
AUTOMATION JOURNAL 2025

Fuel Station Automation in Coastal Nigeria
(Warri & Delta State Focus)

Transforming Fuel Retail through Innovation, Compliance, and Smart Control

This journal presents a comprehensive guide to the automation of petrol filling stations, tailored to the unique needs and environmental realities of Nigeria's coastal regions - particularly Warri and the broader Delta State. It showcases cutting-edge technologies, industry insights, real-world success stories, and actionable strategies for station owners, investors, and stakeholders who are ready to embrace the future.

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Geographic Scope: Warri, Delta State & Southern Nigeria

Chairman's Editorial

By AUC. Thompson Douglas - Executive Group Chairman, Tom Chess T Group of Companies Ltd

It is with a deep sense of purpose and commitment that I welcome you to this special publication - a journal dedicated to the future of petrol station operations in Nigeria, with particular focus on the vibrant and evolving fuel retail landscape of Warri and the greater Delta region.

At Tom Chess T Group of Companies Ltd, we have always believed that innovation and integrity must go hand-in-hand. As a company rooted in engineering excellence and guided by the principle of Building Perfection, we recognize that the sustainability of any fuel retail business today hinges on embracing automation—not as an option, but as a necessity.

In Warri and across other coastal cities, the challenges faced by petrol station operators are unique. Environmental conditions, compliance pressure, and the financial risks of manual operations demand a smarter approach. That is why this journal is not just a technical guide - it is a strategic roadmap tailored for station owners, investors, and industry stakeholders who want to future-proof their operations.

Through the insights, real-life case studies, and carefully curated content in this publication, we hope to raise awareness, inspire informed decisions, and contribute meaningfully to the modernization of the downstream petroleum sector in Nigeria.

Tom Chess T Group is proud to be among the few companies actively deploying practical automation solutions in this terrain. Our systems are not only robust and regulatory-aligned, but are designed with real business needs in mind - reducing losses, enhancing efficiency, and providing full visibility of your station's performance.

As you go through this journal, I encourage you to reflect on the opportunities ahead and take bold steps toward unlocking greater value through technology.

Thank you for trusting us. We remain your partner in transformation.

Warm regards,

For: **TOM CHESS T GROUP OF COMPANIES LIMITED**



AUC. THOMPSON O.S. DOUGLAS FIMC, ARPM, MCPN, MNCS, MCAI, MISPO, MITAN,
Executive Group Chairman/CEO

Section 1: **Introduction & Scope**

***"Building Perfection" in Fuel Station Operations across Warri and the Coastal South"

Introduction

In today's rapidly evolving downstream oil and gas landscape, *automation* has become an indispensable tool for competitive and compliant operations. Across Nigeria - and especially in coastal regions like Warri, Delta State - filling stations are facing growing challenges: tightening regulatory enforcement, rampant product loss due to manual processes, unreliable stock data, and high overhead from poorly tracked staff activities.

Tom Chess T Group of Companies Ltd, a premier construction and technology solutions provider, is rising to meet this challenge. Guided by our corporate tagline, "Building Perfection," we deliver reliable, innovative, affordable, and premium automation solutions that transform petrol station management into a seamless, data-driven experience.

Journal Purpose

This journal has been developed as a practical guide and strategic document aimed at:

1. Educating fuel station owners in Warri and Delta State on the necessity and benefits of automation;
 2. Demonstrating how Tom Chess T Group of Companies Ltd provides cutting-edge solutions;
 3. Showcasing automation as both a response to losses and regulatory pressure, and a powerful tool for growth, control, and expansion;
 4. Encouraging adoption by major oil marketers, independent operators, regulatory stakeholders, and potential investors;
 5. Documenting best practices for deployment, maintenance, and long-term automation success in the coastal downstream ecosystem.
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Who Should Read This Journal?

This publication is crafted with the following audiences in mind:

- ✚ Independent petrol station operators across Warri and beyond;
 - ✚ Major downstream marketers looking to modernize coastal operations;
 - ✚ Financiers and investment firms seeking to fund scalable and technology-driven station models;
 - ✚ Regulatory agencies and compliance monitors looking for insight into automated controls that ensure fair dispensing and transparent inventory management.
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Scope of Coverage

This journal goes beyond just fuel dispensing automation. It explores a comprehensive automation ecosystem, including:

- ✚ Automated fuel pumps and tank gauging systems;
 - ✚ Integration of forecourt and convenience store systems for unified reporting;
 - ✚ Remote monitoring technologies suited to multi-branch operators in Delta and nearby coastal states;
 - ✚ Tools for payroll and staff management, helping owners reduce human error and internal fraud;
 - ✚ LPG dispensing automation, a growing niche for mixed-product stations in Warri;
 - ✚ The broader implications of compliance with NMDPRA enforcement trends, especially for filling stations previously penalized for under-dispensing or unlicensed operations.
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Section 2: **Industry Context in Coastal Nigeria (Warri Focus)**

2.1 Local Industry Dynamics

Warri's petrol station landscape is a mix of independent outlets and branded operations under major marketers. However, most stations remain manually operated, lacking modern automation. These stations are spread across key urban corridors - refinery belt zones, expressway junctions, and port-access roads - reflecting both high fuel demand and operational risk.

2.2 Petroleum Product Sourcing

Local supply is primarily from Warri depot and tank farms, supplemented by deliveries from Lagos depots. Occasionally, product is tapped from Dangote Refinery, subject to availability. While generally dependable, these sources still face occasional delays or quality inconsistencies, which heighten inventory uncertainty in manual monitoring systems.

2.3 Environmental & Infrastructure Challenges

Warri's coastal climate and geography present several operational challenges:

- ✚ High humidity and coastal corrosion that wear on mechanical and digital equipment.
 - ✚ Frequent flooding due to swelling rainfall and poor drainage - studies show increasing trends in coastal rainfall intensity.
 - ✚ Power supply fluctuations and outages, common across Delta State.
 - ✚ Unreliable mobile/internet networks, complicating remote or cloud-based automation.
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2.4 Regulatory Pressure & Enforcement

NMDPRA has escalated its surveillance in Warri:

- ✚ In December 2024, eight stations were sealed for issues including under-dispensing, expired licensing, and poor safety conditions.
- ✚ In mid-2025, two additional Warri stations were shut for "fraudulent activities" such as meter tampering and licensing breaches.

These actions underscore growing enforcement for accurate dispensing, compliance, and safety.

2.5 Operational Pain Points

Common issues faced by Warri stations include:

- A. Theft or manipulation of pump meters by attendants.
- B. Poor shift accountability and inconsistent reporting.

- C. Difficulty reconciling daily sales with actual stock levels.
- D. Extended downtime during tank refills due to manual logging or delays.

These challenges create significant revenue leakage and undermine customer trust.

2.6 Modernization Status & Competitive Context

Despite operational pressures, less than 20% of stations in Warri have adopted automation - leaving the majority manual. This low penetration signals an urgent opportunity for automation providers like Tom Chess T Group, positioning you as a key innovator in the region.

Moreover, Warri's fuel station market is becoming saturated, with new outlets emerging rapidly. In this climate, early adopters of automation will command a competitive advantage, differentiating on compliance, reliability, and operational efficiency.

2.7 Strategic Summary: The Case for Automation

Warri embodies a high-growth zone - bolstered by refinery revival - and a compliance-risk zone, exposed to regulatory scrutiny and systemic inefficiencies. Automation addresses both:

- ✚ Protects revenue by preventing meter manipulation and theft.
- ✚ Ensures compliance through automated dispensing accuracy, license tracking, and safety records.
- ✚ Safeguards operations against environmental fragility—including flooding, corrosion, power and network issues—through remote monitoring and alerts.

For station owners facing intense market saturation and regulatory pressure, automation isn't just an upgrade - it's an essential survival strategy.

3. Core Automation Components

3.1 Automated Fuel Dispensers & Forecourt Controllers

Tom Chess T Group integrates Veeder-Root-certified fuel dispensers with advanced forecourt controllers. These act as the operational hub, managing transactions, controlling pumps, and ensuring accurate dispensing levels.

- ✚ Forecourt controllers (like DOMS PSS 5000 equivalents) support multiple pump protocols and offer embedded connectivity - enabling real-time control and remote diagnostics
 - ✚ They record every litre dispensed, flag anomalies, and feed data into the onsite system or cloud.
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3.2 Automatic Tank Gauging (ATG)

We deploy Veeder-Root TLS-series ATGs (e.g., TLS4/TLS450PLUS) to provide accurate, real-time monitoring of tank levels, water ingress, and leak detection.

- Probes monitor fuel and water strata, pushing live alerts and stock data to the central system or remote dashboard.
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3.3 Point-of-Sale & Back-Office Software

Using Epump's POS and back-office software, Tom Chess offers:

- ✚ Unified transaction management across pumps, C-store, and LPG.
 - ✚ Real-time price updates via mobile/desktop
 - ✚ Payroll, inventory, loyalty module for bulk/custom customers.
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3.4 Security & Access Control

We integrate Hikvision CCTV, RFID/fingerprint-based staff access control, and security logs. This enhances accountability and deters internal & external fraud.

3.5 Remote Monitoring Dashboard

Our hybrid cloud/local-server architecture allows station owners to:

- ✚ View live tank levels, pump activities, and transactions
- ✚ Receive alerts (e.g., low stock, dispenser faults, power outages)
- ✚ Remotely change prices or authorize shifts

The system supports hybrid deployments—switching between offline (local) and online mode as needed.

3.6 Generator & Power Monitoring

With delta-sourced grid instability, we embed generator and power performance monitors - capturing runtime, load, and fuel consumption, feeding into the central dashboard to reduce overdrawn or misuse.

3.7 Inventory & Pricing Management

Our system ensures synchronized pricing across pumps, loyalty cards, and store items. Staff modules automate payroll and attendance tracking, reducing manual errors and internal fraud risks.

3.8 LPG Dispensing Integration

Modular add-ons integrate LPG pumps into the automated ecosystem - using the same FCC and POS, enabling unified reporting with fuel products.

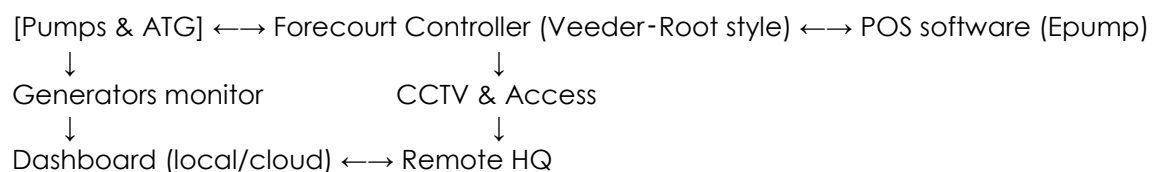
3.9 Compliance & Standards

All hardware complies with NMDPRA/DPR regulations and ISO/OIML international standards:

- Dispensers certified for accurate metering and sealed meters
 - ATGs meeting leak detection and probe certification criteria
 - POS systems aligned with regulatory reporting standards
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3.10 Integration & Communication

Here's how components interact:



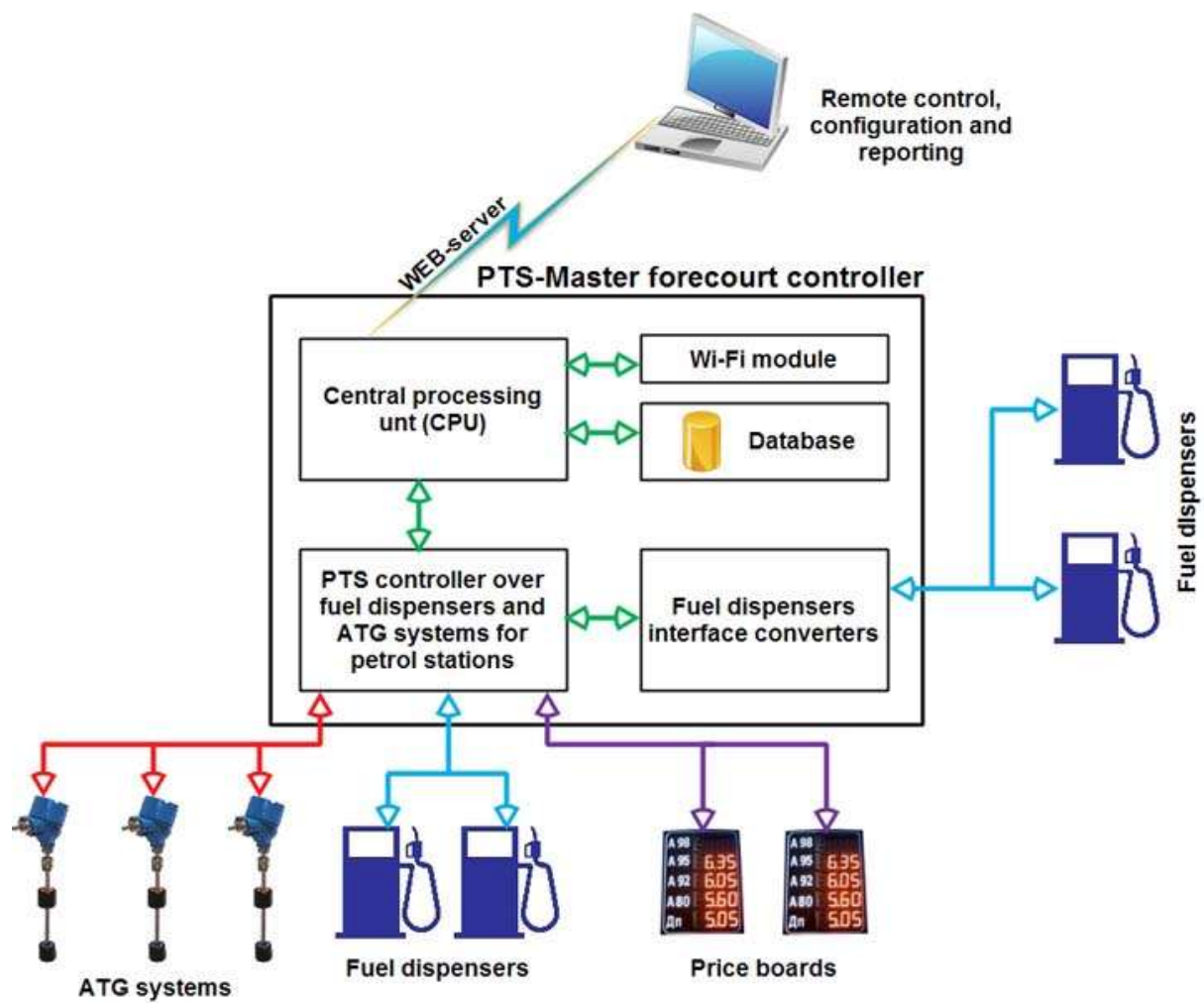
- ✚ Forecourt controller handles protocol conversions and real-time data aggregation
 - ✚ Data flows live to POS/db; backups stored locally and pushed to HQ/cloud via secure channels.
-

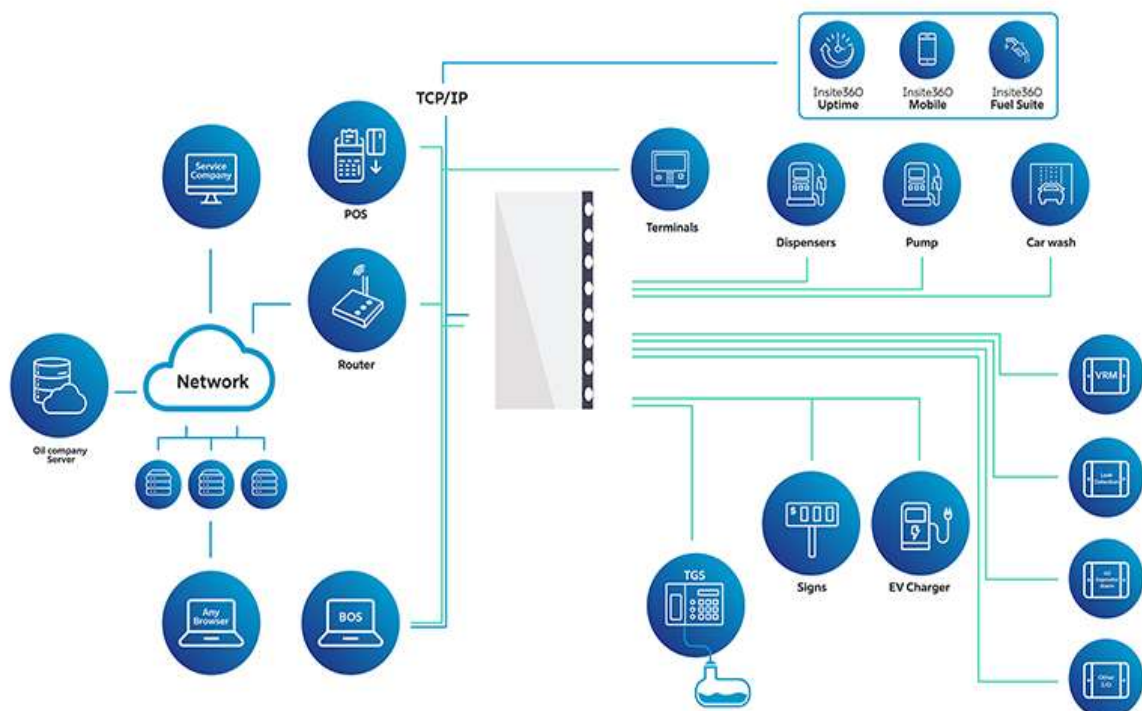
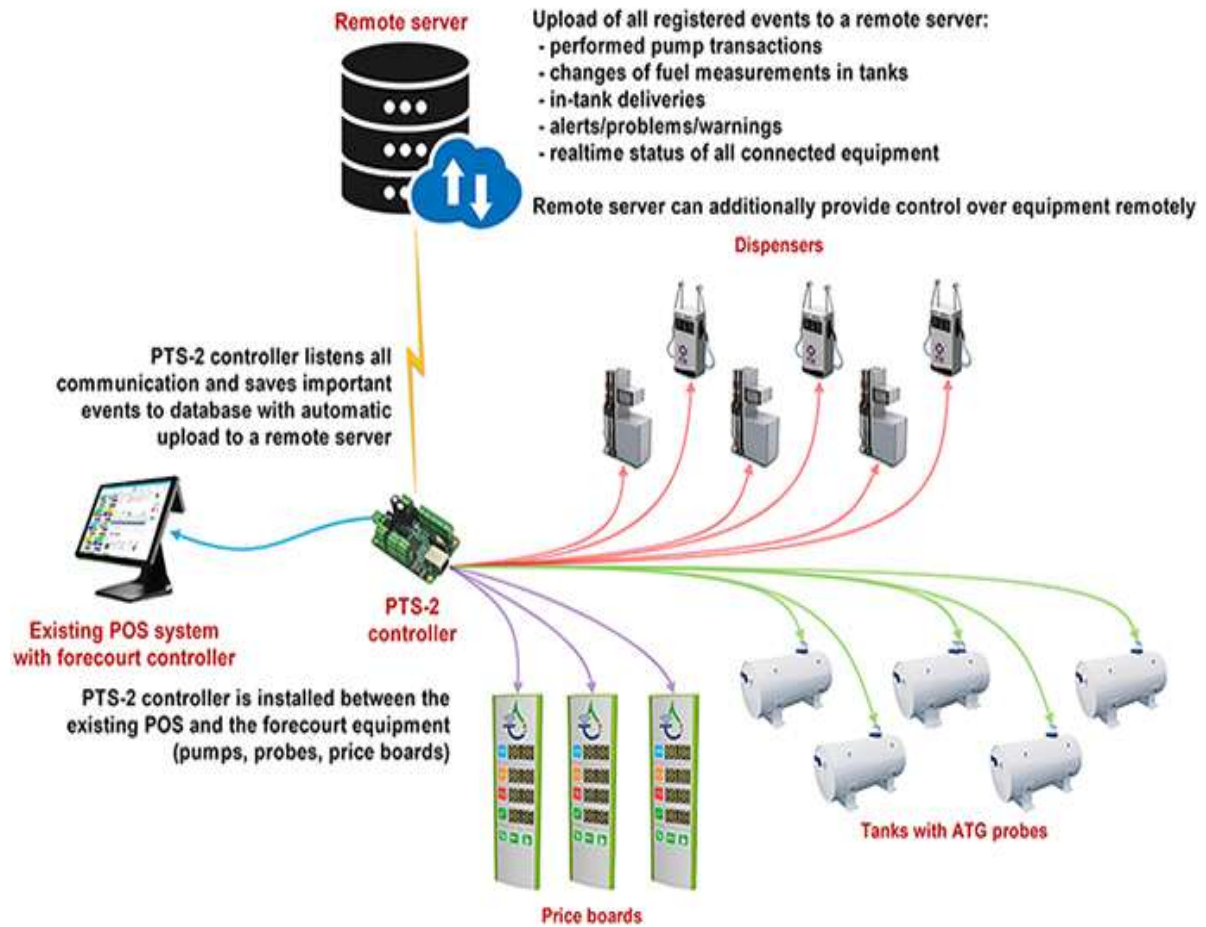
Unique Selling Points (USPs)

- ✚ Full local technical support and fast installation
- ✚ Modular & affordable, tailored for Warri's scale

- ✚ Hybrid setup (offline + cloud) ideal for unreliable networks
- ✚ Equipment rated for coastal corrosion and humidity
- ✚ Partnerships with Epump, Veeder-Root, Hikvision for credibility and support

3.11 Visual Block Diagram





Section 4: **Key Solution Providers in Nigeria's Petrol Station Automation Landscape**

4.1 Overview of the Nigerian Automation Space

The Nigerian petroleum retail sector is steadily shifting toward full automation as regulatory oversight tightens and station owners increasingly seek efficiency, transparency, and loss control. This shift is being driven by the presence of established automation solution providers, both local and international, delivering systems ranging from fuel dispenser integration to cloud-based monitoring and POS software.

The most widely recognized names in the industry include brands with extensive footprints across Nigeria, offering scalable systems that automate dispensing, tank monitoring, inventory management, and customer relationship operations. While each has its area of strength - be it innovation, affordability, or system flexibility - they collectively form the growing automation backbone supporting stations nationwide.

4.2 The Tom Chess T Advantage

In this evolving landscape, Tom Chess T Group of Companies Ltd stands out as a reliable indigenous systems integrator offering end-to-end automation solutions with a deep understanding of Nigeria's operating environment - especially in challenging coastal zones like Warri and other parts of Delta State.

Backed by trusted technology partners, Tom Chess T Group delivers solutions that:

- ✚ Combine affordability with durability;
- ✚ Offer fast deployment timelines;
- ✚ Ensure local after-sales support and hands-on training;
- ✚ Address coastal-specific environmental realities like high humidity, corrosion, and power instability.

By drawing from a mix of globally recognized brands and locally adapted systems, the company provides its clients with modular and scalable automation packages that align with both regulatory expectations and real-world conditions on the ground.

4.3 Real-World Implementation: Efezino Petro Station

One of Tom Chess T Group's automation success stories is the deployment at Efezino Petro Station, located along the Ughelli-Patani Expressway in Delta State. This site is an example of practical automation deployment in a semi-coastal terrain, serving high-volume customers while integrating smart dispensing systems, real-time inventory control, and a secure monitoring interface - all tailored to the needs of the client and terrain.

4.4 A Smart Choice for Warri and the Coastal South

Choosing an automation provider is more than just selecting equipment - it's about selecting a partner who understands your environment, your staff, your customers, and your regulatory responsibilities.

For fuel station owners operating in Warri and other parts of Delta State, Tom Chess T Group offers:

- ✚ Simplified rollout and tailored integration, regardless of existing site infrastructure;
 - ✚ Certified and standards-compliant systems sourced through reputable partners;
 - ✚ A proven track record of understanding and addressing operational pain points unique to the region.
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In a market where automation is no longer optional, working with a provider that combines global-standard systems with local know-how is essential. Tom Chess T Group of Companies Ltd brings this balance - quietly but effectively - to the service of forward-thinking petrol station operators across Nigeria's southern corridor.

Section 5: **Implementation Process & Timelines**

At Tom Chess T Group of Companies Ltd, our automation implementation approach is designed to be seamless, professional, and client-friendly, ensuring minimal disruption to your operations while delivering maximum efficiency.

5.1 Step-by-Step Rollout Process

Our end-to-end process follows a clear, structured path:

1. **Site Survey and Assessment:** Our technical team conducts a thorough inspection of the station layout, equipment status, and infrastructure needs.
 2. **Client Briefing and Equipment Recommendation:** Based on our findings, we present the most suitable automation configuration, tailored to your station's operations, budget, and expansion plans.
 3. **Proposal Submission & Quotation:** A detailed proposal is shared, outlining the solution scope, specifications, and investment estimate.
 4. **Procurement of Equipment:** Once approved, we source the required components through our trusted supply network - ensuring compatibility, compliance, and reliability.
 5. **System Installation:** Our engineers install the core automation systems - Automatic Tank Gauges (ATG), Point-of-Sale (POS), Forecourt Controllers (FCC), CCTV, and access control.
 6. **Software Configuration & Integration:** All software modules are configured and integrated to allow real-time communication across tanks, dispensers, and management dashboards.
 7. **Staff Training and Onboarding:** We train your pump attendants, cashiers, supervisors, and managers - ensuring everyone understands their role in the new digital workflow.
 8. **Test Run and Commissioning:** A complete simulation is run to validate equipment function, data flow, and reporting accuracy.
 9. **Handover and Go-Live:** With systems stable and staff equipped, we officially commission the automation and hand over for live operation.
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5.2 Timeline and Flexibility

While timelines can vary depending on the scope and readiness of the site, most automation installations proceed smoothly and without delays. Certain factors - such as environmental conditions, infrastructure upgrades, or approvals - can affect the speed of deployment. Our approach remains adaptable, and we aim to deliver within realistic timelines while maintaining quality and safety.

5.3 Hassle-Free Preparation

To make things easy for our clients, Tom Chess T Group handles all technical pre-installation preparations. Whether it's laying concrete for ATG probes, setting up network links, or stabilizing power sources, we manage these aspects professionally—ensuring you don't have to worry about the fine print.

5.4 Training and Operational Readiness

We provide both hands-on and remote training to all relevant staff categories, including managers, cashiers, and attendants. Our training covers daily operations, troubleshooting, report generation, and system security. Each client also receives clear user documentation to support on-going use and reduce reliance on support calls.

5.5 Post-Commissioning Support

Tom Chess T Group doesn't disappear after installation. We monitor the site for a short period after go-live to ensure a smooth transition and optimal performance. Where needed, post-installation adjustments and technical fine-tuning are carried out swiftly - reinforcing our commitment to long-term value and support.

By following this trusted implementation roadmap, we ensure your automation project is not only successful—but also easy to adopt, efficient to operate, and sustainable over time.

Section 6: **Return on Investment (ROI) & Business Benefits**

Investing in automation is not just a technological upgrade - it's a strategic business decision that unlocks new levels of control, efficiency, and profitability. For stations operating in high-risk and fast-moving environments like Warri and across Delta State, the benefits of automation are both practical and financial.

6.1 Reducing Losses, Preserving Profit

Fuel station operators have long grappled with issues like:

- ✚ Unrecorded sales by pump attendants
- ✚ Inaccurate manual stock-taking
- ✚ Fuel diversion and internal theft

Tom Chess T Group's automation systems - built with smart metering, real-time transaction logs, and access control - quietly eliminate the common loopholes that cause financial leakage. While exact figures vary from one location to another, clients have consistently reported noticeable improvement in stock accountability and sales reconciliation after automation.

6.2 Driving Efficiency across the Board

Gone are the days of paper logs and end-of-day guesswork. Our integrated systems empower fuel station managers to:

- ✚ Automatically reconcile sales and stock in minutes
- ✚ Monitor every dispenser from a centralized dashboard
- ✚ Update pump prices instantly—even from a remote location

Real-time insights are now available on mobile devices, allowing managers and owners to:

"See sales across every pump—live—on their phone,"

And

"Verify shift handovers with just three clicks."

These process gains translate directly into more informed decision-making and faster response to issues.

6.3 Revenue Uplift and Customer Confidence

With accurate dispensing, digital recordkeeping, and secure payment integration, automated stations in Warri project a more professional image - which naturally inspires customer trust. In fact, some clients have observed that automation not only stopped leakages but also led to an uptick in daily sales, as customers returned more confidently and regularly.

6.4 Compliance without Penalties

Today's regulatory environment demands more than good intentions. With active enforcement from agencies like the Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA), automation now plays a vital role in:

- ✚ Ensuring audit-ready reports and digital trails
- ✚ Guaranteeing meter accuracy and tamper-proof transactions
- ✚ Avoiding costly shutdowns due to expired licenses or under-dispensing penalties

Stations with automated systems are better positioned to stay compliant and open for business.

6.5 Smart Oversight from Anywhere

Automation from Tom Chess T Group includes remote monitoring dashboards, enabling:

- ✚ Owners to track stock levels and sales from anywhere
- ✚ Daily performance summaries delivered by mobile notification
- ✚ Alerts on unauthorized activities or low-stock warnings

This visibility allows station owners to manage multiple outlets confidently - even if they're not physically on site.

6.6 A Reasonable Payback Window

Though automation requires an upfront investment, most of our clients recover their costs within the first operational year. This is achieved through:

- ✚ Reduced fuel losses
- ✚ Minimized manual errors
- ✚ Streamlined operations
- ✚ Better customer retention

As one station owner quietly shared:

"Since installing automation, my fuel losses have dropped to almost zero. I wish I had done this earlier."

6.7 The Business Case is clear

Whether the goal is to protect profit, modernize operations, or comply with regulations, automation delivers a measurable return - quickly and consistently.

For station operators in Warri and coastal environments, Tom Chess T Group offers the right blend of technology, support, and local understanding to ensure the investment not only pays off - but sets the stage for scalable, sustainable growth.

Section 7: **Maintenance, Support & Lifecycle Management**

At Tom Chess T Group of Companies Ltd, we believe that automation is not just about installation - it's about sustained performance, continuous improvement, and peace of mind. That's why our commitment to every client extends far beyond the commissioning stage.

7.1 Dedicated Support When It Matters Most

Whether it's a software configuration issue, a need for remote diagnostics, or a hardware concern, our clients benefit from direct support through multiple channels, including phone, WhatsApp, and on-site visits when necessary. Our technical team ensures that each automated site remains functional, responsive, and efficient - any time of day.

While response times depend on issue type and location, clients consistently experience swift attention and resolution, reflecting our company's reputation for reliability in both mainland and coastal terrains like Warri.

7.2 Warranty and Manufacturer Backing

All major automation equipment installed by Tom Chess T Group is backed by manufacturer warranties, ensuring protection against early system faults. Whether it's ATG systems, POS software, or other smart infrastructure, our clients enjoy a layer of assurance that reinforces confidence in the long-term durability of their investment.

7.3 Scheduled Preventive Maintenance

To keep systems running optimally, we offer preventive maintenance contracts tailored to each client's scale and operation. These scheduled check-ups help identify potential risks before they escalate—reducing downtime, protecting components, and preserving fuel data integrity.

"Our routine check-ups help prevent costly breakdowns before they happen."

7.4 System Ownership & Client Control

We believe in empowering our clients. Each system deployed is fully handed over to the client—with admin access, documentation, and long-term usability clearly outlined. Your system belongs to you, not tied to a vendor lock-in model. This transparency ensures full operational independence and trust.

7.5 Lifecycle Upgrades & Expansion

Technology evolves—and so do we. Tom Chess T Group supports clients in:

- ✚ Upgrading dashboards for richer insights
- ✚ Adding advanced analytics modules
- ✚ Swapping in new hardware as business needs scale or change

As fuel station operations grow - perhaps with more pumps, new branches, or loyalty programs - our modular system can grow with you.

7.6 Resources & Retraining (When Needed)

To support on boarding of new staff or role changes within your team, we provide digital user manuals and easy-to-follow operational guides. Additional training or on-site refreshers can also be arranged when necessary, ensuring that your workforce stays aligned with the system's best practices.

7.7 Full Lifecycle Assurance

From the moment installation is completed to the long-term operation and eventual upgrade cycle, Tom Chess T Group remains a trusted partner throughout your automation journey. Our support structure ensures that your system stays compliant, productive, and aligned with your station's daily realities.



Section 8: **Call to Action & Next Steps**

Your station doesn't have to continue losing revenue to inefficiencies, poor reporting, or manual systems that no longer match the demands of modern operations—or regulators.

At Tom Chess T Group of Companies Ltd, we are ready to work with you to design, deploy, and support a tailored automation solution that will transform your fuel station into a smart, compliant, and efficient operation—just like we've done for others across Delta State.

Ready to Take the First Step?

We encourage you to:

-  Book a free site inspection or consultation
-  Request a proposal tailored to your station's needs
-  Schedule a system demo or walkthrough

Whether you manage one station or several, our team will guide you through a seamless and stress-free transition to automation.

Contact Us Today

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What Our Clients Say...

"We didn't realize how much we were losing - until the numbers became visible. Automation gave us a new level of confidence."
(Station Owner, Delta State)

Why Choose Us

-  Trusted by operators navigating both business growth and compliance pressure
 -  Supported by industry-recognized equipment and partnerships
 -  Backed by subtle, consistent after-sales support that keeps your system running smoothly
 -  Our installations align with industry standards and are compatible with NMDPRA requirements
-

Don't wait for regulators to knock or losses to stack up. Let automation give you the control you've been missing. Now is the time. Talk to us now!