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INTELLIGENT TRAFFIC CONTROLLER

CLIENT'S OVERVIEW

Leading Intelligent Transport System provider based in South Africa, serving the African markets and offering end-to-end traffic management solutions to their customers.

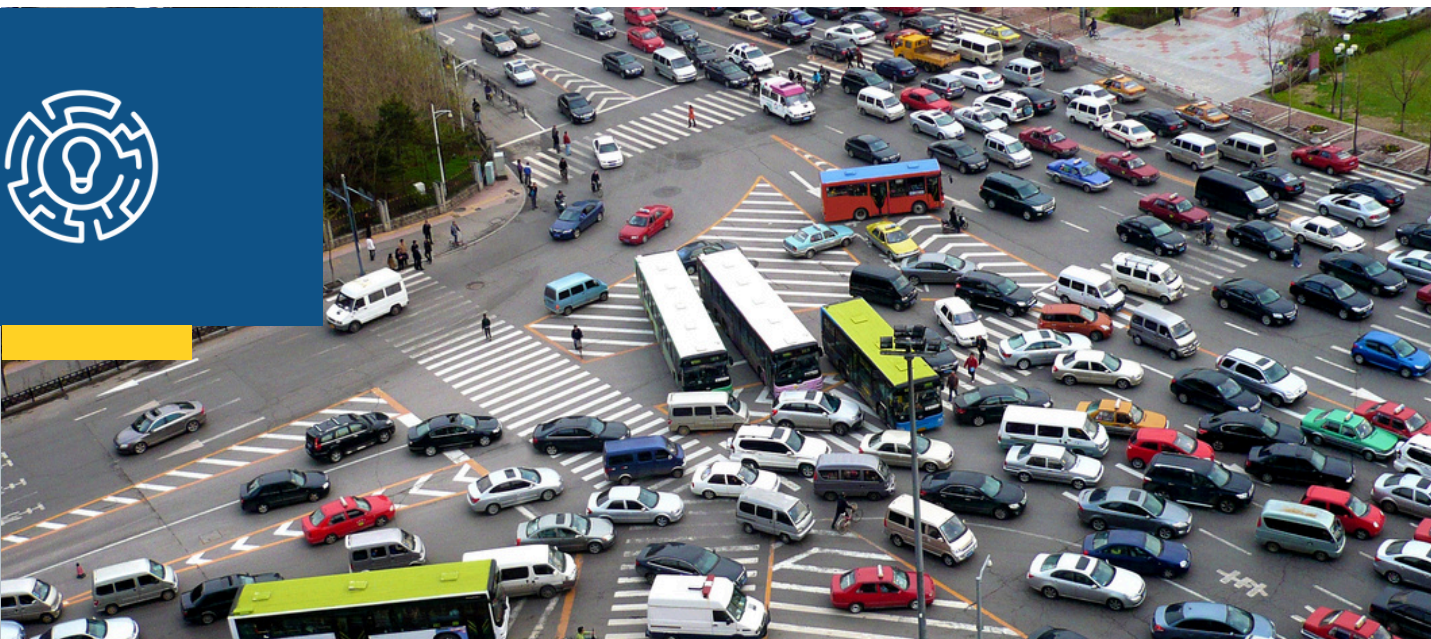# CHALLENGES

THE EXISTING TRAFFIC SOLUTION:

STRUGGLED WITH LARGE AREAS

LACKED REMOTE ACCESSIBILITY

INABILITY TO WORK IN AN ACTUATED & STANDALONE ENVIRONMENT

SOLUTION

TO OVERCOME THE CHALLENGES, ALPHA AIMED TO DESIGN AN INTELLIGENT AND EFFICIENT TRAFFIC CONTROL SYSTEM.

01 Expandable interfaces to phases and detectors.

02 Automated wireless system for updates & remote monitoring.

03 Sufficient onboard memory for configurations and logs.

04 Designed to withstand harsh environments for optimal outdoor performance.

05 Intuitive Android/iOS app to faciliate manual/police panel, diagnostics & configuration download.

06 Set up an onboard GPS module to synchronize with other controllers and create Green Waves, along with the emergency calls feature.

07 Enabled an interface to the central control station that could provide updated data and enable remote control of the junction.

08 The product we designed was SABS-approved supporting an extended temperature range. The end product that we designed had a wide range of advanced inclusions like USB, Wi-Fi, GPS, GPRS and RS485 and RS232 connectivity.

NEXT GEN SOLUTION

- Our next-generation solution will feature a real-time adaptive system that uses live camera feeds to analyze traffic on the edge.
- This system will adjust traffic signal cycle times in real time and learns traffic patterns over time, ensuring smoother traffic management.

TECHNOLOGY AREAS

- Vehicle Actuated Traffic Controller
- Remote Monitoring and Control of Traffic Signals
- Mobile Applications
- PC based real-time configuration & simulation

HARDWARE

- A complete traffic controller rack hardware design having up to 12 3U and 9 6U cards
- CPU card having two 32bit ARM controllers
- SABS-approved hardware supporting extended temp range
- On-board USB, WiFi, GPS, GPRS, RS485 & RS232 connectivity

SOFTWARE

- C for ARM Controller code
- Winforms, C# & SQL server for configurator & simulator
- Native Android & Swift 3.0 (iPhone) for Smartphone apps

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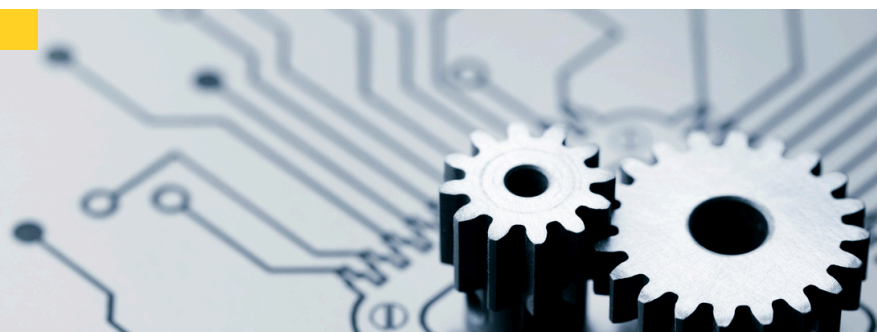
RESULTS

On employing these new modifications and successfully designing a functional intelligent traffic controller, we were able to deliver to our client the following results –

- New market demand for intelligent traffic control
- Interconnected and efficient control systems
- Complete product ownership to our clients
- The ability for remote monitoring and controlling of traffic signals
- A user-friendly mobile application
- Real-time configuration and simulation

We designed a completely functional and efficient traffic controller with the help of our core hardware and software services.

OUTCOME

Today, our intelligent traffic solution controls over 1000 intersections within the African continent, a testament to our success in hardware and software integration.

VISIT OUR WEBSITE FOR MORE INFO

www.alpha-ict.in

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