



No PLC forgotten

versiondog plays a central role for the maintenance department at thyssenkrupp

The Smart car may be small in size – however, as far as the reliability of its production processes is concerned, the city vehicle encompasses just as many demands as do larger vehicles. thyssenkrupp produces Smart vehicles at its Hambach (Moselle) factory, the maintenance department of which employs AUVESY's versiondog.

thyssenkrupp specializes in the construction of axles and its Hambach (Moselle) facility is responsible for the production of Smart front axles and rear axles (including the motor). The company has seven facilities world-wide that produce for such a diverse range of OEM's as AMG and BMW. Each thyssenkrupp facility is tailored to meet the production requirements of the OEM and is typically located in the vicinity of the OEM. The Hambach (Moselle) production facility is especially unique as its assembly lines are situated on the same premises as that of the Smart production site. Terms of delivery are naturally tighter than they would be elsewhere. Gilles Gaeng, Technical Manager of Maintenance and IT at thyssenkrupp explains: "A Smart vehicle is produced every two minutes and we have to deliver our axles accordingly. Where other plants might have several hours, at Hambach we only have 32 minutes. This small buffer means zero tolerance when it comes to delays. Or else the whole plant is left standing."

Preventive maintenance has been in place for

the last eight years. In addition, risk assessment is regularly carried out for all devices. In accordance with an improvement management system, adjustments are made when anomalies occur at certain points. The Hambach production facility plays a lead role when it comes to this process. The organization of maintenance, the introduction of AUVESY's versiondog data management software, and the execution of automatic backups and documentation of software status of controllers all began as pilot projects at this facility. These pilot projects set the precedent and other plants began to follow suit.

Unplanned downtimes need to be resolved immediately. Gilles Gaeng, the technical manager makes it clear: "In my position, I don't have the time to think about how I am going to resolve an issue. I only have time to think how I can get production to continue." The customer's demands were clear and a solution in the form of a standardized data management software was quickly found.

Preventing downtime

In was during an internet search that Gaeng happened upon versiondog. It quickly became clear that he had found the software he had been looking for, one which would automatically, regularly, and reliably document and store current software versions and would pro-

vide him with the preventative maintenance he required. Moreover, he saw that customers in the automotive industry were also using the versiondog software. A good sign for the supplier.

The date of the decision came sooner than expected. On this day, the front axle production line came to a standstill, which lasted three and a half hours. It is important to emphasize that a single production minute on the factory premises costs 7000 EUROS. In accordance with troubleshooting, central PLCs were disconnected from the power supply, which resulted

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Gilles Gaeng, Technical Manager of Maintenance & IT at thyssenkrupp Automotive Systems GmbH

in the loss of actual values. Until this point, controllers had been backed up manually and only every six months at that. It was only when the line was put back into operation that it was discovered that the status of the program was obsolete. There was no backup of the latest version.

After this incident, action was called for and Smart demanded that a safe solution be found in order to prevent such a downtime from occurring in the future.

Until this incident occurred, documenting software versions was ambitious, but not very well structured. Maintenance staff tended to save the current version on their local computers. What's more, the PLCs were not yet connected to the production network. That wasn't enough for Gaeng, especially in the aftermath of the downtime.

With the help of AUVESY, a strategy was quickly developed to determine how versiondog should be introduced. “We received a lot of support there,” reports Gaeng. The first step was to create a new network infrastructure, within which all relevant controllers and modules were able to communicate with each other and exchange data. Every assembly line,



machine, and PLC were to be connected to the new production network. With help from AUVESY, each version was connected. Gaeng and his team did not have much time.

In comparison to the cable installation, the process of introducing and training maintenance staff was a simple exercise. Gaeng himself set up all jobs in the AdminClient and – although new to versiondog himself – it was he who taught his employees the first steps. “After just three hours of training, every employee can work with versiondog in the UserClient.” For daily work, technicians only need to know where they need to go to access programs on the server, how to Check-In work, and what to document. The software is not intimidating. Now, versiondog belongs to the standard procedures of daily work.

Saving time thanks to automatic backups

A total of 105 data backups, also known as jobs, are carried out on a regular basis. These jobs encompass data blocks (which are backed up every five minutes), PLCs (which are backed up daily), and tightening system controllers (which are backed up on a weekly basis). These intervals are adjusted according to need. Special attention is given to the tightening system controllers due to the fact that all power cards, network cards, and parameters are documented there. This is a great advantage as this data also serves as concrete proof for customers that the tightening system connections are set up correctly. Until versiondog was introduced, backing up data from all 96 channels was a time-consuming task that had to be carried out manually. It took on average five minutes per backup, plus extra time to go from location to location. This was why a backup was only created every six months.

Gaeng: “Now we save a lot of time, because the data can be immediately retrieved, and I am always aware of the current status. No PLC goes forgotten. We are well equipped.”



Robust documentation

An additional benefit was discovered by Gaeng during operation: “The fact that backups can not only be saved, but also compared with each other is an enormous help to us, especially during audits.” Data and information are retrieved by Smart even when internal audits are carried out. Such internal audits take place twice a year. In addition, there are also the TÜV audit, the ISO audit and the IATF audit; it all adds up. But now Gaeng can provide the auditor with all important information at the click of a button and at any time without any preparation.

One of the most important changes has been that the latest program versions are no longer located on different local computers, but in one central database. Gaeng can make adjustments in the AdminClient. When a new section of the plant is added, he will first choose smaller backup intervals, which will be extended as time goes on. For Gaeng, versiondog has become an important tool for preventive

analysis. For instance, versiondog sends an error message for critical network connections of tightening system controllers, enabling maintenance technician to restart the controller on-site and prevent failure.

External contractors also have user access

All individual components along the line play along. Gaeng: “Everything that AUVESY promised works. Support is very responsive. Acceptance amongst employees is high. The technical manager gives two reasons for this. Firstly, all employees are trained to work with versiondog. Secondly, tedious discussions about WHO changed WHAT, WHERE, WHEN, and WHY to a program are eliminated because every change is documented and staff at thyssenkrupp are obliged to enter a comment. Each maintenance team member has a versiondog UserClient installed on their computer. External contractors are provided with their own login. Thus, all changes are managed using a uniform and simple interface. Maintenance team members are also able to work with any editors that are linked in versiondog. Since its introduction versiondog has more than paid for itself. Gaeng reports: “Graphical comparisons make differences immediately recognizable and I receive a message if changes have not been versioned.” Gaeng was able to use this to prevent any greater damage from occurring, e.g. after an external PLC programmer made changes. The next day, he compared the last versions with each other and was able to immediately go back to the last error-free version. Gaeng: “The software is set up: all new projects are stored in versiondog as standard. I see no reason as to why we would ever do without this system again.”

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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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