

televic

WHITE PAPER

How to future-proof your Passenger Information Systems Software

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Summary

In today's fast-paced world, public transport travelers can't do without real-time information on routes, schedules, delays, and connections anymore. Therefore, a reliable Passenger Information System (PIS) is crucial.

Like in every technology, PIS software evolves over time. However, in general, many PIS software solutions are installed and never updated throughout their lifetime. All that time, travelers and train operators do not benefit from new features or updates. And even worse: in a connected world, outdated software is increasingly vulnerable to cybersecurity breaches.

The solution is to manage PIS Software as a service. This white paper explores how a software lifecycle approach helps to maintain the integrity and performance of Passenger Information System software. It also explains a step-by-step migration to a cloud-based PIS solution.

Furthermore, it provides insight into the support and maintenance services that ensure the best passenger experience by providing passengers with the latest features. In other words: this is the journey from a legacy, on-premises software solution to a cutting-edge, cloud-based PIS managed as a service.

Limitations of legacy software

2.1 Limited maintenance and support

Back in the day, the dominant use case for software was ‘buy it and use it unaltered for years’. In the last decade, however, software has been increasingly being sold as a service. Users pay a recurring fee, and in return, they get access to **the latest features and cybersecurity updates.**

This change happened because technological innovation is evolving exponentially, delivering new features at a lightning pace. And even more importantly: legacy software has become increasingly vulnerable to security breaches in a connected environment.

The same goes for PIS software: when a new software generation emerges, investments in further development of the previous generation come to a standstill. The software becomes outdated and can’t cope with the changing environment that feeds data into it. Users are deprived of new features, performance and maintainability improvements, and cybersecurity monitoring.



2.2 The risk of outdated software technologies

Many legacy PIS software encounters the problem of obsolescence in software libraries and the dilemma of no longer supported versions of operating systems on local servers. This often leads to software becoming unusable due to incompatibility issues or posing risks to end customers.

Outdated technology is not a new phenomenon. While using older technology versions is not necessarily an issue from a functional perspective, outdated technologies can often introduce serious risks to an organization.

Working with no longer supported operating systems or obsolete software libraries makes them vulnerable to cybersecurity risks, data loss if the software fails, and unreliable software performance.



2.3 On-premises limitations

Many legacy software solutions run on local servers within an organization's physical infrastructure (so-called 'on-premises', often abbreviated to 'on-prem'). This comes with possible limitations:

1. High CAPEX: on-prem infrastructure requires a significant up-front investment to purchase, install and maintain hardware, software, and network equipment. (CAPital EXpenses)

2. Scalability limitations: compared to the flexibility of cloud-based services, scaling on-prem infrastructure can be time-consuming and costly.

3. High maintenance cost: the operator is responsible for maintenance, upgrades and updates which introduces labor and equipment costs that are often overlooked and hard to predict.

4. Accessibility: while on-prem solutions afford more control over the infrastructure, they are less accessible than their cloud counterparts. Despite the potential for remote setup, on-prem solutions almost always require an on-site maintenance team.

5. Own responsibility for cybersecurity: on-premises environments place the entire cybersecurity burden on the operator. This requires highly skilled and specialized people and constant attention from the IT team as cybersecurity evolves rapidly.



Part Three

The solution: Software Services

The adoption of Software Services can overcome all of the above limitations. In exchange for a recurring fee, customers get access to a software package that remains cybersecure and up-to-date with the latest features. With these services, your static software solution is transformed into a dynamic one.

The benefits are clear: there is no need for a large up-front investment. **The cost is spread over the complete lifecycle of the project**, and the high costs of securing and maintaining a custom solution through ongoing investment in a dedicated, highly skilled IT team are reduced. In other words, customers are completely unburdened and worry-free.

At the same time, users are always provided with the latest features, improved usability and performance, and continuous support. And because the same party maintains both applications and infrastructure, discussions about responsibility are avoided.



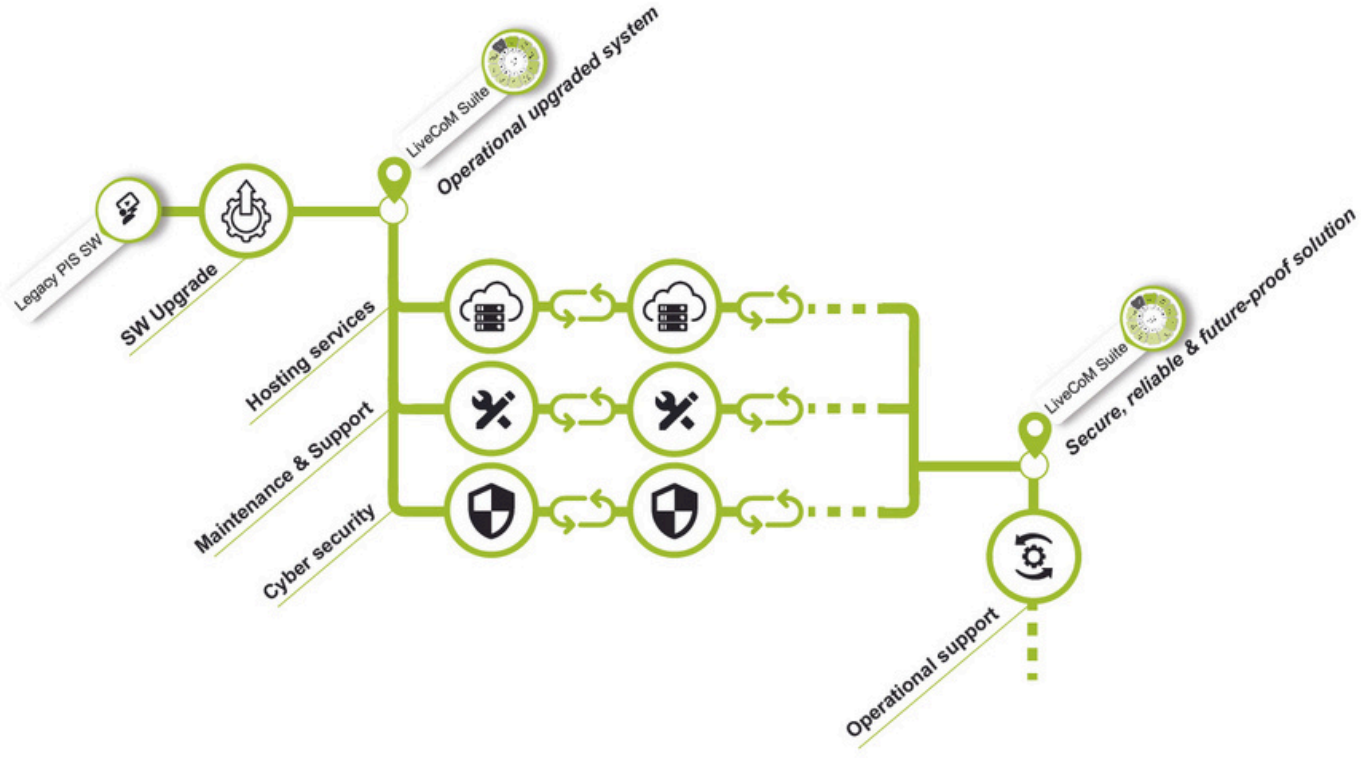
Part Four

Televic Rail's step-by-step approach for a hassle-free upgrade

Televic Rail offers a hassle-free upgrade from a legacy PIS to an operational cloud-based PIS system, LiveCoM Suite.

The diagram below illustrates the upgrade journey from legacy software to our cloud-based LiveCoM Suite. First, we transition you to an operational and upgraded PIS system. In the second phase, we bring in Hosting, Maintenance & Support and Cybersecurity Services.

At this stage, you'll have a secure, reliable and future-proof solution. Once everything is up-and-running, Operational Support and training ensure a hassle-free experience.



4.1. Upgrade to the LiveCoM Suite

An upgrade to the LiveCoM Suite is possible irrespective of your current type and brand of PIS software and onboard hardware. We aim to support all operators during the upgrade process.

That's why an upgrade is carefully planned and tailored to your needs. The diagram below illustrates the journey.



In the initial questionnaire & workshop, we discuss the following:

- Current project/fleet situation (hardware, software, architecture).
- Expectations after the upgrade. What additional functionality is expected? What is possible?
- Identification of technical and/or non-technical contingencies.
- Time frame.

After that, we submit a technical proposal and a budgetary quotation covering all CAPEX and OPEX aspects, followed by detailed project execution planning.

Typically, there are three possible scenarios:

1. Upgrading from an **existing Televic Rail solution.**
2. Upgrading from a **non-Televic Rail PIS.**
3. Bringing a **new installation on board.**

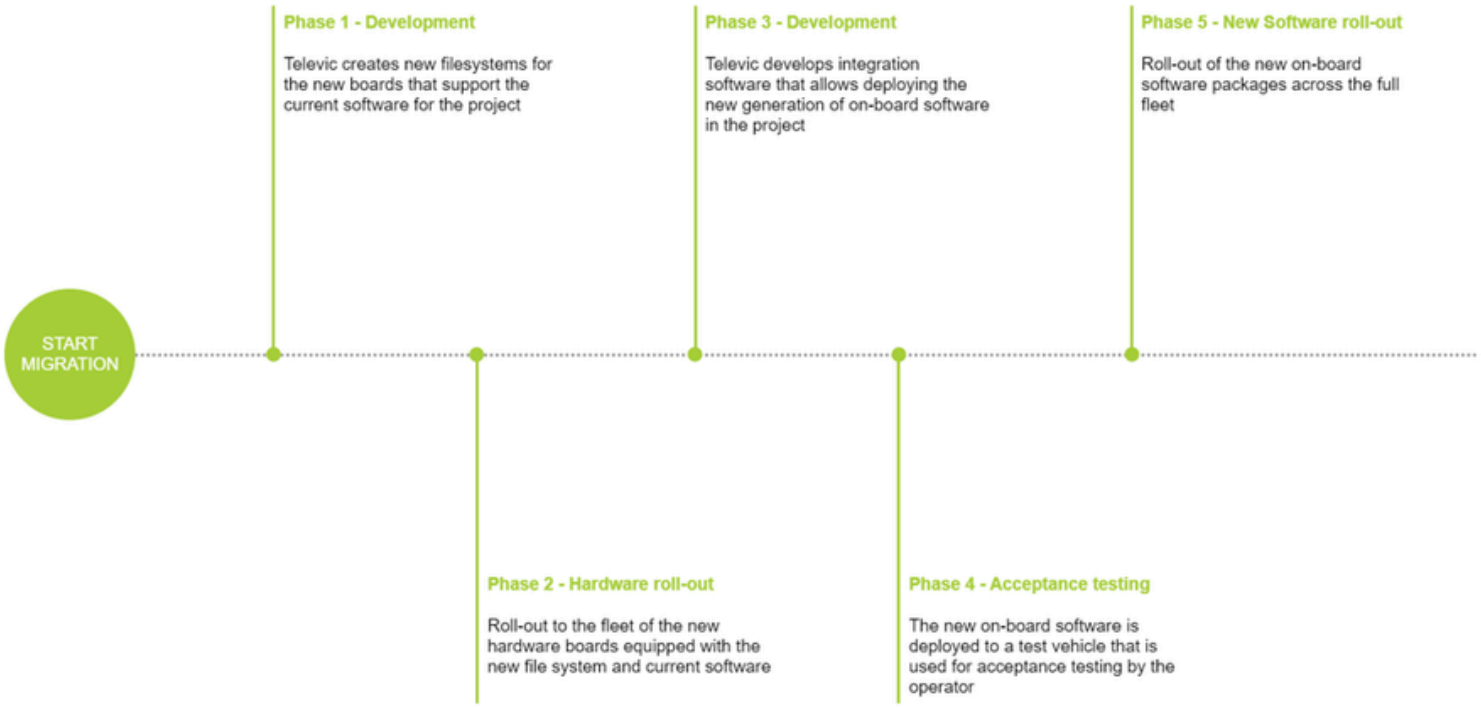
The different scenarios can look like this:

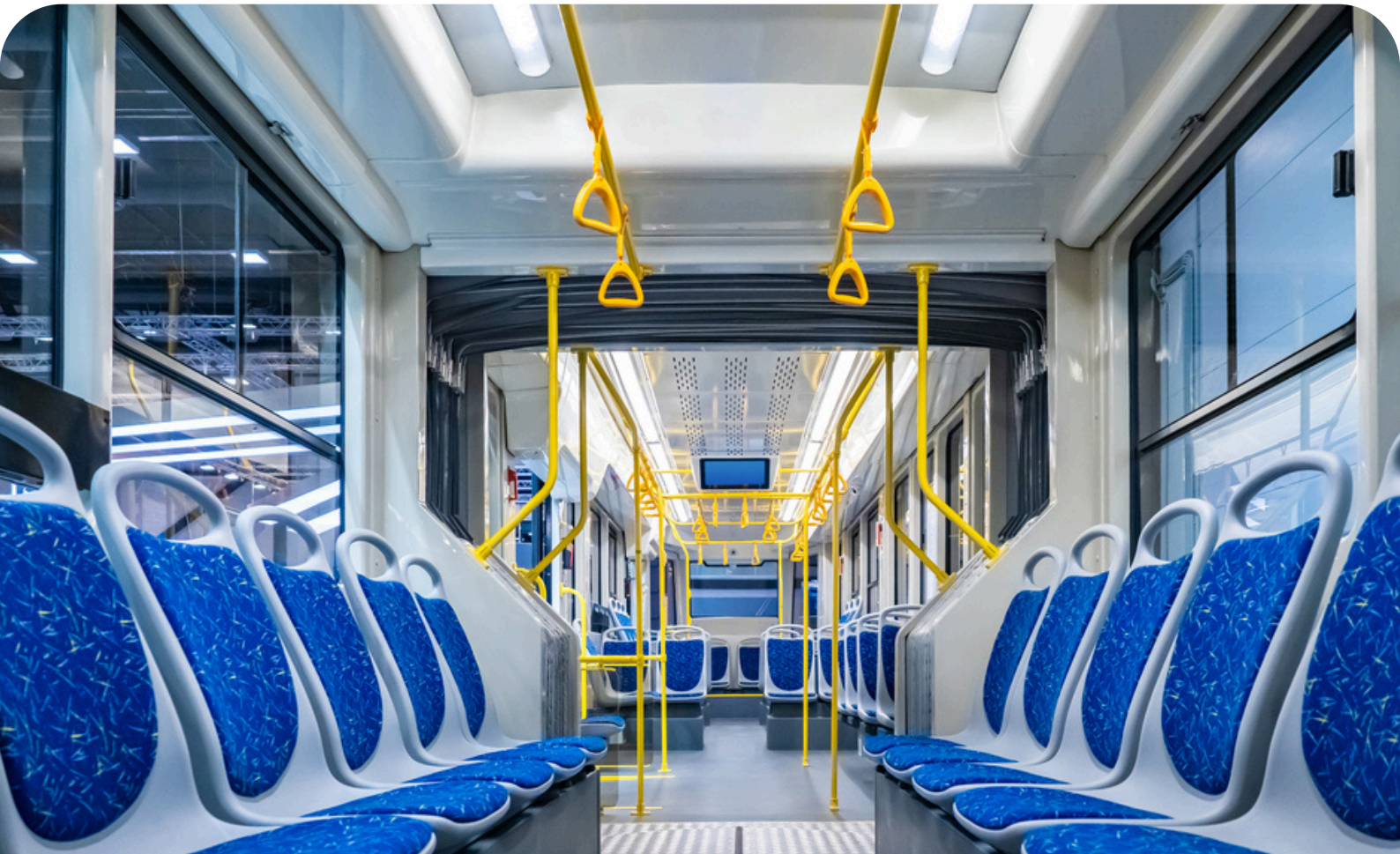
	Existing Televic Rail	**Non-Televic Rail PIS**	**No PIS, new installation**
PIS controller (hardware)	Optional upgrade	optional upgrade	installation of a new PIS controller
Displays (hardware)	Optional upgrade	Optional upgrade	Installation of new displays
Software	Software update	New software installation	New software installation
Database	Database transition	New database import	New database import

During the upgrade, Televic Rail aims to minimize downtime. For an existing Televic Rail solution, this is achieved with a two-step approach:

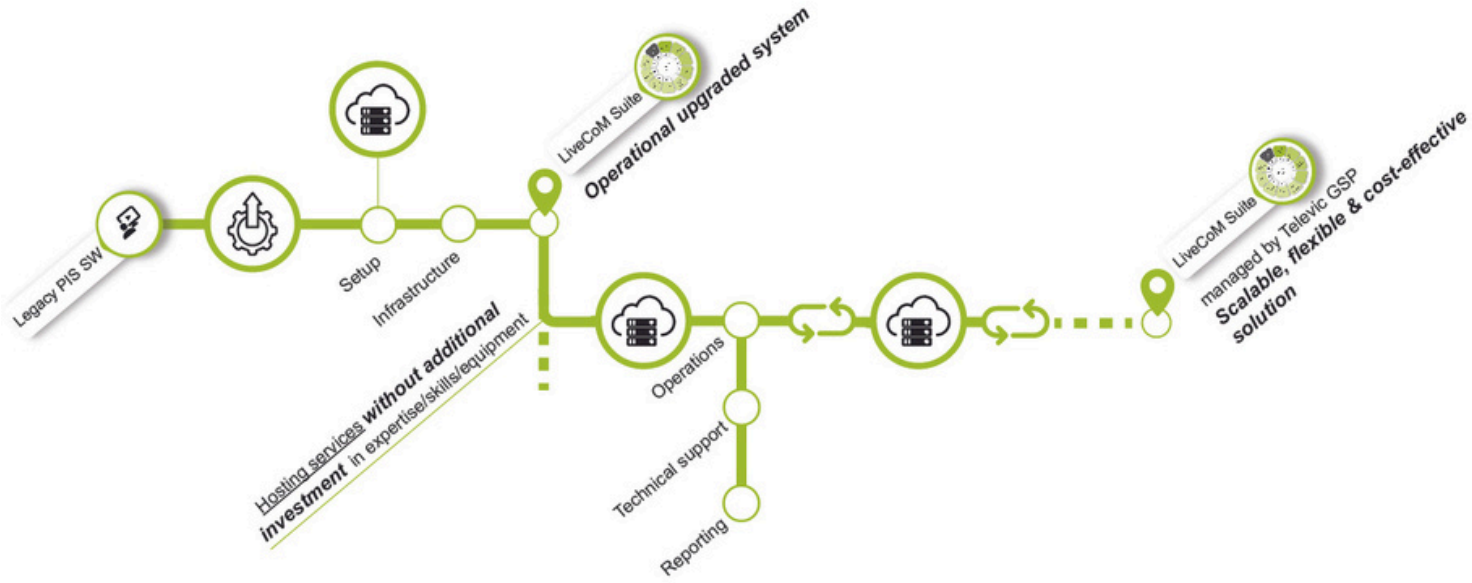
1. New hardware is installed and rolled out with the existing software solution.
2. The new software is rolled out on the entire fleet.

The diagram below presents a detailed overview:





4.2 Turnkey hosting

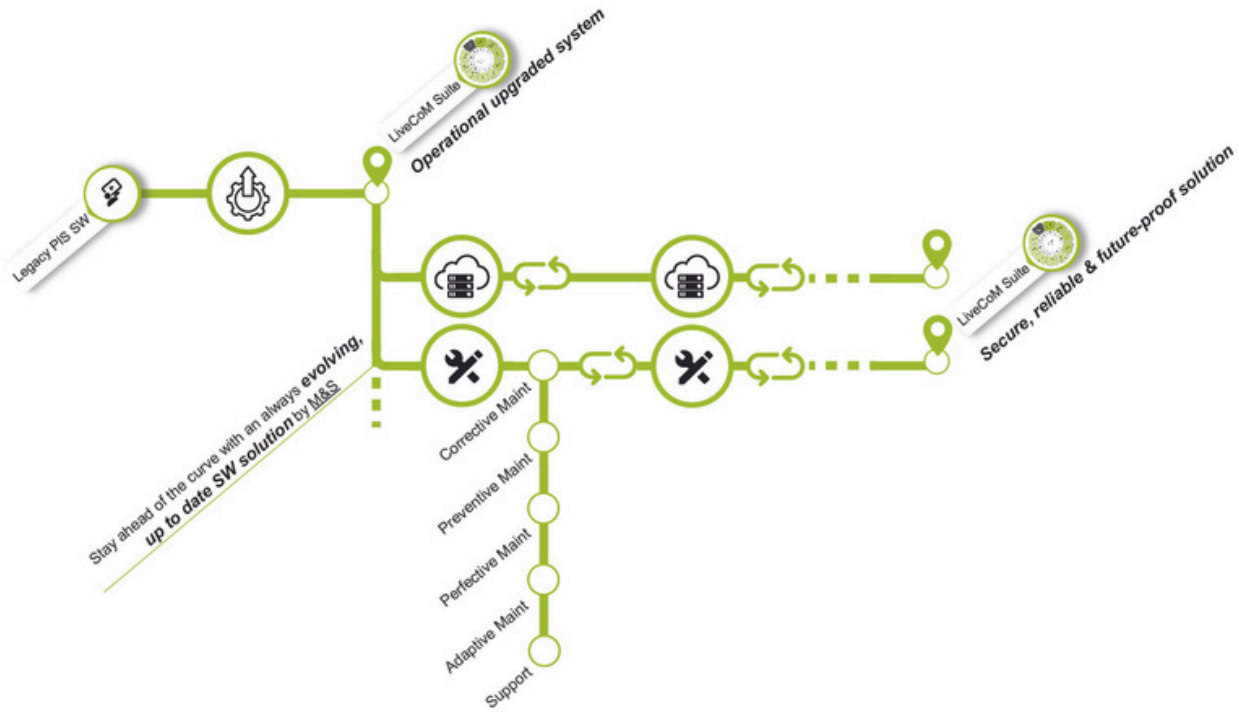


Hosting software presents several challenges to the end user. This is how we address these challenges as a service:

- **Setup:** we design and implement the infrastructure, setup monitoring, execute the configuration, etc.(infrastructure design, implementation, monitoring setup, configuration, etc.).
- **Infrastructure:** with the customer, we define where the applications are hosted in the cloud.
- **Operations:** we manage the operational aspects of the environment, including monitoring, patching, testing, backup & recovery, and ensure availability.
- **Technical support:** we handle incident response, change requests, and issue management.
- **Reporting:** we provide reports on the operational aspects such as availability and technical support performance.

Those are the benefits of our turnkey hosting solution. No additional investments in infrastructure, skills, expertise, and operations are required because **we convert ownership (CAPEX) into access (OPEX).** We always comply with local privacy regulations by offering hosting in different regions.

4.3 Software Maintenance and Support



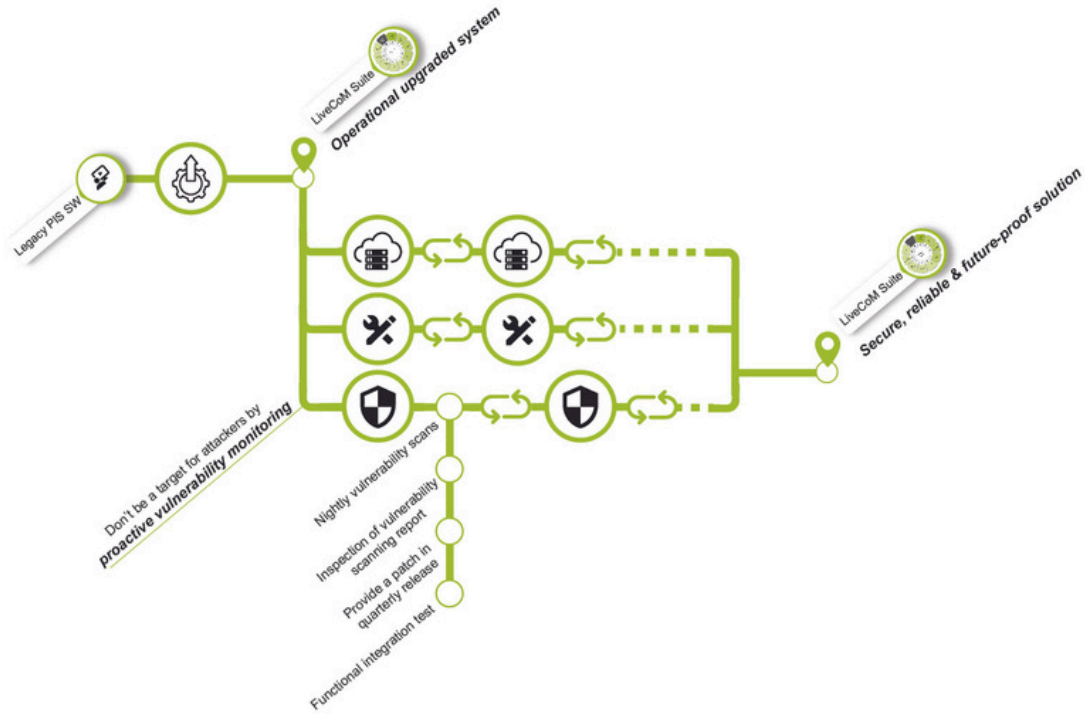
What is the most significant advantage of Software Services? The system is always up-to-date. Instead of a static solution, customers get a system that evolves constantly and is modernized throughout the lifetime of the Software Maintenance and Support Service. This has several advantages:

- **Adapting to different lifecycles** between software, electronics, and mechanics by letting the software solution evolve.
- **Fixing cybersecurity vulnerabilities proactively.** Enhanced protection against potential cyber attacks
- **Enhancing the life spa**n of the applications increases the return on the investments made.
- **Reducing the cost of fixing issues or adding new features** because the software is updated continuously.
- **Avoid obsolescence in software libraries** by proactively upgrading or swapping them.
- **Reducing the impact of issues and bugs** through proactive maintenance ensures the project's continuity.
- **Improving performance and usability** by including innovations (e.g., more efficient processing) in the software updates.

Support as a service means that Televic Rail provides a single point of contact for reporting bugs and issues, asking technical questions, and handling other requests. Maintenance as a service has four sections:

- **Corrective maintenance:** analyzing and resolving reproducible defects, reported as bugs to the Customer Support Service.
- **Preventive maintenance:** proactively monitoring software to detect and correct faults or cybersecurity vulnerabilities that may lead to issues in the future before they are reported as bugs.
- **Perfective maintenance:** incremental improvements to performance, maintainability, or other attributes, according to the roadmap.
- **Adaptive maintenance:** incremental changes to support changes to the environment in which the product solutions run, according to the roadmap.

4.4 Cybersecurity



Cybersecurity is a journey, not a destination. What is secure today may not be so tomorrow because threats evolve constantly. That is why our Cybersecurity Services aim to keep the system secure throughout its entire lifecycle.

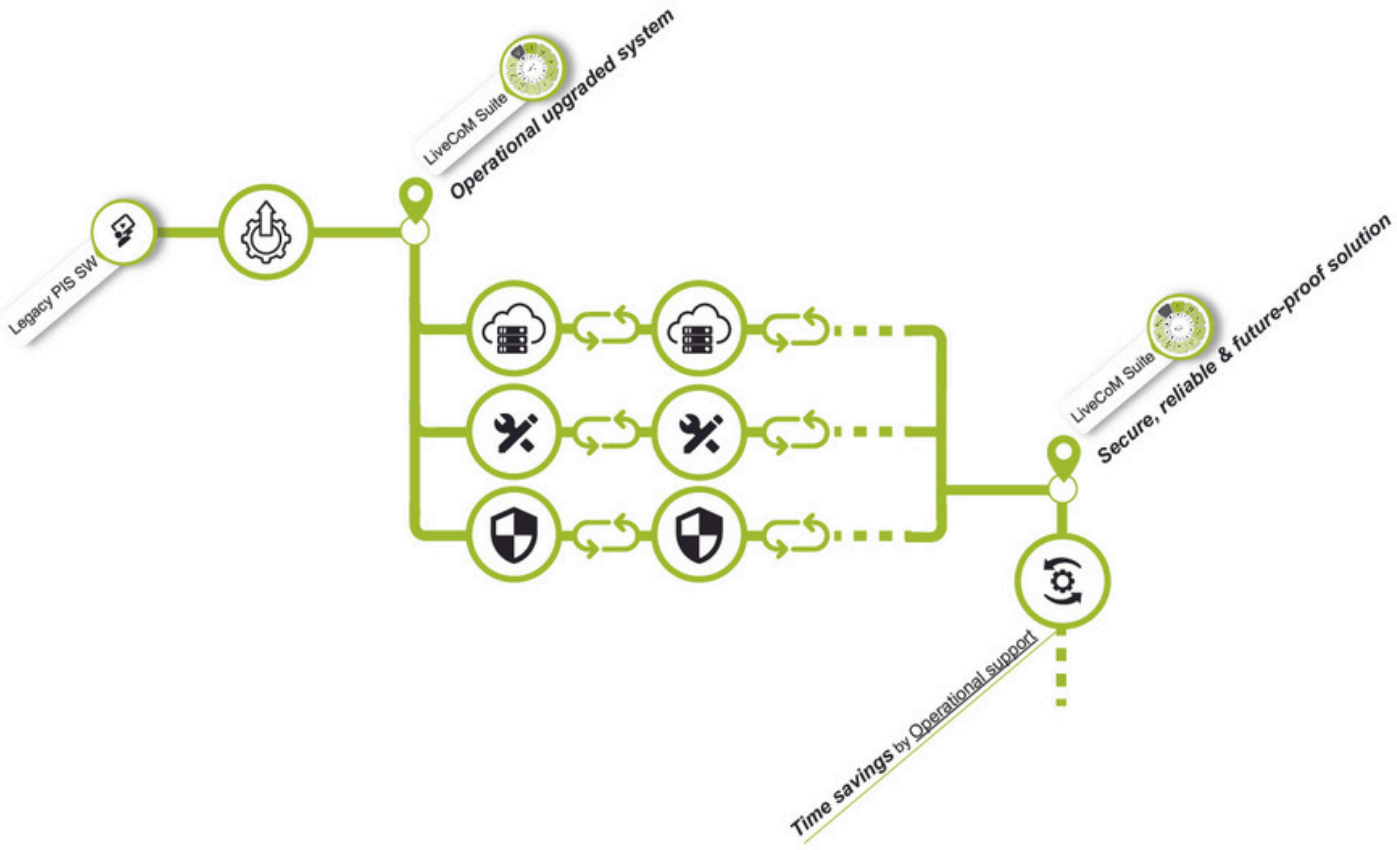
Our basic service offers proactive vulnerability monitoring and patching and can be extended with additional service-level agreement (SLA) parameters such as reaction time, priorities, scope, frequency, and more.

The basic service operates as follows: nightly vulnerability scans identify and characterize potential security vulnerabilities within the applications. If deemed necessary, we will develop and provide a patch that will be included in the quarterly releases of the Maintenance and Support service.

As part of the quarterly release process, we perform a fully functional integration test on the project scope to ensure no regression is introduced.



4.5 Operational Support and Training



Our Operational Support service is always tailored to your needs. We assess your specific support needs and train your employees to update their knowledge on the latest developments and added features. In summary: their expertise is enhanced continuously.



Part Five

Conclusion

We hope this white paper has made the journey to our latest cloud-based PIS platform more clearer. If you are not yet on the road to our LiveCoM Suite, we hope that we have triggered your interest.

Regardless of your current PIS, Televic Rail's support and guidance will take you to a new PIS software platform to experience today's enhanced, state-of-the-art features.

And it will keep on evolving during the lifetime of your fleet as part of our support services offering. The impact on the passenger experience cannot be overstated.

Using cloud-based services offers distinct advantages. It spreads the cost of changes over a longer lifetime and even reduces the high costs of maintaining a custom deployment. The need for cybersecurity and functionality upgrades will only grow in the future. Taking the service-based route now is the most cost-effective way to keep the user experience compliant to ensure the user experience keeps improving in the long run.

Book a demo to learn more about our LiveCoM Suite and associated services. We are happy to help.



Book demo now

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