

SUCCESS CASE 6.2024

DISTRIBUTION NETWORK WEBCAMS: AI ON IoT

EFFECTIVE MANAGEMENT OF ALARMS OR EVENTS FROM THE ADMS



THE CHALLENGE

The main challenge behind this project was to enhance the **detection of triggering events in primary and secondary substations**. To address this challenge, the project aimed to develop a dashboard for managing, classifying, filtering and storing alarms based on their nature, date, duration and verification levels, associating them, in each case, with video and audio multimedia content automatically recovered through ONVIF cameras installed in these substations. Artificial vision models were applied for the automated configuration and detection of real or false alarms.

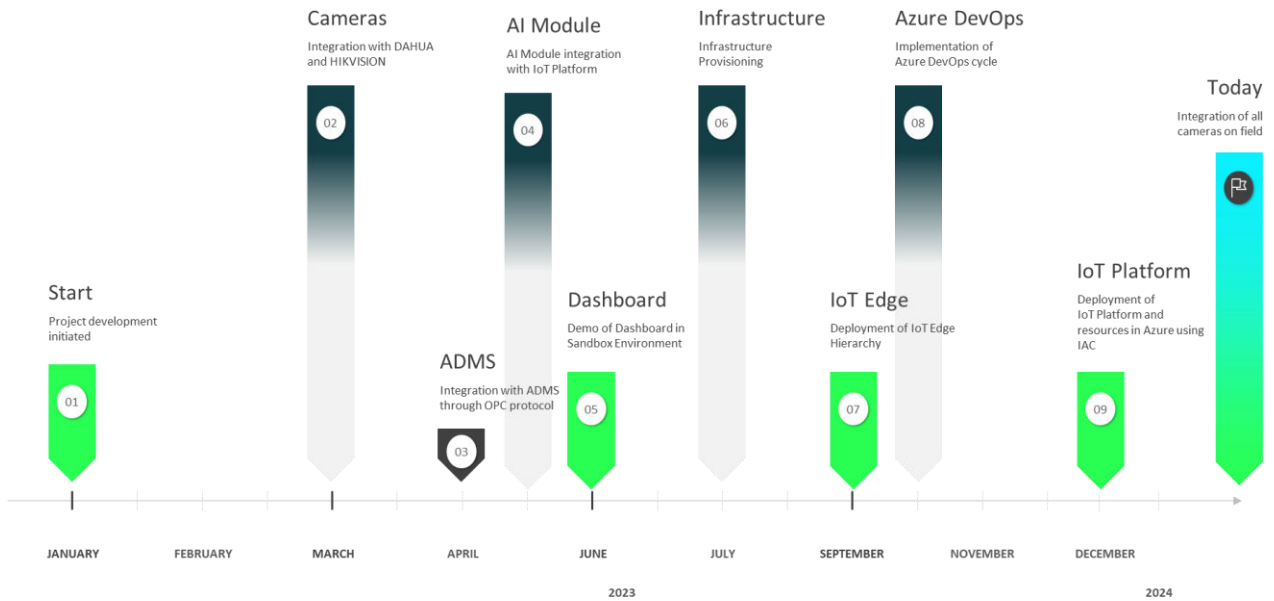
Collected images showed that the **lack of understanding of triggering events can lead to inappropriate manoeuvres, causing significant additional damage**. By providing operators with accurate information about the event, E-REDES aimed to avoid harmful actions, thereby reducing long-term losses.

THE SOLUTION

The solution developed by E-REDES is based on the following characteristics:

- **Integration with the Advanced Distribution Management System (ADMS) through OPC rules.**
- **Easy access to webcams:** Simplified access to webcams and the analysis of the current situation and visualisation of real and false alarms and their history included in a single tool.
- **Data monitoring:** Successfully and rapidly monitoring data from cameras and stations, storing data generated by events, alarms or videos for future analyses.
- **Model improvement:** Greater precision in detecting the proposed events (e.g., intrusion, fire, flood, and trip) through various iterations of improvement with artificial intelligence (AI).
- **Intuitive and usable dashboard** for users.
- Improvement of the model thanks to AI allowing to clearly detect real events.





Implementation timeline.

KEY SUCCESS FACTORS

- **Delivery:** Agile Approach and Scrum Framework. Embracing an agile mindset and utilising the Scrum framework allowed for iterative and incremental delivery, accommodating customer expectations with shorter feedback loops and reduced risks.
- **Collaboration and Stakeholder engagement.** Close collaboration with the infrastructure teams and IT Department ensured effective integration, facilitating interoperability and optimised performance.
- **Efficient integration of emerging technology.** Continuously integrating emerging technologies such as AI and advanced data analytics enhances incident detection, and predictive asset maintenance, and keeps the platform technologically innovative.
- **Usability and user experience.** Designing the platform to be scalable and flexible, capable of handling an increase in the number of users and adapting to evolving customer and market needs.
- **Robust security and reliability.** Prioritising cybersecurity and platform reliability through advanced security practices and high availability ensures customer data protection and uninterrupted service delivery.