



ALLIGATOR
Automations

SUCCESS STORY

AUTOMATED ENGINEERING: AI AS THE INNOVATION DRIVER

WS **CAD**

At a Glance:

Customer

- Alligator Automations India Pvt. Ltd., globally active engineering company with >500 employees
- Specialises in end-of-line packaging automation, robotic and palletising systems, intralogistics Conveyor Solution

Challenge

- Increasing project complexity, tighter deadlines, and demand for customised automation solutions challenged engineering efficiency
- Global projects required multilingual, standards-compliant documentation and precise electrical design despite a shortage of skilled engineers
- The previous electrical CAD tool was slow, outdated, and required manual work for wire numbering, device labeling, and BOM creation
- Lack of an up-to-date component library and limited automation capabilities caused inefficiencies and higher error risks

Solution

- Implementation of WSCAD as a central all-in-one electrical engineering platform
- Automated processes for schematics, cabinet design, bills of materials and documentation

Benefits

- Reduced engineering effort (e.g., wire numbering by >50%)
- Increased accuracy and faster project execution
- Enhanced efficiency, minimised errors, and simplified multilingual documentation quality and reduce installation risks

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The demands on industrial automation solutions are changing rapidly. Systems are becoming more customised, project timelines shorter, and international compliance requirements more complex. For globally active companies like Alligator Automations India Pvt. Ltd., electrical engineering has become a strategic lever.

Alligator Automations specialises in end-of-line packaging automation. Its portfolio includes automated packaging systems, robotic and conventional palletising systems, automatic loading systems, and intralogistics conveyor technology. With more than 500 employees, Alligator Automations executes projects from the design phase through development and manufacturing, all the way to installation, commissioning, and long-term support. Each system is individually tailored – considering layout, components used, production speeds, and local conditions such as safety requirements or labor availability. “The technical complexity of our projects is increasing, while customers expect shorter lead times and individualised solutions,” explains Sagar Bhavsar, Control Engineering Manager at Alligator Automations. Global safety and standards compliance, auditable multilingual documentation, and a shortage of skilled engineers add further challenges

Alligator Automations’s customers come from a wide range of industries, including Food & Beverages, Paint/Cement, Fertiliser & Petrochemicals, as well as Tyre & Agro Industry. They find their way to the company via trade fairs and international exhibitions, social media, search engines, marketing campaigns, and – most importantly –

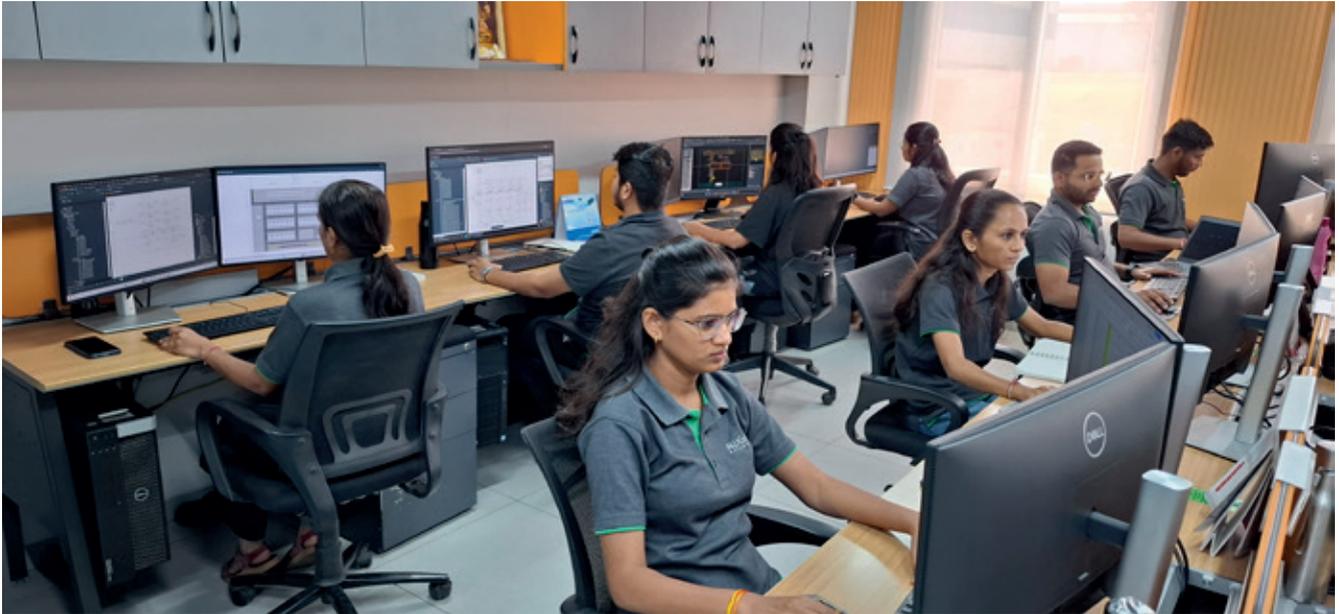
referrals from satisfied existing clients. Typical goals include boosting efficiency in existing and new plants, automating manual processes, increasing accuracy, and ensuring future-proof production structures. Projects start with capturing and analyzing technical and commercial requirements, followed by concept development and proposal preparation. After order confirmation, detailed design, programming, delivery, installation, and commissioning. Training, service, and long-term support ensure optimal system performance throughout the lifecycle.

Electrical Design: The Backbone of Automation Solutions

Alongside process engineering, mechanics, and kinematics, electrical engineering and automation play a central role in Alligator Automations’s industrial automation solutions. A ten-person electrical design team handles system electrical engineering tasks. Responsibilities range from power distribution and load management to motion control, robotics integration, circuit diagrams, cabinet layouts, bills of materials, material releases, and technical coordination with customers and suppliers. In a project-driven environment with high variant diversity, electrical CAD efficiency directly determines profitability and on-time delivery. For



Alligator Automations commissioning: Auditable documentation and global standards compliance as quality hallmarks.



Electrical designers at Alligator Automations rely on WSCAD's electrical CAD solution – central platform for all engineering disciplines. Dual-monitor setup lets the engineer view circuit diagrams and cabinet layouts side by side for greater efficiency.

“ Before implementing WSCAD ELECTRIX, we used an electrical CAD tool from another well-known vendor. It was slow, lacked new features, and did not have an up-to-date component library.”

its electrical design work, Alligator Automations relies on WSCAD's electrical CAD solution. Of the six available disciplines, Alligator uses Electrical Engineering and Cabinet Engineering. The platform also includes P&ID and Fluid Engineering, Building Automation, and Electrical Installation – all connected through a shared central database. Any component change is automatically updated across all drawings and disciplines, eliminating media disruptions. The free electrical CAD symbol and parts database, wscaduniverse.com, with more than 2.2 million component records in various formats, provides substantial added value.

From Manual Tasks to Automated Processes

“Before implementing WSCAD ELECTRIX, we used an electrical CAD tool from another well-known vendor. It was slow, lacked new features, and did

not have an up-to-date component library,” reports Sagar Bhavsar. Many tasks – such as wire numbering, device grouping and naming, or bill of materials creation had to be done manually. This dependency increased engineering effort, delayed projects, and raised the likelihood of errors. “After switching to WSCAD ELECTRIX, our engineering process has improved significantly,” Sagar continues. Today, most tasks are automated and far more efficient: manual effort drops, design accuracy rises, errors are minimised, and overall proj-

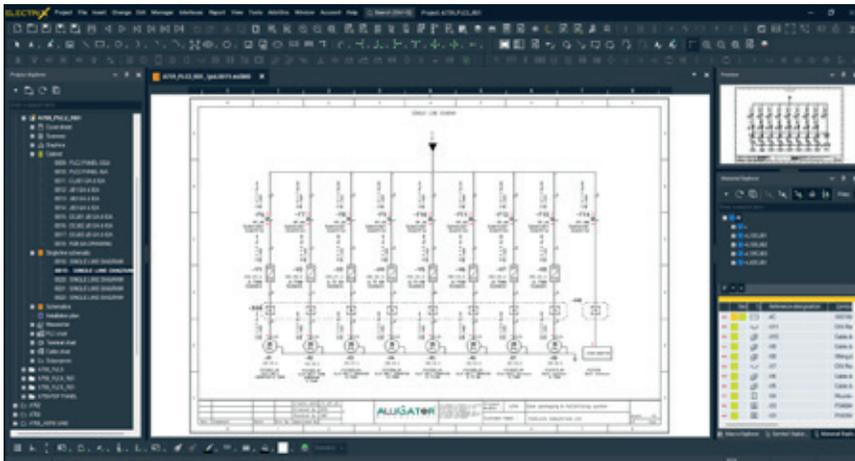
“ WSCAD includes everything out of the box, without additional license costs that other market tools often require.”

ect execution accelerates. A striking example: wire numbering alone cuts engineering effort by around 50 percent according to Sagar Bhavsar and significantly boosts overall efficiency.

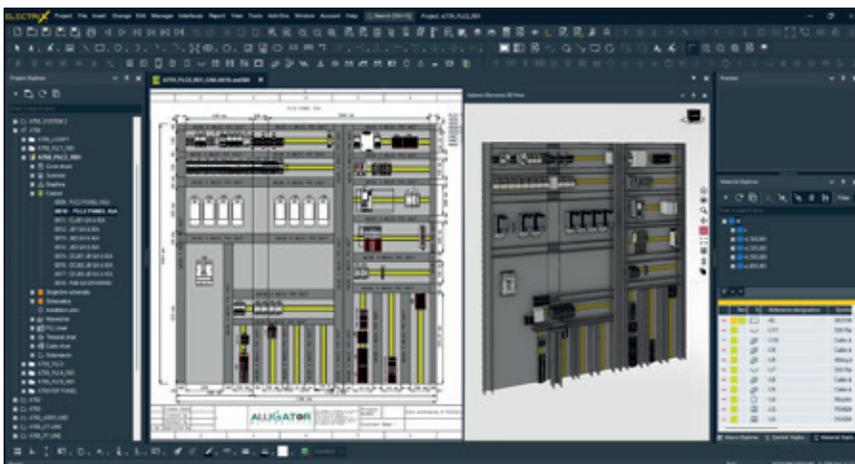
Precise Cabinet Design Without Media Breaks

In cabinet design, 2D and 3D layouts enable precise component placement accurate to a tenth of a millimetre. Collision checks, optimised wire routing, and intelligent component placement enhance design accuracy. “WSCAD includes everything out of the box, without additional license costs that other market tools often require,” says Bhavsar. WSCAD's wire routing tools can also calculate wire lengths automatically

and display the fill level of cable ducts to ensure optimal capacity usage. Using macros and macro variants accelerates repetitive tasks, allowing designers to quickly adapt layouts or switch



Circuit diagrams and schematics developed in WSCAD Electrical Engineering: Foundation for precise automation controls.



2D/3D cabinet layouts in WSCAD Cabinet Engineering: 0.1 mm precise placement, collision checking, wire routing.



Control cabinets designed in WSCAD and generated with AI at Alligator Automations: direct from digital design to in-house manufacturing and testing.

between component configurations – for example, changing a 25A feed to a 63A variant is immediately propagated to all schematics and drawings with just a few clicks. Moreover, the data generated in WSCAD can be transferred directly to wire harness and cabinet manufacturing systems or NC machines from leading vendors. This eliminates media breaks and removes the need for separate mechanical CAD software to control drilling or milling machines – saving time, reducing errors, and improving overall quality.

AI-Driven Efficiency Boost

Project documentation and reporting are generated automatically at the push of a button – fully compliant, complete, and multilingual. The integration of AI in WSCAD ELECTRIX AI provides a substantial productivity boost. It supports automated verification processes, speeds up design steps, and simplifies documentation. Particularly for international projects, the AI-assisted translation function is highly valuable: technical content can be translated automatically into the desired language via simple text command while maintaining proper industry terminology. Tasks that once required external translation agencies and took hours or days now complete in minutes. In the ‘AI Knowledge’ area, company-specific documents like customer guidelines, manufacturer approvals, or terminal labeling standards rules can be stored. A quick text command triggers the AI Copilot to retrieve and provide context-relevant information within seconds. Time-consuming folder or PDF searches are history.

Strong Usability and Digital Continuity

Alligator Automations users praise WSCAD’s user interface as clear, modern, and intuitive. It’s easy to understand, features a short learning curve, and enables rapid layout changes – an critical factor in dynamic project environments. Beyond technical capabilities, Alligator Automations highlights the excellent price-performance ratio and support. “Com-

pared to other electrical CAD systems, WSCAD stands out with a highly competitive pricing structure paired with top performance,” says Sagar Bhavsar. “Post-purchase support is excellent, the support team is very helpful and responds quickly.”

After project completion, electrical diagrams and documentation serve as a basis for troubleshooting, modifications, upgrades, and long-term service. The included Cabinet AR app lets field technicians scan components on-site using smartphones or tablets for instant access to project-specific documents, 3D views of components, and original manufacturer datasheets. Changes are documented via redlining and fed back to engi-

neering – keeping the digital twin always up-to-date.

AI as a Transformative Force for the Future

According to Sagar Bhavsar, AI integration represents not a short-term trend but structural change. “At Alligator Automations, we believe AI will play a transformative role in electrical engineering and industrial automation.” AI systems evolve into intelligent engineering assistants supporting error detection, design validation, component selection, while identifying optimisation potential based on past projects. “We see a future where AI further reduces our lead times, in-

creases accuracy, and frees our engineers from repetitive tasks,” says Sagar Bhavsar. This creates room for innovation, system optimisation, and strategic development of automation solutions.

For Alligator Automations India, the electrical CAD platform is more than a design tool – it’s a cornerstone of digital engineering strategy. In a market environment characterised by growing customisation and time pressure, electrical design efficiency becomes the decisive competitive factor. “At Alligator Automations, we do everything to enhance our engineering capabilities and thereby boost efficiency and productivity for our global customers through smarter automation solutions,” Sagar Bhavsar concludes.



With 500+ employees worldwide, Alligator Automations develops, manufactures, and installs highly specialised end-of-line packaging solutions in India for international customers from industry and logistics.

WSCAD is the world’s first provider of AI-powered electrical CAD software and has specialised in electrical design solutions for over 35 years. On a seamless platform with a centralised database, WSCAD unites six disciplines – from electrical engineering and cabinet design to building automation. AI features boost efficiency, enable automation, and make complex tasks accessible even to less experienced users.

More than 40,000 users in over 100 countries rely on WSCAD for machinery and plant engineering, building automation, and installation technology. Apps such as Cabinet AR or Building AR provide digital support for electrical design and service processes. The electrical CAD data library, wscaduniverse.com, offers over 2.2 million free parts data records.

The portfolio is rounded off by eleven specialised services – ranging from engineering checkups and training to format conversion. WSCAD is part of the Buhl Corporate Group.

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