

Panorama for the European Space Agency

The refurbishment of the Ariane 5 control system

Integrator
GTD Barcelona



in figures

- + 12.000 information items managed
- 50 field posts connected across 5 remote sites
- Commands sent in under 1 second
- Control & monitoring of over 115 Ariane 5 launches



Panorama: a new generation of SCADA

The refurbishment of the Ariane 5 control system aims to unify the ground control systems of both Ariane 5 and Ariane 6 launchers. This solution **improves operation and maintenance** by sharing resources between the two systems.

In the frame of this renewal, the control system has been replaced by the Panorama SCADA.

Panorama has enabled the shift from a custom-made system to a new generation SCADA that provides standard functionalities and interfaces. Its **object-oriented approach** allows for fast development and is key to the maintenance and scalability of the system.

Panorama also offers a large library of standard objects. Among them, the OPC item object has been used to configure the communications between the control system and the distant PLCs, which are in charge of collecting field data for monitoring and control.



Codra.net



Security and reliability for critical processes

Space projects are subject to very strict security requirements. Panorama E² was the first SCADA platform to obtain the First Level Security Certification (CSPN) issued by the French National Cybersecurity Agency (ANSSI). CODRA's commitment to **cybersecurity** was one of the main criteria for choosing Panorama as the SCADA for Ariane's new control system.

It is important to point out that the processes monitored by the system are extremely critical and **require high reliability and availability**. To achieve this, PANORAMA provides redundant mechanisms and fast failover switching in case of a server failure.

In terms of security, and besides the ANSSI certification, Panorama provides a flexible authentication system, in which system users could be centralized.



Ariane 5 Control Room

The Command and Control System (CCS)

The CCS is in charge of ensuring the permanent implementation, control and monitoring of the Ariane 5 site permanent resources 24/7. It is dedicated to ground installations and plays an important role in safety. The system, which manages more than 10,000 data variables, controls and monitors different services:

- Power supply,
- Fire detection and extinction,
- Gas and toxic vapours detection,
- Air conditioning,
- Security and backup means (road fires, alarms, building platforms access, etc.),
- Audio and video means (facilities and launch-pad surveillance),
- Etc...

Interoperability and scalability

Other points that were also considered when choosing Panorama were **adaptability and usability** compared to other SCADAs.

The Panorama software platform provides external interfaces and libraries that facilitate external tools development and third-party applications as well. This opens up many possibilities for creating an environment of applications that talk directly with Panorama or may even be used as libraries inside the platform.



" Panorama has allowed us to create component libraries specific to our project, and also to adapt and create easily custom-made functions in order to be fully compliant with the requirements of the CNES (Centre National d'Etudes Spatiales) ".

Daniel Gregorio Ballesteros, Head Office Manager of GTD