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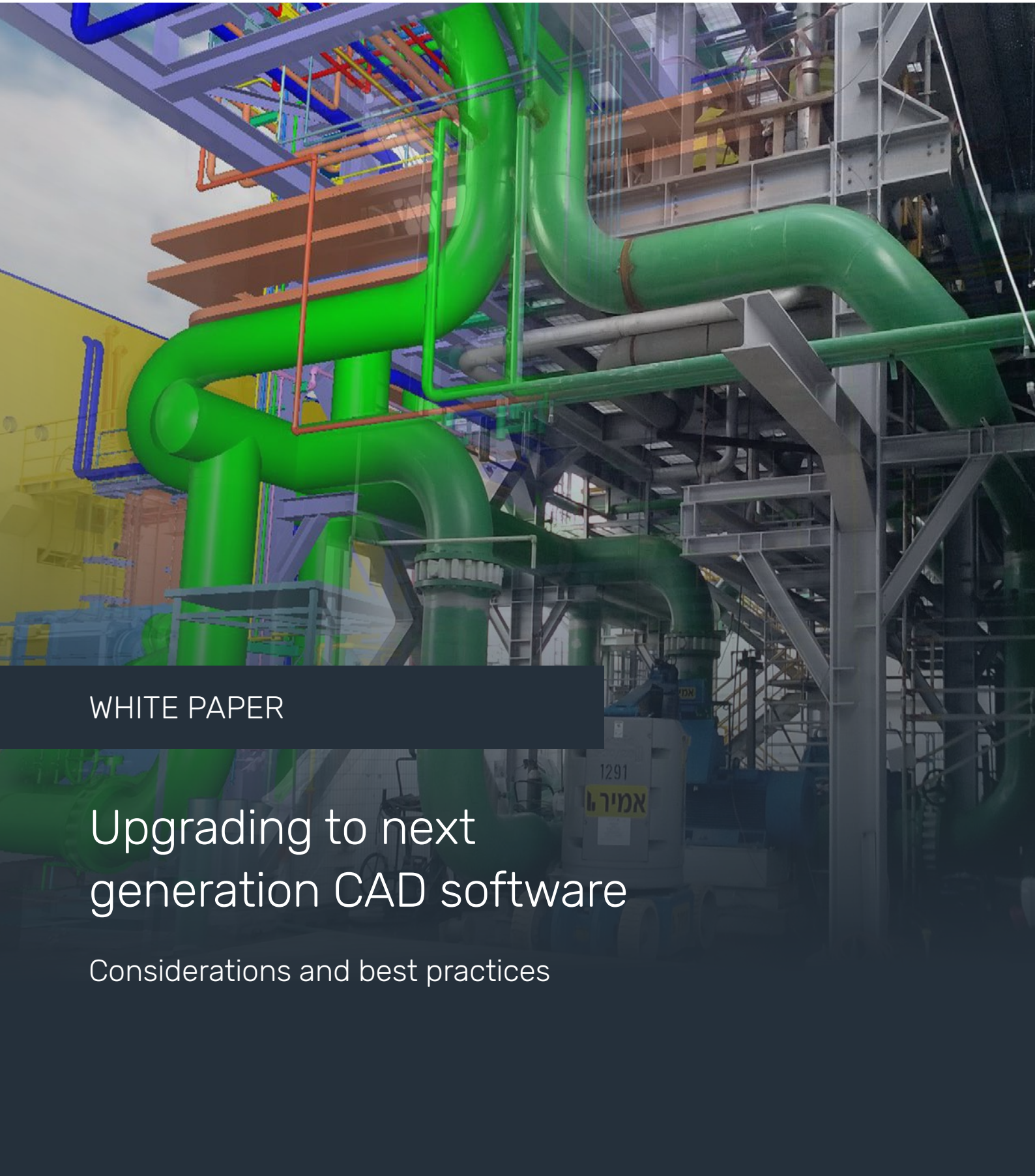


WHITE PAPER

Upgrading to next generation CAD software

Considerations and best practices

Contents

Introduction

Over recent decades, different design systems have become established solutions in industrial projects. During this period, EPC contractors have also invested vast resources to customize and adapt the systems to streamline their own businesses and improve their competitiveness. This period saw the rise of the one-solution-fits-all approach from many software vendors.

Many of these systems that have been in use for decades and have reached the end of their life cycles. Customers have been asked to transition to new systems from the same vendors or consider other options. At the same time, great advances in system interoperability mean that industrial companies are increasingly choosing to use combinations of different software that are best in class, as opposed to one-solution-fits-all solutions.

This white paper outlines the steps EPCs and engineering and consulting companies may take when upgrading from their current software to a next-generation solution such as Cadmatic. It covers the main considerations and best practices in how Cadmatic can be implemented after such a decision has been made.

Why are organizations changing their CAD software?

What is driving the shift to next-generation software systems in many EPC, engineering, and consulting companies? The following key factors are contributing to this shift:

Existing systems have reached the end of their life cycle

Design and engineering are changing – Vendor lock-in limits use of best-in-class solutions

Lack of resources to manage current solution administration

Interoperability, transparency, accessibility

Other reasons: performance, system limitations, vendor services, and customer experience, etc.

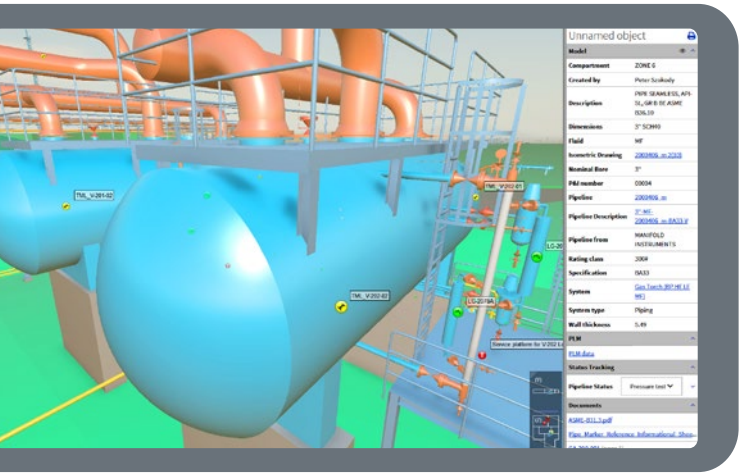
Existing design systems have reached the end of their life cycle

Existing systems have reached the end of their life cycle and the current supplier has announced the termination of software development and support for systems that may have been in use for over 20 years.

As a result, the current system no longer supports business development. Usually, the current supplier offers options to switch to other systems found in the product range. This is almost always more expensive than the current solution while not necessarily offering any significant improvement in functionality and performance beyond a new look and feel. The new system may also be offered on unfavorable or limiting contract terms.

In some cases, engineering managers may also feel that the current vendor is no longer focusing on developing tools for their specific needs but is, rather, focused on other areas of development.

A window of opportunity arises to change to next-generation software.



Design and engineering are changing – Vendor lock-in limits use of best-in-class solutions

In the 1990s and through the turn of the century, there was a period during which many design and engineering companies implemented so-called complete solutions: one solution to cover all design and engineering needs. The attractiveness of these solutions is their simplicity; everything you need from one vendor. The downside is that best-in-class solutions cannot be used, a compromise many companies are no longer prepared to make.

Greater openness in software development and improved interoperability in more recent times has shifted the pendulum back to the use of combinations of different software solutions that are the best for particular design phases or disciplines, rather than the one-solution-fits-all approach that preceded it.

This has placed a premium on software interoperability and how open software solutions truly are. Crucially, it has put a spotlight on system performance after importing data from other solutions and the scope and speed of export functions.

There is great variation on the market regarding design solution system performance after data has been imported from other design systems. In some design solutions, response times are slower, and some functions are tardy. In some cases, the software may freeze or crash due to incompatibilities between the systems. Post-import system performance has become the great new frontier of competition between software vendors.

Lack of resources to manage current solution administration

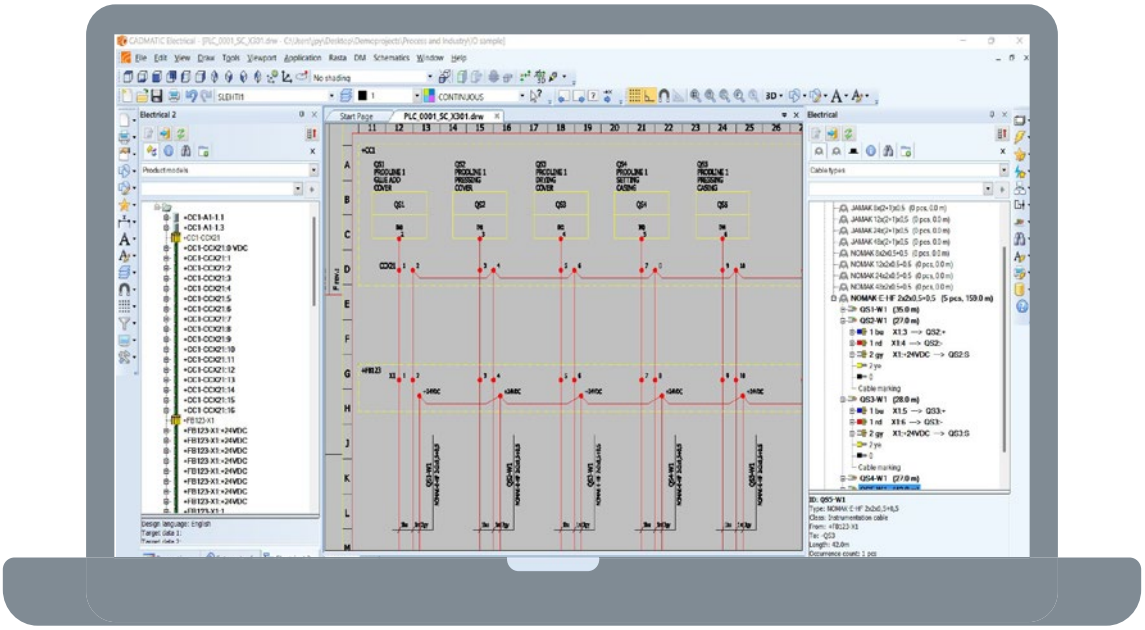
There may be a lack of resources to handle software administration in the organization. Due to the long history of using current technology, many related specialists are of an advanced age; many have retired or will be doing so soon. In short, organizations have lost or are losing their abilities to update their environments. Skills transfer to the younger generation has not taken place.

Interoperability, transparency, accessibility

New generation software enables access and transparency for all stakeholders, which improves the project quality. For example, issues that requires changes can be managed and communicated earlier which improves the quality, reduces risks, and improves the project bottom line.

Other reasons: performance, system limitations, system vendor services, and customer experience

There are several other reasons that may cause an organization to change its software vendor. There may be performance issues in particular design environments or limitations in what the system can do or what customizations can be made. Reasons may also include a lack of services from the vendor and the customer experience from the first contact through to life-cycle support and collaboration.



Taking the step up to next-generation software

Despite having compelling reasons to change from one design system to another, it remains no small matter. It commonly involves a large implementation project with many technical and change-related challenges. Working together with an experienced software vendor that can guide the customer in the process is invaluable.

In the following section, we look at some key considerations and best practices when changing from your current software vendor to Cadmatic.

Acquisition of new system and selection criteria

Current and future needs

When selecting a new design system, the first point of order is to identify whether the new system can at the very least perform all tasks that the current system can. It should be able to achieve, at the very least, the same result, and preferably a better one. Performing to the same level is non-negotiable and the minimum requirement. This relates not only to software functionality, but also customizations.

Organizations also pay attention to their future needs. This often relates to possible integrations they may require between the software and other systems. In the case of Cadmatic, integrations with Cadmatic's digital twin platform eShare are often scrutinized at this stage.

Organizations generally give equal weight to current and future needs when evaluating the suitability of a software vendor. They also find value in an agile and open partner that has a strong focus on integration with other systems and the belief that vendor lock-in is not advantageous for the customer in the long run.

Cost estimation and breakdown

One of most important aspects of any software implementation project is estimating the overall cost and creating a project budget.

The first relates to the period of evaluation, how long will it run and what licenses, resources and support will be required during this period. Evaluation projects are often small pilot or test projects, which if successful, make way for actual implementation projects.

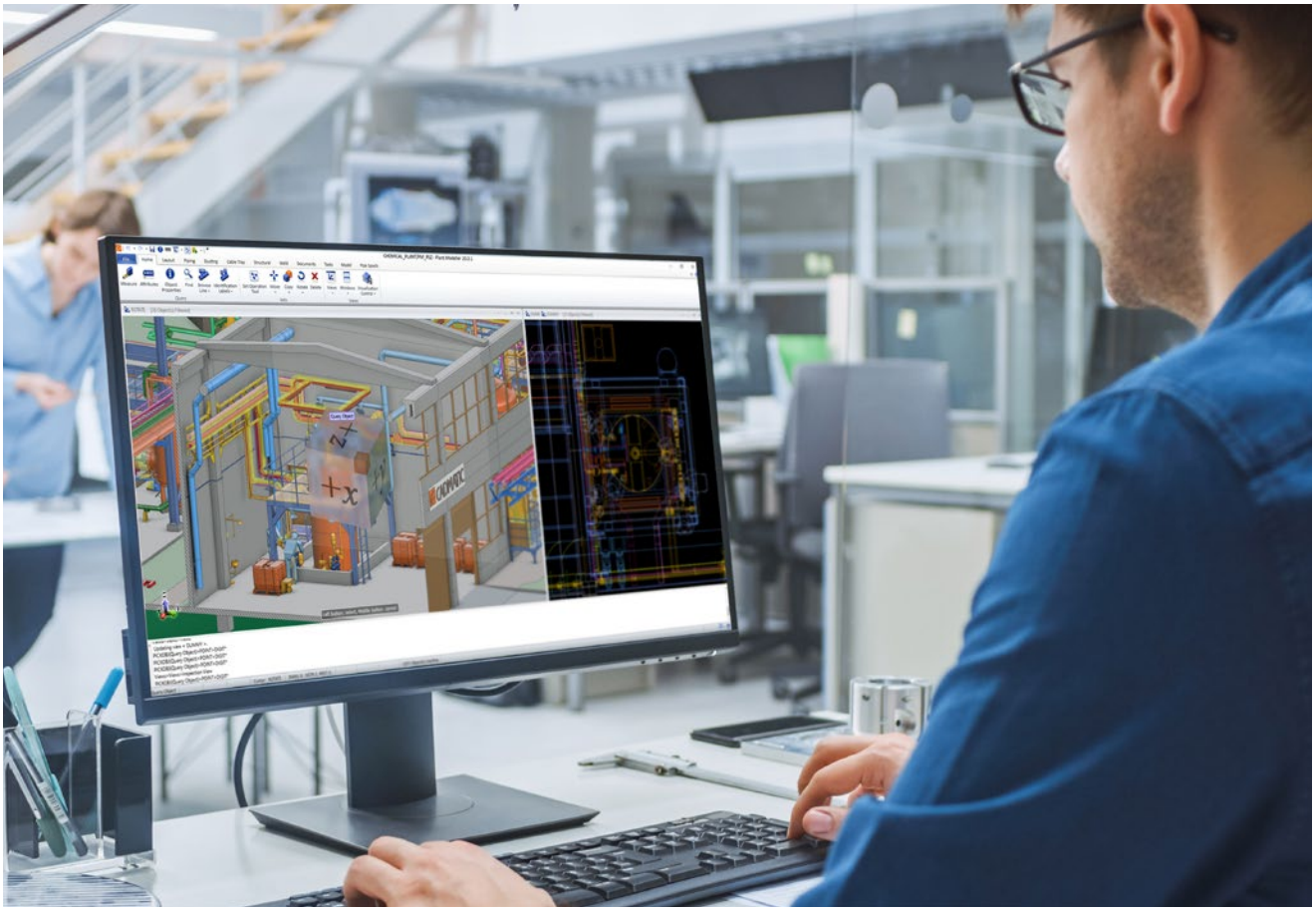
In the actual implementation project, the cost of software licensing and maintenance, support hours, and human resources plus time required needs to be factored in. Customizations are often needed and resources from the customer and vendor need to be allocated for this task. Customization tools such as API need to be made available.

Change management and human resources

One of the greatest challenges in implementing a new software solution is overcoming resistance to change.

It needs to be remembered that many of the old ways of working in an organization have been ingrained over decades in some cases. The persons involved are commonly conflicted: they know that the current way of working is not optimal and want to adopt next-generation software, but at the same time want to keep things as they were before, thereby sticking to old-fashioned ways of doing things. The design environments they have created are both a blessing and a curse.

Senior team leaders that are committed to the cause are critical in overcoming resistance to change. They need to be fully behind the intended changes and act as the driving force in getting all their colleagues onboard.



Implementation / transition project

Project method

For implementation projects, Cadmatic recommends a so-called direct implementation where Cadmatic is taken directly into use in an actual project. Ideally, it should be a smaller or mid-sized project.

Direct implementation is set apart from shadow implementation where Cadmatic is used in parallel to an actual project designed using their old system. The disadvantage of such a shadow or parallel implementation is that there is a lack of a real goal in the implementation project. It becomes less crucial to get every detail correct. Importantly, this kind of implementation will also mean that the best resources are not allocated to the implementation project, which will run in the background with junior staffing.

Direct implementation in a real project is by far the best choice. If desired, a somewhat less complex proposal project may be chosen for this purpose, which covers only basic design elements and not the most complex parts of an execution design project. Once a proposal project has been completed successfully, the customer can move on to an actual execution project.

The type of project implementation depends a lot on available resources and the risk evaluation. Cadmatic has strong experience in guiding customers to make the most optimal choices and supporting them throughout implementation.

Project plan and scheduling

A detailed project plan is drawn up in conjunction with the customer. The plan is adhered to with continuous progress monitoring. It is important that training be done as late as possible, ideally ending just before the actual implementation project is started. There is a tendency for training to take place too early, after which the gap between training and actual use is too large.

Ideally, the online training materials in the Cadmatic Academy should be used for self-training before face-to-face training with instructors is started. Practice has shown that this achieves the best results as designers have already gained some experience with the software and are able to hit the ground running.

The schedule must make room for any customizations and integrations that need to be finalized before or during the implementation project.

Deal with legacy data – transferring existing data from the old to new system

One of the thorniest issues to handle when changing software vendor is how to handle legacy data from previous projects. Is it worth converting all legacy data and, if not, what data should be converted?

There is a tendency to overestimate the need to convert all libraries and specifications from previous projects. Users understand that they need to change to new and modern ways of working and that some old ways of working need to be eliminated. At the same time, they easily gravitate to the option of converting a massive amount of legacy data, which in the end can mean not embracing more efficient working methods.

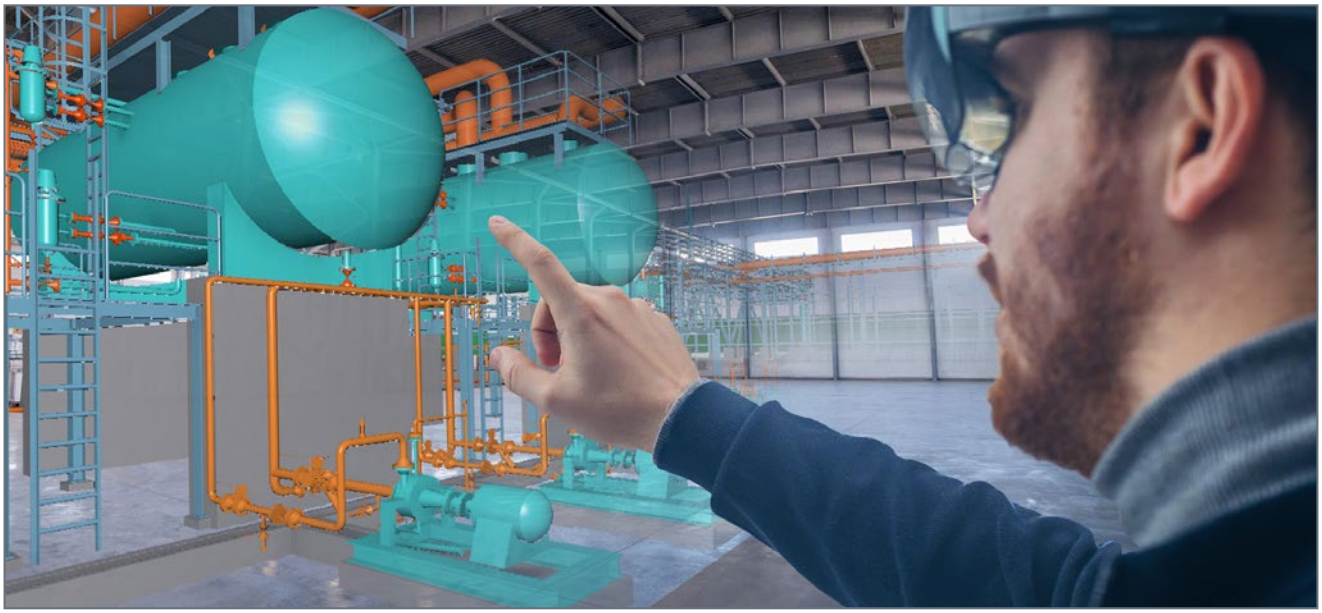
Cadmatic' strong recommendation is to only convert libraries and specifications that are required in the implementation project. Instead of converting a mass of other unnecessary elements, time should be invested in improving libraries and specifications

Conversion work is usually conducted by the customer with support from Cadmatic.

Resourcing

One of the most critical aspects of a new software evaluation and implementation project is proper resourcing. Practice has shown that personnel with overall design or engineering project responsibilities should not be assigned responsibilities for software evaluation and implementation. Dedicated resources are required for this task.

A detailed resourcing plan needs to be drawn up that outlines every task and the resources from the customer and new software vendor that will be allocated to the tasks.



Risk management

Every software implementation project carries risk. The greatest risk is that the direct implementation project recommended in section 2.3.1 cannot be completed as planned and the project fails.

Meticulous and detailed planning and monitoring is required to mitigate this risk. The software vendor support and development teams need to be on standby practically 24/7 to make changes quickly when requested and provide support when needed.

The software vendor needs to understand any possible issues that arise, respond quickly, and solve the issues as fast as possible. Most support is provided remotely, but if required, support staff from the vendor can also be on-site during the implementation project.

Support reports include detailed tasks that have been completed and the hours that were used.

Good cooperation between the software vendor support, development and the customer is crucial for successful implementation. Cadmatic has a long history of implementing such projects successfully.

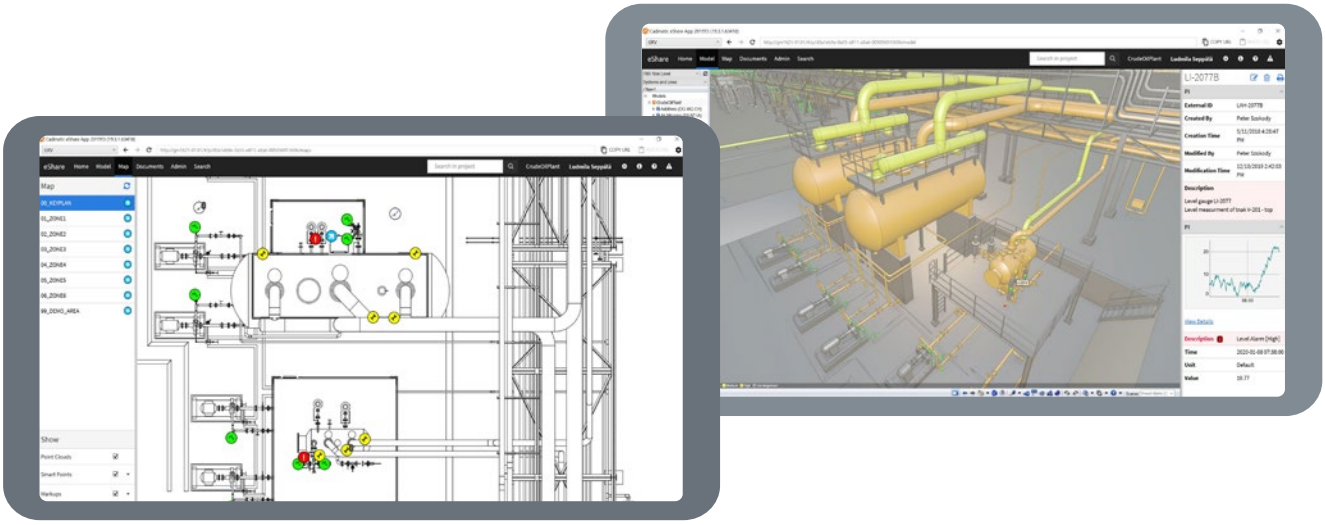
Measuring success

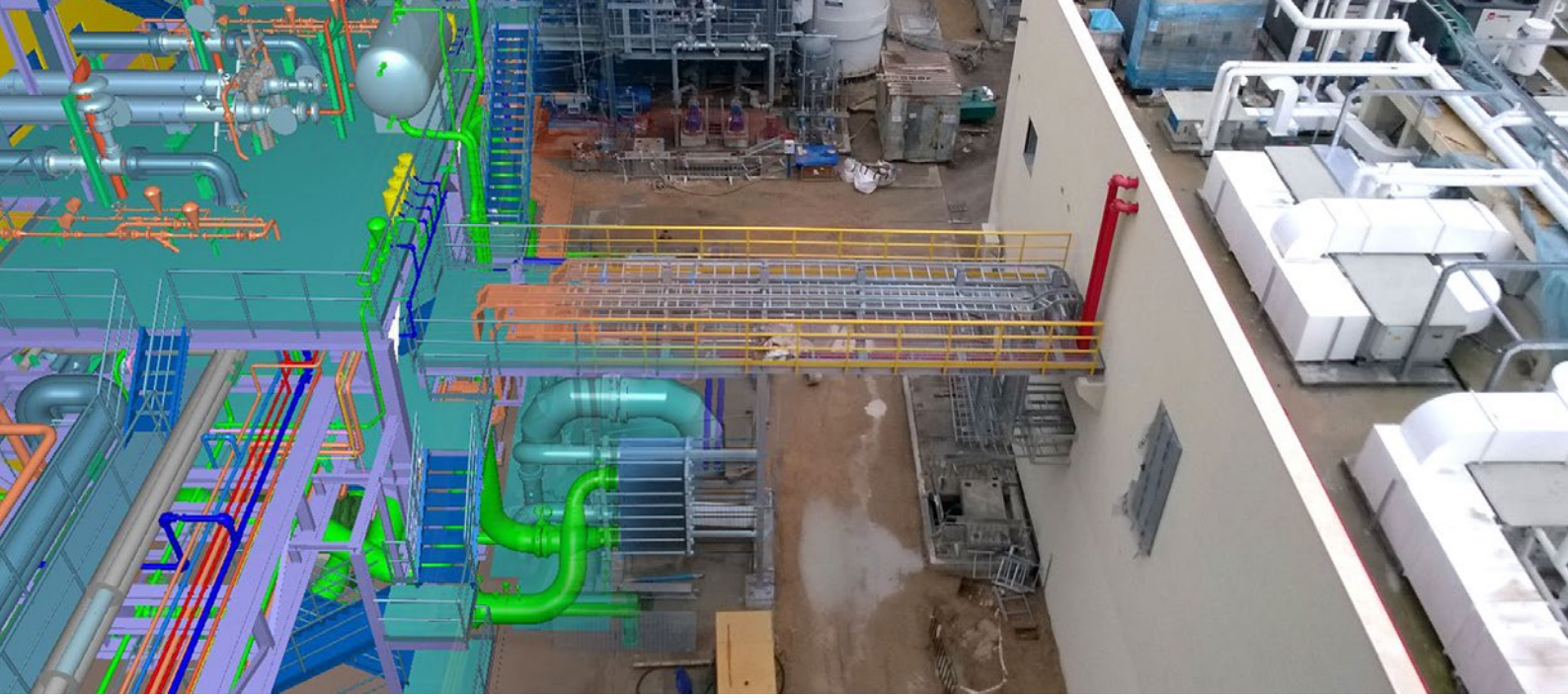
Measurement and monitoring are a continuous process in the implementation project to ensure that the tasks specified by the customer for the project are completed correctly and on time.

Detailed records are kept, for example, of how many specifications and projects have been converted and what document templates and links have been created. Follow-up meetings keep the project on track and if needed, corrective actions are taken when deviations are identified.

Overall success is measured by how successfully the implementation project is completed compared to preset KPIs.

Cadmatic is confident that it can handle any implantation project and guide organizations in the most optimal way to take to the leap to using next-generation design software.





Summary

Why change your CAD software provider:

- Current system has come to the end of its lifecycle
- Cost & performance issues
- Lock-in to one supplier

New system to be selected should

- Perform better and have “next generation” functionality available
- Have superior interoperability with other systems
- Flexible licensing terms

Direct Implementation

- With proper plan
- Sufficient resourcing
- Emphasizing change management
- KPIs to measure success

Cadmatic is a leading 3D design and information management software developer and supplier for the marine, process, energy and construction industries.

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