7 Myths of version control and backups in automation

MYTHS VS FACTS

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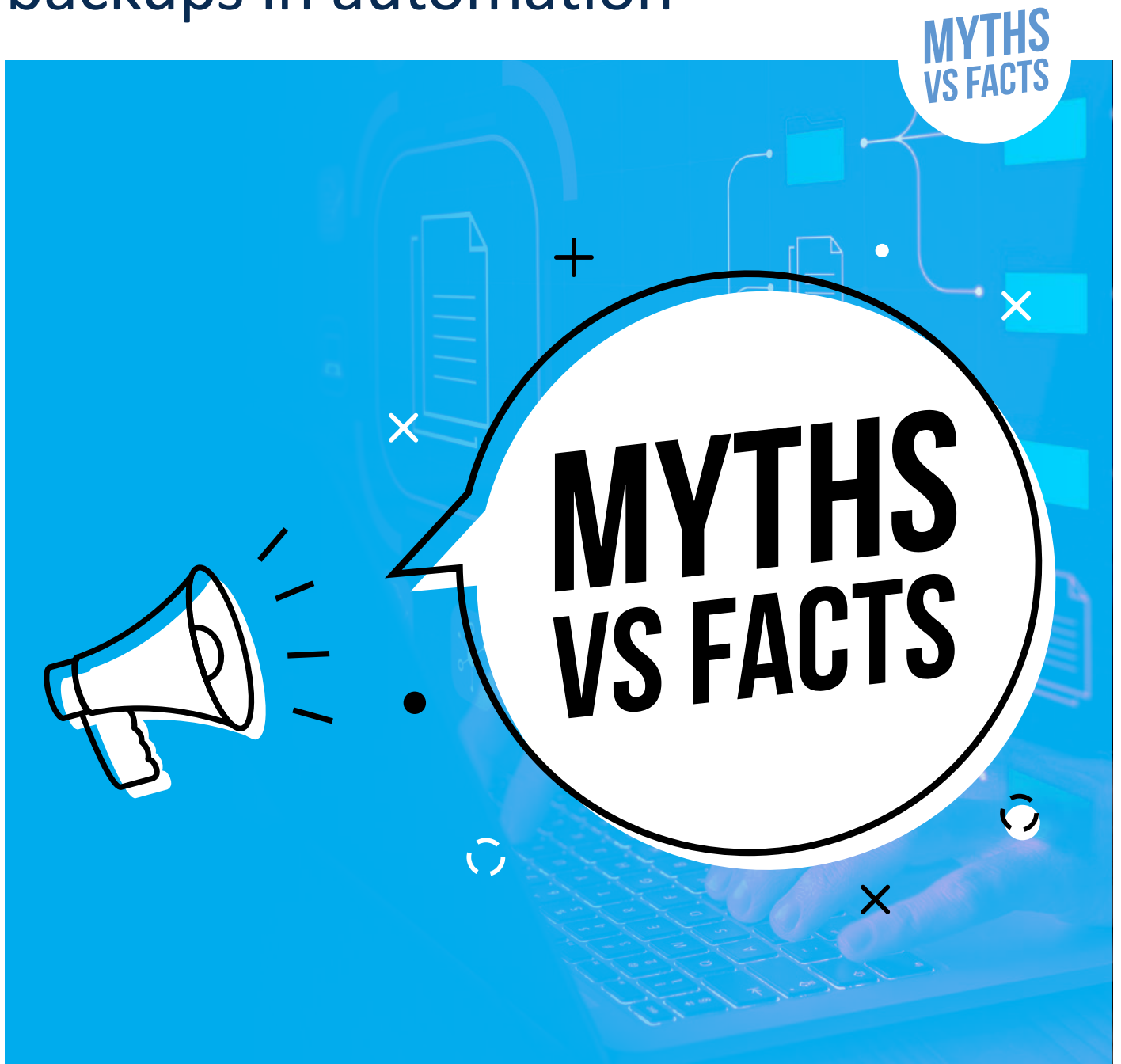
This free white paper addresses seven current myths surrounding version management and data protection

Introduction

Versions control and data management in automation

If you are familiar with high-level programming language, you will know that version control is an essential tool in software programming that helps to safeguard and optimise development and increase flexibility. In the field of automated production, however, the issue has only recently become relevant. The ever increasing time pressures and rising costs are forcing plant operators to maintain plant availability while minimising downtime and making recovery as fast as possible.

However, modifications to control units such as PLCs can quickly lead to plant downtime or wastage if programming errors occur.

There is therefore a real need to monitor, track, compare and backup changes to EN 61131 programs. In spite of this, many production managers and employees remain sceptical about the introduction of version control or data management systems. The manual approach may well have worked for years, even if the data was only presumed to be secure and spread across various management tools. The elephant in the room, however, is that the number of editors and devices will steadily increase over time, resulting in more data and a greater potential for error.

The first major breakdown to unnecessarily waste time and money is sure to be a wake-up call. It will then become apparent that relying solely on manual version control was somewhat short-sighted and that a version control system would have already paid for itself.

This white paper tackles the seven most common myths and misconceptions surrounding version control and data management in the current technological climate. A critical approach to this issue is perfectly reasonable, but only when it comes questions such as „what" and „why". As a user, there is a huge variety of different solutions available to you. This white paper will help you choose the most practical and useful option currently on the market.

1.

Version control is unnecessary – our production facility has been running without this kind of software support for years

Without modern version control and synchronised upload, download and compare processes, you can never be sure that the software version controlling your facility matches your most recently shared version.

Furthermore, without a comparison of the online (production facility) and offline (server) status, as well as a detailed (graphical) representation of different versions, you'll be running your production more or less blind!

Current version control systems offer a water-tight backup strategy for precisely this reason. They even work across multiple sites. Backed-up data from distributed production facilities can also be synchronised via a central storage location, thus enabling you to check for changes between different versions.

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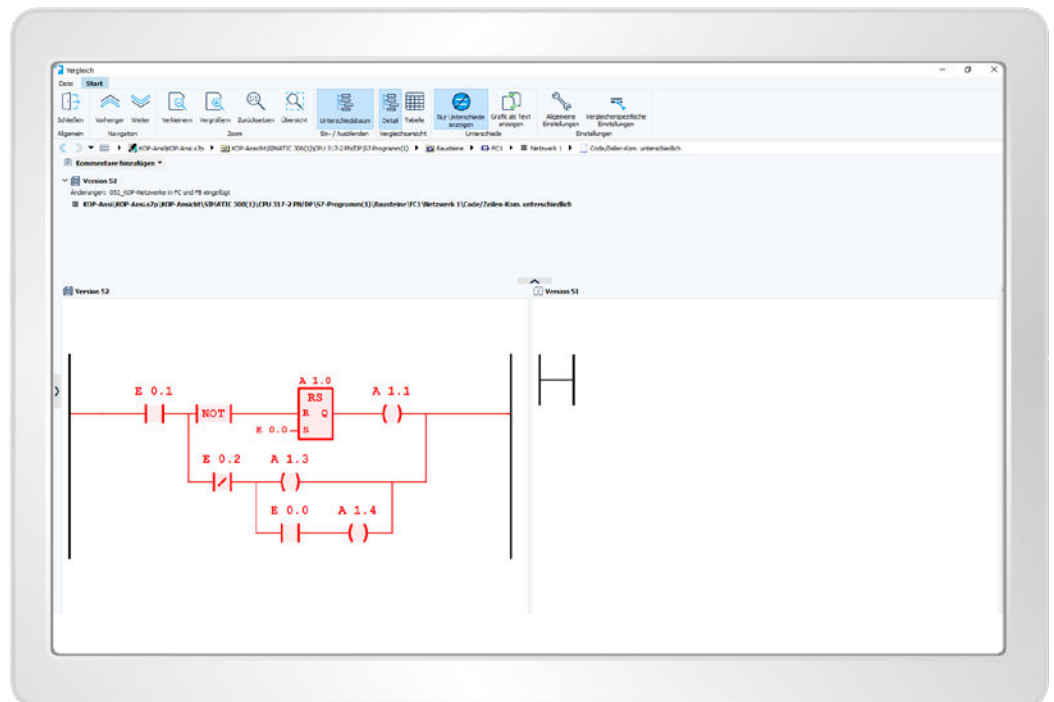
2. Implementing a version control system is risky and expensive

The days of huge servers and long, drawn-out software implementation are over. With the current generation of software, implementing a version control system requires very little effort – you can even run the system directly from a USB stick. All you need is a central server and any number of installed clients.

This server-client structure allows users to work offline and check in new versions at a later date. Furthermore, the intelligent user management (automatic synchronisation via Active Directory) prevents unauthorised access and automatically documents who exactly made the changes.

3. A version control system is primarily used to streamline the existing workforce

Even in highly automated production facilities, qualified workers remain a key and indispensable resource. Auxiliary software systems can only ever be as intelligent as their programmers and users. In the field of data management, it is particularly crucial that data be maintained accurately and in a conscientious way.

The aim is to automate time-consuming and low-skill tasks such as manual backups, manual comparisons and the tedious search for data storage media and backup locations as much as possible. This frees up staff, especially their know-how, to work on demanding, valuable and forward-thinking projects instead.

4. Our current version control strategy does the job – more software just means more training

A simple comparison of file sizes and dates is not the same as effective version control and certainly does not enable a detailed (version) comparison of the control programs that are synchronised on the server. And that's without mentioning the ability to clearly identify and mark the most recently released version.

Non-homogeneous automation plants require many different project planning tools and editors that must be maintained and programmed by ever growing production and maintenance teams. Only a software-based solution can lighten this particular load. Leading version control systems can integrate your tried and tested editors and project structures while supporting you with a menu-driven tutorial and automated backups. This results in minimal training and a high degree of usability.
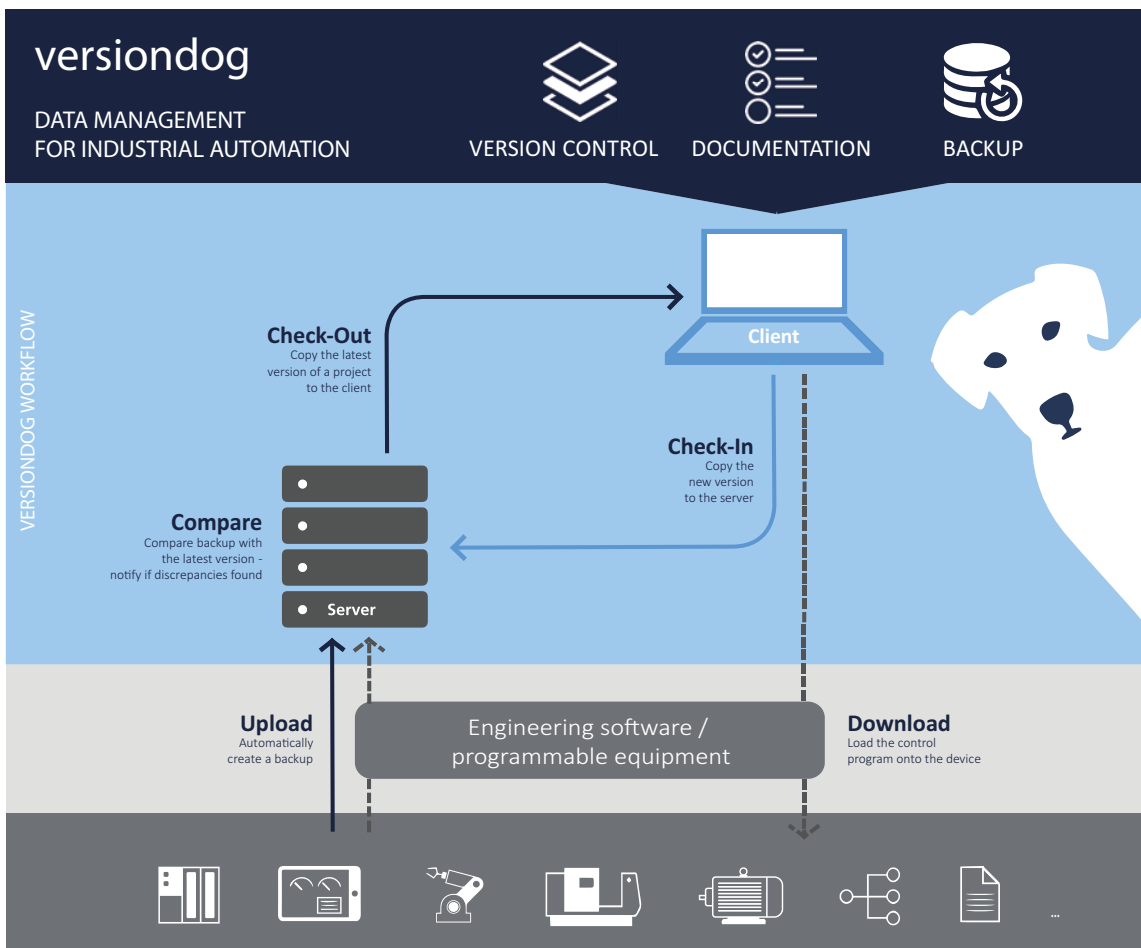
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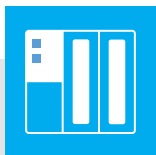# A homogeneous automation environment is required

The individual controller manufacturers also offer version management solutions. However, these solutions only support the manufacturer's own devices and are therefore only really useful in homogeneous production facilities. But does such a thing even exist nowadays?

The automation market and the number of manufacturers and suppliers are constantly growing, which in turn leads to a greater degree of complexity in production facilities. This is why production facilities are now a vibrant mixture of different types of industrial robots, field devices, control programs, drive systems, programming languages and file formats.
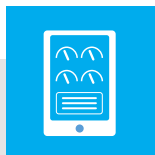
The advantage of a future-proof version control system is that you are not dependent on a single manufacturer. Furthermore, the version control system not only supports the most common automation systems, but also regularly adapts to the latest device versions so the user always has the required comparators.
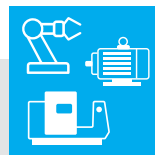
Manufacturer-independent device support

(versiondog 8.1.5)

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■ AEG	■ ABB	■ ABB	■ Adobe PDF
■ B&R	■ AVEVA	■ COMAU	■ ASCII
■ BECKHOFF	■ COPA-DATA	■ FANUC	■ Binary
■ BOSCH	■ GE	■ Kawasaki	■ CSV
■ CODESYS	■ Rockwell Automation	■ KUKA	■ FTP
■ EATON	■ Schneider Electric	■ MITSUBISHI	■ Microsoft Excel
■ ELAU	■ Siemens	■ OMRON Adept	■ Microsoft Word
■ GE	■ ...	■ Stäubli	■ Netzwerk (UNC)
■ Mitsubishi		■ YASKAWA MOTOMAN	■ SSH
■ Phoenix Contact		■ ...	■ XML
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6.

Version control can only be made to work effectively when there are no external suppliers involved

It is now difficult to imagine a working world without concepts like lean production and lean maintenance. Given the focus on increasing efficiency and productivity, it is probably rare for you to work with no external service providers and suppliers at all.

It is therefore imperative that a version control system be capable of tracking, monitoring, comparing and checking changes made to control devices by system integrators and OEMs.

The question of „why" is also of huge importance when working with external service providers in particular. Full validation and traceability are only possible if the reasons why changes have been made are documented.
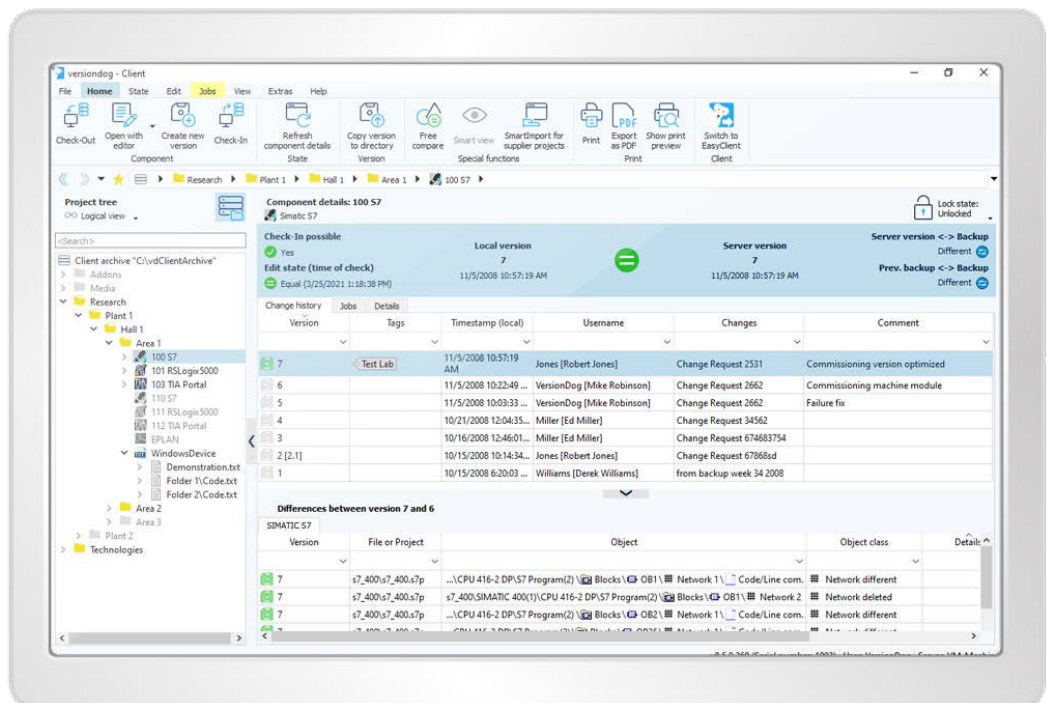
7.

Backup and version control are like apples and oranges

It is important to note that a version control system is not a replacement for backups, and that backups are even less of a replacement for version control. They are two different tools that work best when used together and ensure that the relevant data is always available when needed.

On their own, neither centralised backups nor version control can ensure 100% security for consistent data. The only way to find out whether the centrally stored projects actually match the productive programs (offline-online-status) is through the regular (automated) comparison of software versions. This way you can track changes and analyse them accordingly. On the other hand, there is no point in automatically creating a version of backup data.

At the end of the day, not all backups are the same. For fast disaster recovery, you will need a restorable backup of the most recent version. This means that symbols and comments must also be uploaded. You should therefore consider the type and quality of data backups carried out by an automated data management system so that you always have a restorable backup to maximise plant and data availability.
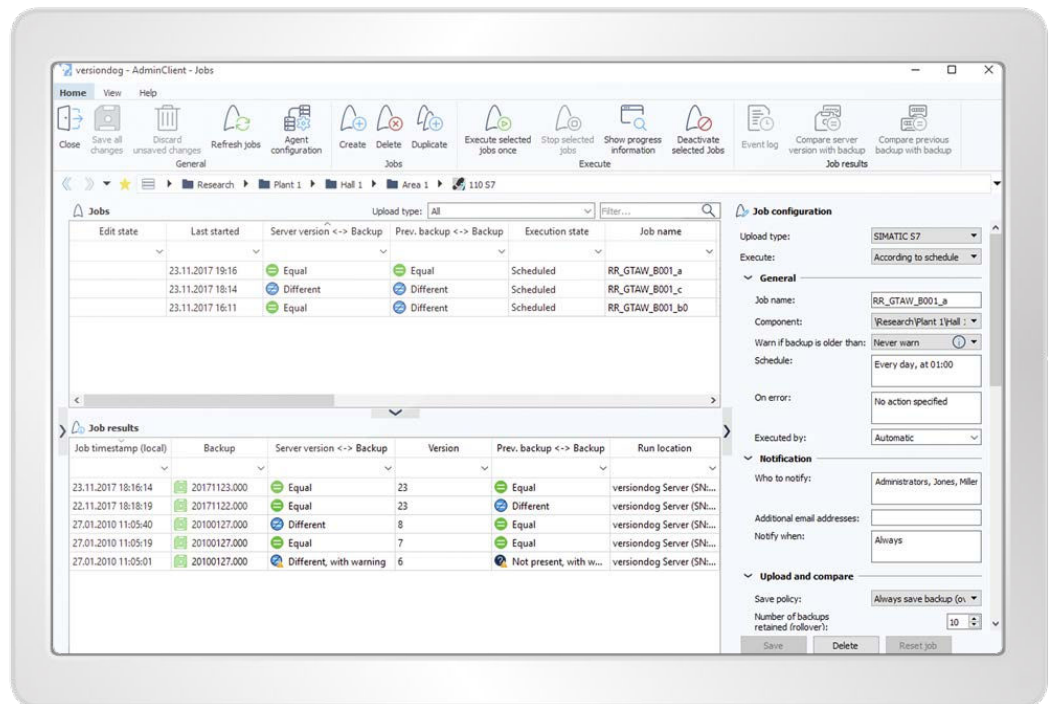
About AUVESY

AUVESY GmbH (www.auvesy.com), founded in 2007, is a leading global provider of vendor-independent version control and change management software for automated production. With its software "versiondog", AUVESY offers a product that provides industrial companies with uniform central data storage, fully automatic data backup, version management with detailed change detection and clear documentation, while at the same time being highly user-friendly and adapted to the automation systems of various manufacturers. AUVESY software is already used in more than 40 countries worldwide in a variety of different branches. The company, based in Landau in the Palatinate region of Germany, employs around 90 people.

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