

# TIP: AN UMBRELLA APPLICATION FOR ALL SCADA-BASED APPLICATIONS FOR THE CERN TECHNICAL INFRASTRUCTURE

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## Introduction

In the recent years, the Industrial Controls and Engineering (EN-ICE) group supported other CERN teams in the re-implementation of the supervision of the technical infrastructure (TI) using standard tools like the WinCC Open Architecture SCADA system and the general purpose controls frameworks, JCOP and UNICOS. The Technical Infrastructure Portal (TIP) is currently being developed to provide centralized access to all WinCC OA applications and to extend their functionality by including links to external databases and a powerful localization system based on GIS. TIP is expected to offer an environment for operators to develop views that aggregate data from different sources, such as cooling and ventilation (CV), as well as electricity.

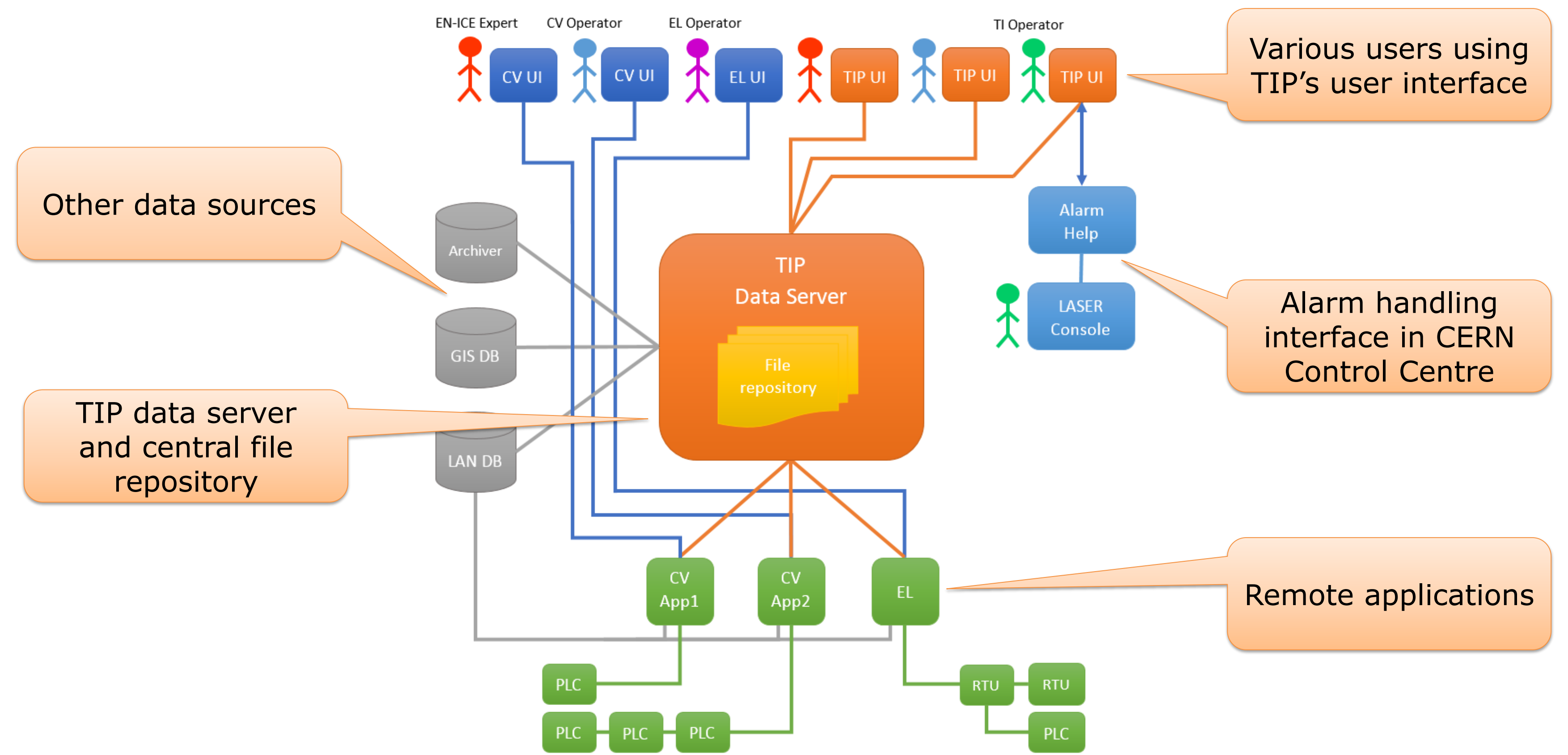
## TIP's Main Requirements

- Shall centralize access to all WinCC OA applications deployed for the CERN Technical Infrastructure.
- Shall not disturb the remote systems and minimize impact on their performance.
- No change to the configuration of the remote applications shall be required for integration in TIP.
- Shall allow TI operators to create their own views where they combine data from different sources.

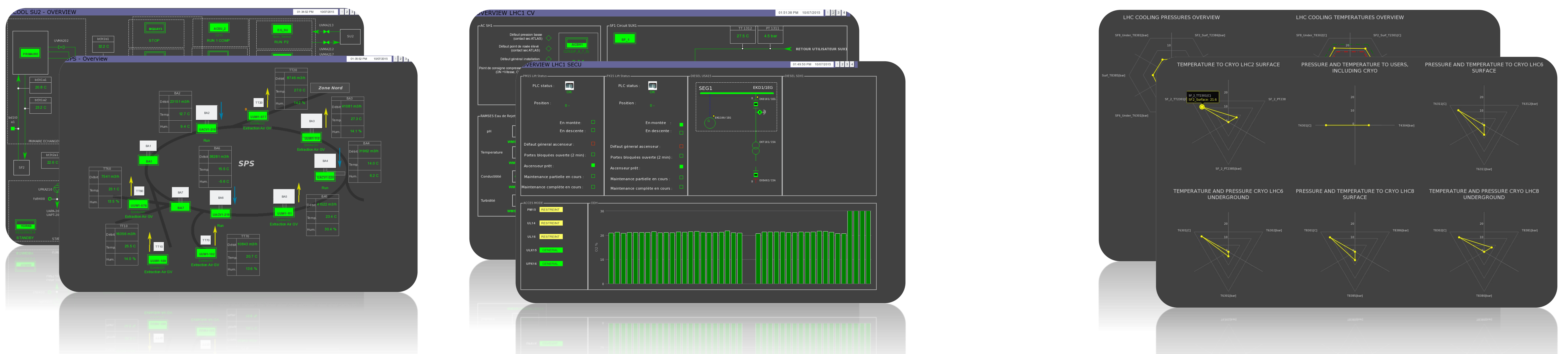
Applications under the umbrella of TIP as of October 2015.

Application Domain	Control Applications	Synoptic Views	Important Alarms
Cooling & Ventilation	137	1846	1364
Electricity	1	211	13719
Lifts	5	0	0
Monitoring	1	335	0

## TIP's Architecture



## TIP's User Interface



TIP may display any of the process synoptic views of the remote applications (left) as well as overview panels specially developed for TIP (right).

TIP uses modern visualization techniques, like spiderweb graphs, to increase readability and enrich user experience.

## Conclusions

TIP entered production in Summer 2015 and despite of the short time in use, it has already proven to be a significant improvement not only for the operators of the CERN's TI but also for the equipment groups and the EN-ICE experts. In the coming months, it is expected to extend the functionality of TIP to cover new domains like the Radiation Monitoring system, and to show dependencies across different application domains, e.g. dependency between CV and electricity. This promising start for the CERN's TI, has awoken the interest of having similar umbrella applications for other domains like the LHC Cryogenics or Power and Interlock systems.