

Defining new paradigms of collaboration

Realizing solutions with INCA and beyond for vehicle fleet management

For its fleet management, Mahindra was looking for a versatile solution that would meet unique requirements. The solution: an automotive-grade Windows tablet running INCA that acquires data via Ethernet over XETK at a high data bandwidth. Or in short: TOUGHIE.

Go to the office, boot the computer, check the vehicle fleet's status, investigate issues, rectify errors, and set the vehicles back in the fleet – all before the coffee gets cold. This wishful start to a fleet manager's day at Mahindra became reality when a crisis call came in from a test-driver reporting a Malfunction Indicator Light (MIL) error.

Time to pack a bag and hit the road again for a few days. With many vehicles scheduled to run across India, immense time pressure and the need to be omnipresent, this crisis was a smaller version of the storm to come. Krishnaraj P, responsible for fleet management at Mahindra Automotive, was worried.

Many products enable vehicle data acquisition, but Mahindra wanted more than just a data logger. The solution would have to be versatile enough to meet unique requirements. There was also the trade-off between costs and data acquisition bandwidth to consider. With delivery time pressure, experimenting or investing a lot of thought and effort into building a solution was hardly feasible. Engineers from ETAS worked with stakeholders at Mahindra to understand their concerns, detail the requirements, and create a solution that addressed all their needs, while boosting efficiency and enhancing convenience for multiple teams.

The solution

An automotive-grade Windows® tablet running INCA that acquires data via Ethernet over XETK at a high-data bandwidth. ETAS consulted with all stakeholders to identify their demands, pain points, concerns, and operating methodologies. ETAS also addressed potential pitfalls and then helped design an all-encompassing solution. Ideation and brainstorming was a joint effort with user teams, done with a keen eye to detail and executed on the actual fleet, mostly out in the field, followed by painstaking assessments and corrective actions. Custom features and pre-configured options now treat Mahindra users to a seamless experience.

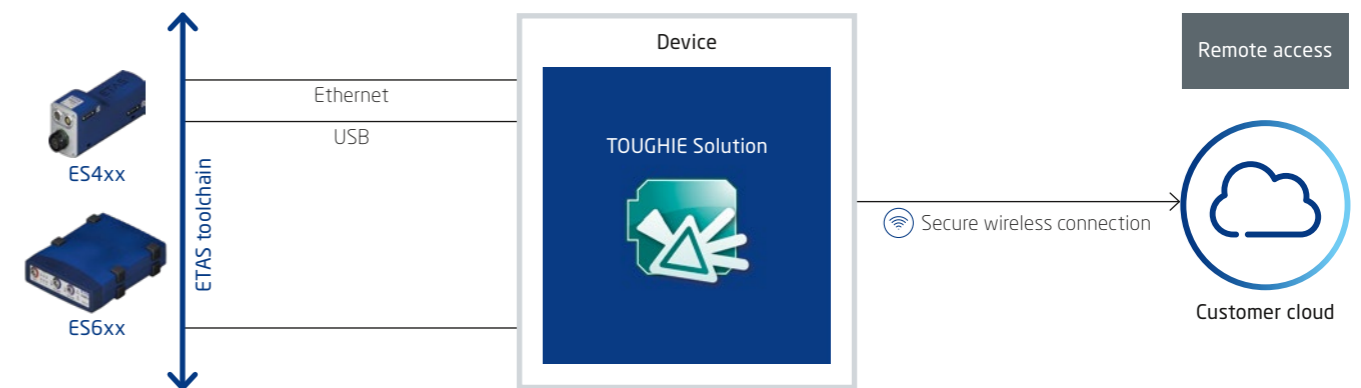
This benefits everyone, from the test-driver, the solution's primary user, to the engineer evaluating vast quanta of data. User safety, data security, and a GUI meticulously configured to Mahindra's specifications make this a holistic solution. An onboard GPS and mobility module provides location information and delivers data at 4G speeds to a server for automated processing. Remote access to vehicles enables monitoring, investigation, and rectification of issues without having to go to vehicles located thousands of kilometers away.

"The INCA-based solution was an innovative approach. We were able to meet data acquisition requirements at an affordable cost. It exceeded our expectations and we could enhance the experience with additional features such as a dashboard for the driver, remote monitoring, etc., which made life easy for both fleet engineers and drivers. With this approach, we were able to eliminate the tedium of data transfer and the need for manual intervention and realize the full potential of data automation without compromising data security. The additional bandwidth gained by using XETK instead of CAN meant we could capture significantly more data per drive to avoid repetitive activities, which also helped us adhere to the timelines. The built-in GPS capability is an added feather in the cap", says Krishnaraj P.

Today, a crisis call from a test vehicle driver is no longer an issue and data-backed decisions have become a habit at Mahindra thanks to a cocreated solution nicknamed TOUGHIE. Leveraging on its consulting and engineering excellence, ETAS helped turn a dream into a reality that benefits Mahindra's business.

Authors

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Functionality of TOUGHIE – the INCA-based tablet solution.