:19:08	10.0.220.11
Dienstleister JensH...	RSLogix500	RSLogix500	RSLogix500	13/09/2018 09:28:37	
Dienstleister Simon...	RSLogix500	RSLogix500	RSLogix500	19/09/2018 13:37:39	
Dienstleister Georg...	WinCC flexible	WinCC flexible	WinCC flexible	21/08/2018 13:31:39	ET-FLEX08SP5
Dienstleister JensH...	Simatic S7	Simatic S7	Simatic S7	16/10/2018 11:04:23	10.0.0.221
Dienstleister JensH...	DriveSnapShot	DriveSnapShot_Agent	DriveSnapShot	15/10/2018 12:59:05	10.0.219.22
Dienstleister JensH...	DriveSnapShot - PsExec	XP - ServerArchive-A...	DriveSnapShot	15/10/2018 13:00:23	10.0.219.22
Dienstleister JensH...	DriveSnapShot - PsExec	XPSp2 - ServerArchive	DriveSnapShot	15/10/2018 13:00:52	10.0.219.22
Dienstleister JensH...	DriveSnapShot	DriveSnapShot_Agent	DriveSnapShot	15/10/2018 12:28:53	
Dienstleister JensH...	DriveSnapShot	DriveSnapShot_Agent	DriveSnapShot	15/10/2018 12:57:00	10.0.219.22
Dienstleister JensH...	Simumerk840D Leer_4.7 - Kopie	Simumerk840D Leer...	Simumerk840D	12/10/2018 10:18:37	10.0.220.4
Dienstleister JensH...	Simumerk840D	Simumerk840D	Simumerk840D	12/10/2018 08:44:19	10.0.220.3
Dienstleister JensH...	Simumerk840D Leer_2.7 - neu	Simumerk840D Leer...	Simumerk840D	12/10/2018 08:09:29	10.0.219.50
Dienstleister JensH...	Simumerk840D Leer_4.5	Simumerk840D Leer...	Simumerk840D	12/10/2018 08:09:07	10.0.219.51
Dienstleister JensH...	Simumerk840D Leer_4.7	Simumerk840D Leer...	Simumerk840D	12/10/2018 08:09:12	10.0.219.52
Dienstleister JensH...	RSLogix500	RSLogix500	RSLogix500	11/10/2018 15:34:45	
Dienstleister JensH...	InTouch	InTouch	InTouch	11/10/2018 13:15:47	
Dienstleister JensH...	#FIX	#FIX	#FIX	11/10/2018 12:06:11	
Dienstleister JensH...	Proficy Machine Edition	Proficy Machine Edition	Proficy Machine E...	23/10/2018 18:40:45	
Dienstleister JensH...	Job 14	Job 14	Schneider Mach...	05/10/2018 06:37:00	

versiondog Factory Floor Status – tabular interface.

The system lists all PLCs with their associated MLFB numbers and firmware/hardware states in an easy-to-read table. With the search and filter functions, users can search for specific MLFB or assembly numbers, which saves a great deal of time. The system also helps to prevent errors that occur when outdated firmware goes unnoticed. The automated display of this information prevents errors caused by manual transcription or by information being read incorrectly, and means that Excel-based paper documentation is no longer necessary.

The maintenance manager, who is also the versiondog administrator, sums up: “When it came to using Factory Floor Status, our colleagues needed no persuasion. Everyone said the same thing: “This software is great”. A quick look at Factory Floor Status and a maintenance worker can easily tell whether or not they will be affected by a firmware error”. However, working with versiondog and Factory Floor Status does not mean that workers can blindly trust the software and be free from all responsibility. Quite the contrary. The clear, reliable overview and the distinct outline of the plant's structure mean that workers take responsibility for their own part of the plant and can work indepen-

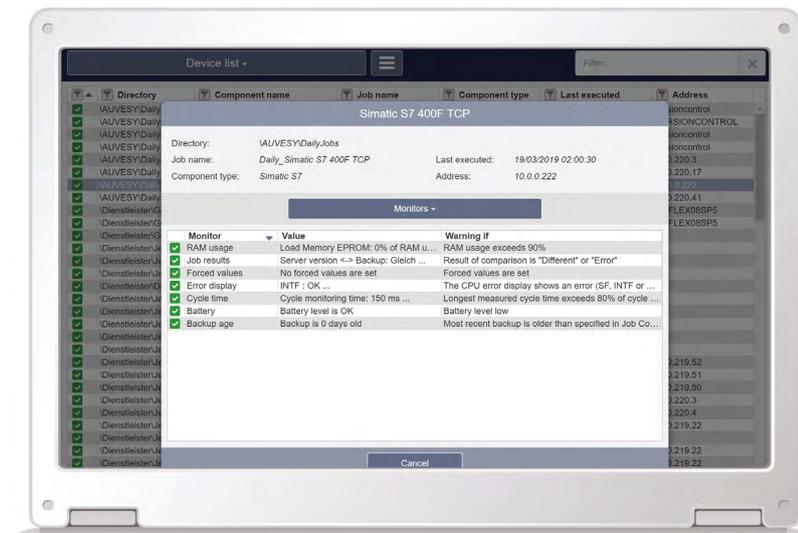
dently of higher-ranking departments. This has greatly increased employee motivation and dedication. versiondog is therefore not a monitoring system for individual performance, but rather acts as a backbone and provides a secure foundation for data availability and storage.

Factory Floor Status provides even more production-related information which helps to increase efficiency and saves time and money. The ability to check the battery status of devices, for example, helps prevent data loss in the event of a power outage. As the battery life is often somewhat shorter than officially stated, this means that low batteries can be replaced on time to prevent stoppages. This also has a positive effect on storage, as it makes it possible to calculate and plan the required number of replacement devices (PLCs) more precisely and with a greater degree of certainty.

In the paint shop, where forced values are frequently used, the Factory Floor Status add-on plays a particularly important role. Forced values are temporary settings that are reset at a certain point in time. With a wide variety of devices and settings, however, it can sometimes be difficult to keep track. Factory Floor Status therefore acts as an automatic reminder and notifies the relevant maintenance worker of where and when forced values have been set.

To proactively optimise process and facilitate monitoring in the facility, the system also provides information on RAM usage and cycle times. During plant construction, and later on in the life cycle during plant expansion, these values can be used to identify unnoticed errors or exceeded limit values. As far as cycle times are concerned, this automotive manufacturer has a required safety margin of 20%. Due to the information provided by Factory Floor Status, the plant engineer can immediately see where more powerful PLCs/CPU's need to be installed and where adjustments and performance improvements have to be made. In the past, the performance of a production facility would often decrease over time. At some point, this would be an indication that the RAM limit had been reached. With Factory Floor Status, users can now see at an early stage that limit values are about to be reached (or that they have been exceeded) and take proactive measures against this.

The biggest advantage from a global maintenance point of view is that, in addition to this new, device-specific information, the current status of the executed backups can be viewed at a glance. This means that certain data that could previously only be viewed via the versiondog system can now be viewed via the



versiondog Factory Floor Status with monitor view.

web-based Factory Floor Status add-on. In the production facility, maintenance workers will always take a look at Factory Floor Status so they can start work with the most up-to-date information and personally check their own area of the facility. With the additional display of versiondog system data, it is now possible to immediately see at the start of a shift whether any changes were made in the previous shift, without having to send an additional request

via the versiondog client. If there are any errors or uncertainties, the user can immediately track, locate and verify these changes. Complete clarity and maximum data availability mean that less effort is required and more resources are available for optimisation and new maintenance tasks. In addition to a variety of Siemens PLCs, the automotive manufacturer also uses devices from the companies SEW and Phoenix Contact. In the coming releases of versiondog, these PLCs will also be integrated into the Factory Floor Status add-on. "All of our workers are eagerly awaiting the integration of these new devices. Because of our extremely positive experience with Factory Floor Status thus far, we already know the huge benefits that these enhancements will bring".





About AUVESY

AUVESY (AUtomated VErsioning SYStems) is the world's leading version control & data management system for automation. The company has grown steadily since it was founded in 2007 and it continues to go from strength to strength.

With a team of around 80 employees and 30 international sales partners, AUVESY looks after more than 700 customers from across the industrial spectrum and in more than 40 countries.

Over 900 versiondog software systems are currently in place helping customers to safeguard their data, simplify their data management and optimise their workflows.

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