



TRANSFORMING ENGINEERING EXCELLENCE AT TITAN

Engineering and Automation Limited (TEAL) with Eplan

BACKGROUND

TITAN Engineering and Automation Limited (TEAL) - A TATA Group of Companies

TEAL's Automation Solutions empower businesses to streamline operations, enhance productivity, and achieve higher efficiency through advanced technologies. With deep expertise in industrial automation, robotics, and intelligent systems, TEAL delivers turnkey solutions tailored to diverse industries. From automated assembly lines to precision inspection systems, the solution reduces errors, improves speed, and ensures consistent quality. TEAL integrates cutting-edge hardware with smart software, enabling seamless scalability and digital transformation. With a strong focus on innovation, reliability, and customer success, TEAL stands as a trusted partner for organizations seeking to modernize processes and stay ahead in a competitive global marketplace.





THE CHALLENGE

As TEAL expanded its operations and product offerings, it encountered increasing complexity in managing its electrical, controls, and mechatronics engineering functions. Several critical challenges emerged:

- ✓ Lack of structured and standardized documentation
- ✓ Recurring errors in circuit design
- ✓ Inadequate project organization and design change management
- ✓ Limited collaboration between electrical design and Electrical assembly teams
- ✓ Time-consuming drafting processes for complex electrical circuits

These issues had the potential to affect project timelines, quality assurance, and overall scalability.

THE SOLUTION



EPLAN IMPLEMENTATION

To overcome these challenges, TEAL implemented Eplan solutions across its Controls, Electrical Design, Assembly, and Service divisions. Over the course of 15 years, TEAL adopted a suite of Eplan tools including **Eplan Electric P8**, **Eplan Pro Panel**, and **Eplan Harness ProD**, embedding these solutions at the core of its engineering processes. In 2022, TEAL transitioned to the **Eplan subscription model**, a strategic move that brought several operational advantages. The subscription approach enabled:

- ✓ Continuous access to the latest software versions, features, and security updates
- ✓ Greater flexibility and scalability to meet changing project demands
- ✓ Streamlined license management and cost predictability for budgeting
- ✓ Faster deployment of enhancements across teams without procurement delays

This shift empowered TEAL to stay aligned with industry best practices and rapidly evolving digital engineering standards.

KEY IMPROVEMENTS ACHIEVED

Structured Project Standardization

1 TEAL adopted **IEC 61355 documentation standards** and developed customized rules for device tagging, symbol usage, and cable color coding. This brought consistency to all engineering documentation, facilitating better internal coordination and client transparency.

Improved Design Readability and Efficiency

2 Color-coded AC/DC connections enhanced clarity, while PLC overview pages with cross-referencing improved navigability and reduced the number of circuit pages required.

Advanced Error Management

3 A custom error detection scheme was implemented to identify duplicate device tags, directional mismatches, and short circuit risks. This strengthened the quality assurance process and reduced rework during commissioning.

Macro-Based Design Reuse

4 With standardized macros and function templates, TEAL accelerated the drafting process. The design cycle for a single station was reduced from 12 days to just 3 days, significantly improving throughput.

Centralized Master Data with SQL Integration

5 A centralized SQL database enabled organization-wide access to up-to-date templates, reports, device models, and 3D assets. This streamlined reference workflows and improved interdepartmental consistency.

EPLAN PRO PANEL AND HARNESS PROD OPTIMIZATION



Transitioning to 3D-designed enclosures minimized the risk of missing components and improved overall panel accuracy.



Automated wire and cable routing reduced material waste and supported sustainability goals.



Harnesses were prepared offline during mechanical assembly stages, optimizing production flow and minimizing downtime.



A wide-angle, high-angle photograph of a large industrial manufacturing facility. The floor is filled with complex machinery, conveyor belts, and workstations. Several workers in safety gear are visible, moving through the aisles. The ceiling is high with exposed structural beams and lighting fixtures. The overall scene depicts a busy, large-scale production environment.

RESULTS

➤ **Enhanced Documentation and Compliance**

Standardized reports, structured drawings, and accurate bills of materials improved traceability, regulatory adherence, and project documentation quality.

➤ **Accelerated Project Timelines**

The reuse of standard components and automation of key design steps led to significant time savings in electrical design and panel layout, supporting faster project execution.

➤ **Improved Interdepartmental Collaboration**

The integration of Eplan tools across teams fostered greater coordination between engineering, assembly, and service units, leading to more seamless workflows and reduced friction.

CONCLUSION

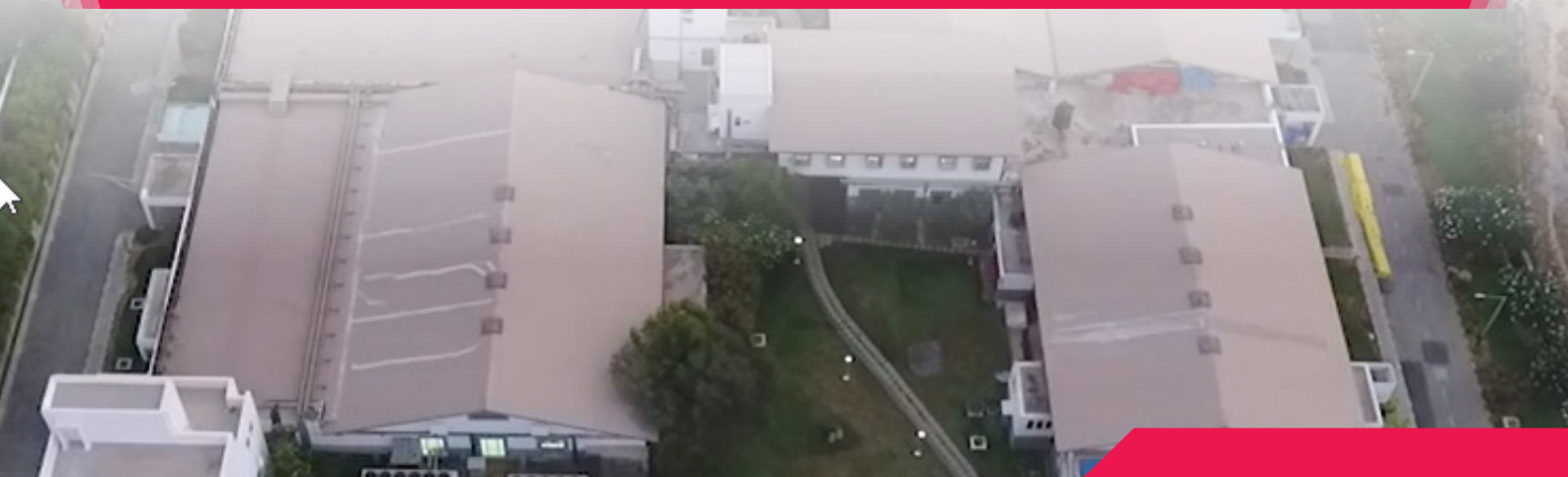
The long-term partnership between TEAL and Eplan has redefined the way TEAL approaches engineering design and automation. By leveraging Eplan's advanced capabilities and transitioning to a subscription-based model, TEAL has:

- ✓ Improved engineering productivity
- ✓ Reduced design errors and manual rework
- ✓ Standardized documentation across departments
- ✓ Accelerated project delivery timelines
- ✓ Enhanced collaboration between design and assembly teams

Today, TEAL stands as a benchmark in intelligent automation solutions—well-positioned to meet the demands of a fast-evolving industrial landscape while continuing its legacy of innovation, precision, and excellence.



For companies navigating the challenges of complex, large-scale automation projects, **Eplan offers a proven path to digital engineering transformation.** Embrace Eplan to drive innovation, streamline workflows, and achieve scalable success in today's competitive landscape.



With Eplan, we've moved from fragmented documentation to a structured, centralized environment. This has not only improved compliance but significantly enhanced collaboration across teams. For a typical project consisting of 100 IOs, we have observed approximately, Overall 74% time reduction and improved efficiency in our control design and documentation workflow.

Natarajan B

GROUP MANAGER, HEAD OF CONTROLS ENGINEERING DESIGN AND PROGRAMMING DEPARTMENT



Eplan has become integral to how we engineer and deliver solutions. The transition to a subscription model ensured we always operate with the latest tools, helping us stay ahead of industry demands.

Kavitha M

TEAM LEAD, CONTROLS ENGINEERING

The implementation of standardized macros and 3D panel design drastically reduced our design time—from 12 days to just 3. That's a game-changer for project throughput and efficiency.

Mayilvahanam S

ASSOCIATE GROUP MANAGER, HEAD OF CONTROLS ENGINEERING DESIGN



Contact Eplan for a consultation on how digital engineering can transform your project delivery.

Eplan Software Private Limited

5th Floor, Brigade Triumph, Dasarahalli Main Road,
Sector B, Hebbal Kempapura, Bengaluru – 560092
☎ +91-80-61079100 | 🌐 www.eplan.in

Ms. Pooja Narain ☎ +91 97311 57563 ✉ pooja.narain@eplan.in

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