The Integrated Alarm System for the Alma Observatory

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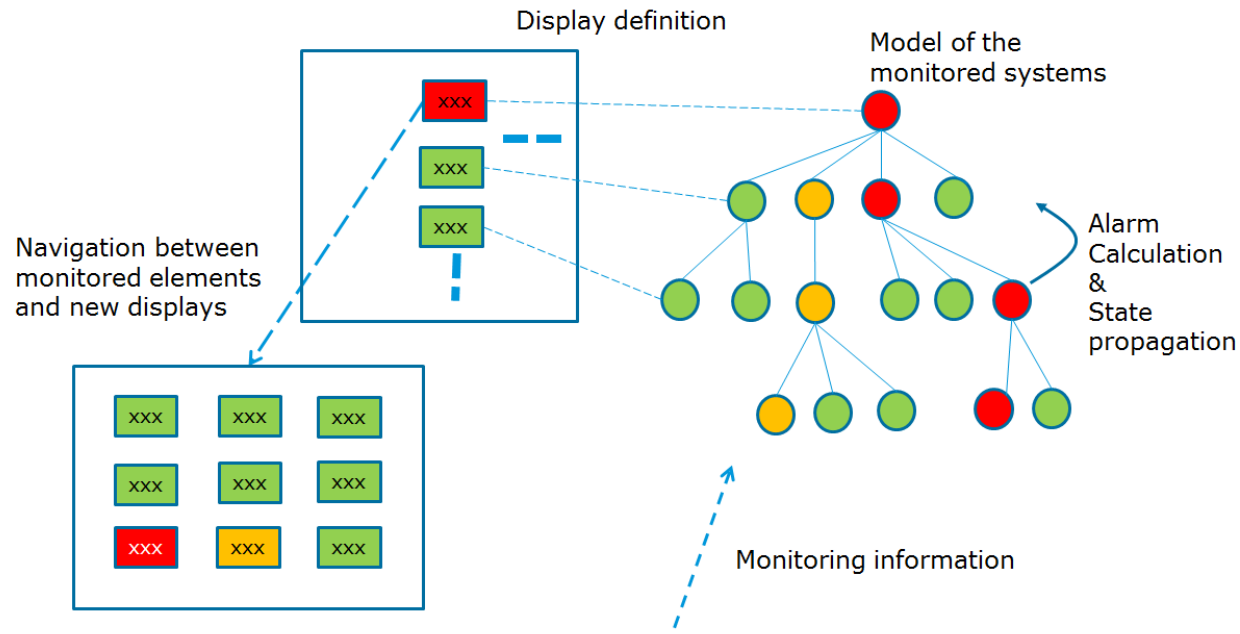
Motivation

- Current alarm system is not enough
  - Operator panels
  - Misses alarms from external systems
- ALMA facility is not only the ARRAY
- Have the facility under control 24/7
- Increase operators and engineers awareness
- Reduce the failure-to-reaction time
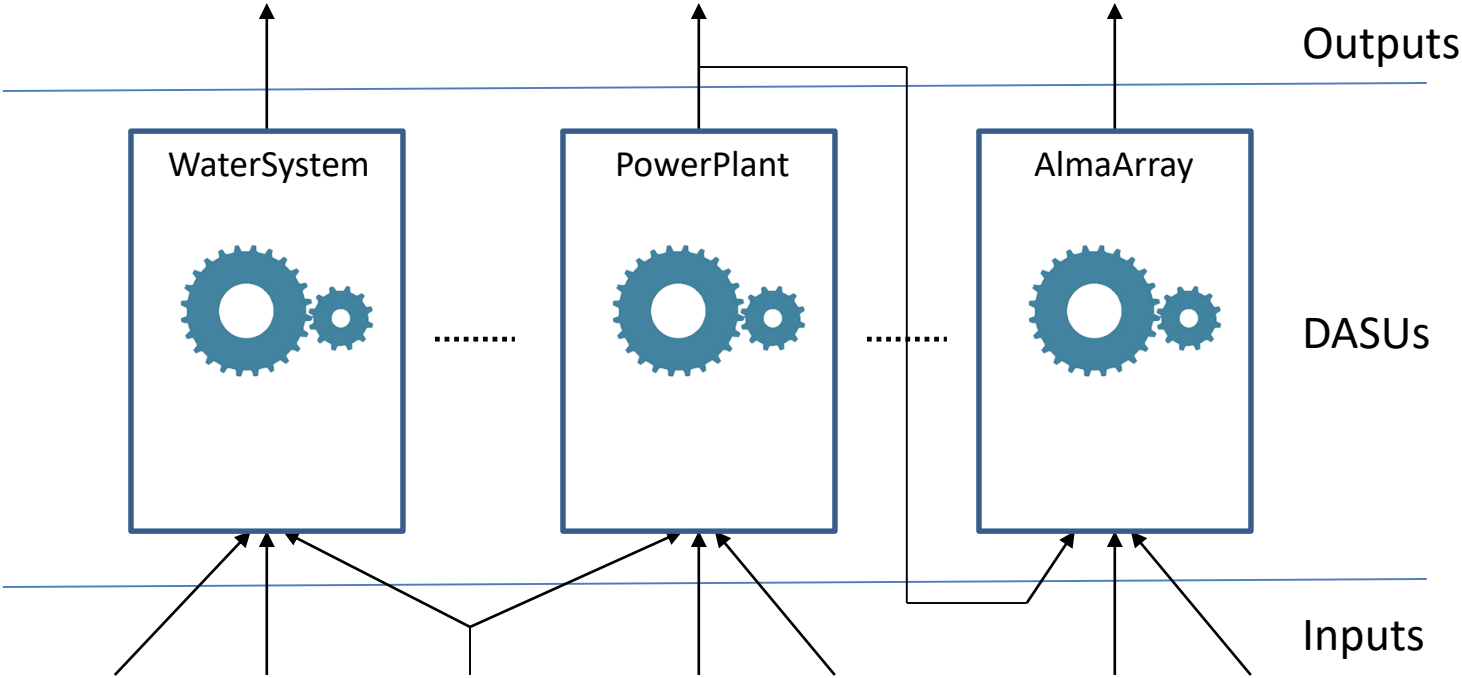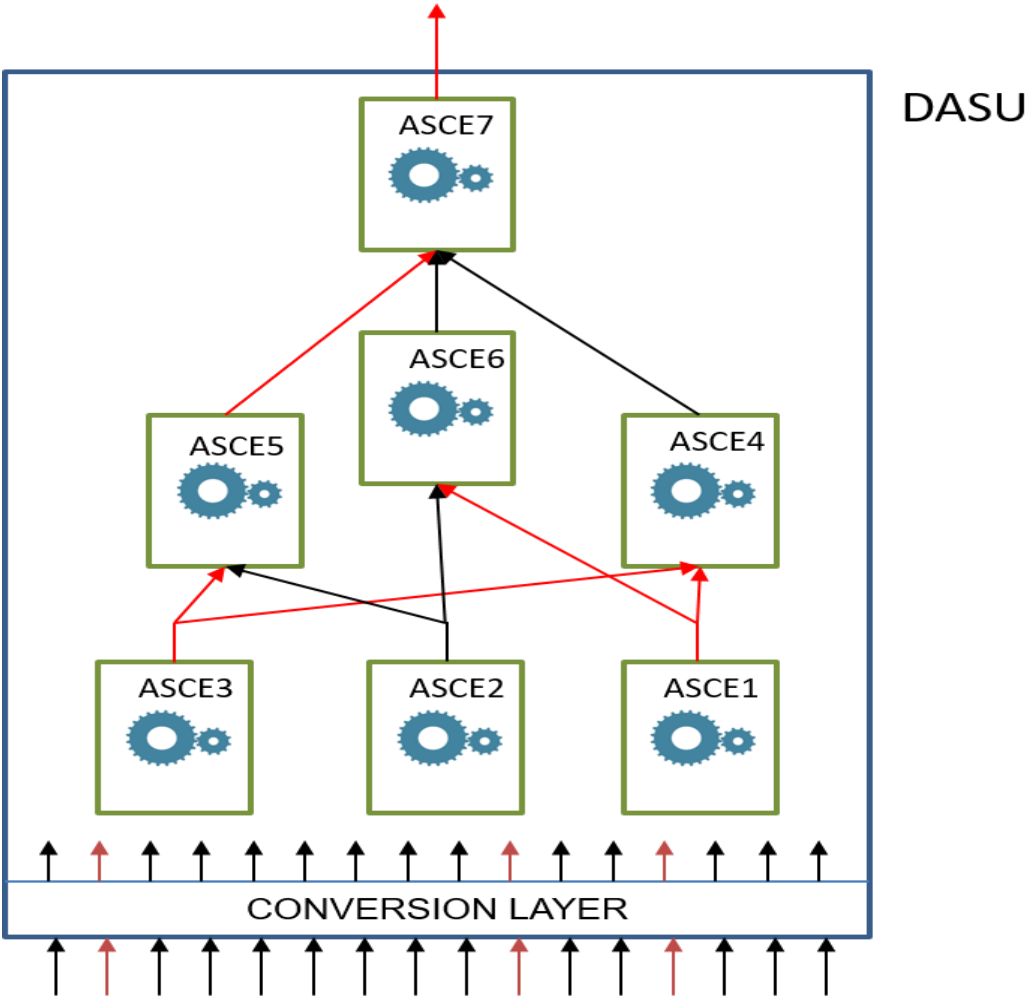- Improve telescope efficiency

High level

Operator panels

Integrated Alarm System

Alarms and monitor points

Software systems

Hardware systems
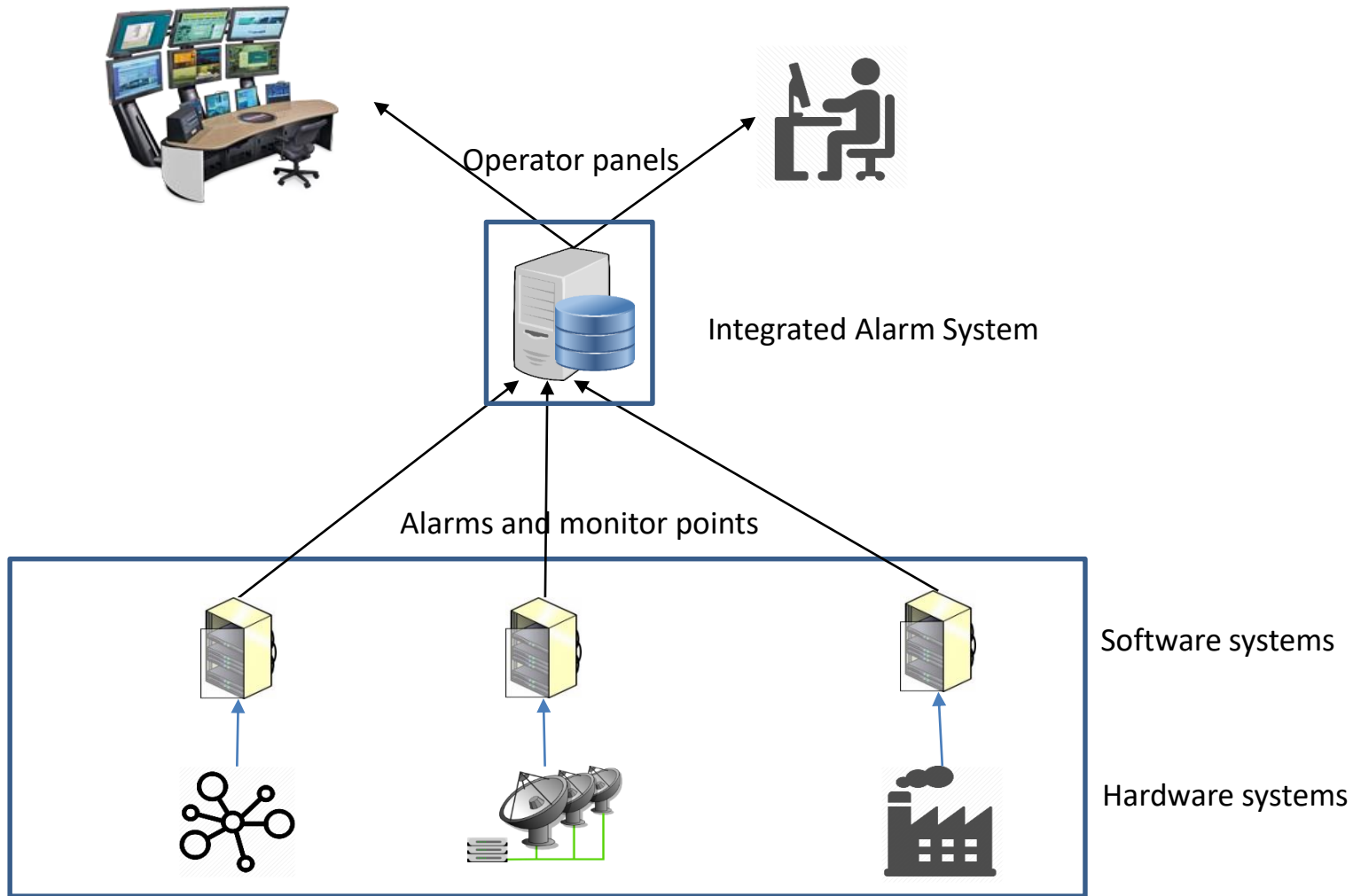
Integrated Alarm System model

AIS core – Distributed Alarm System Units

Outputs

WaterSystem   PowerPlant   AlmaArray

DASUs

Inputs

Transfer function

$$O_E = \sum_{i=1}^{n} I_i$$

Identifiers

ARRAY01

DASU

LOCKED@ASCE5@ARRAY01

ASCE7

ASCE6

ASCE5

ASCE4

ASCE4@ARRAY01

TEMP@ACS@DBCONV@ARRAY01

ASCE3

ASCE2

ASCE1

CURRENT@POWERP@PWDASU

DBCONV@ARRAY01

CONVERSION PLUGIN

TEMP@ACS
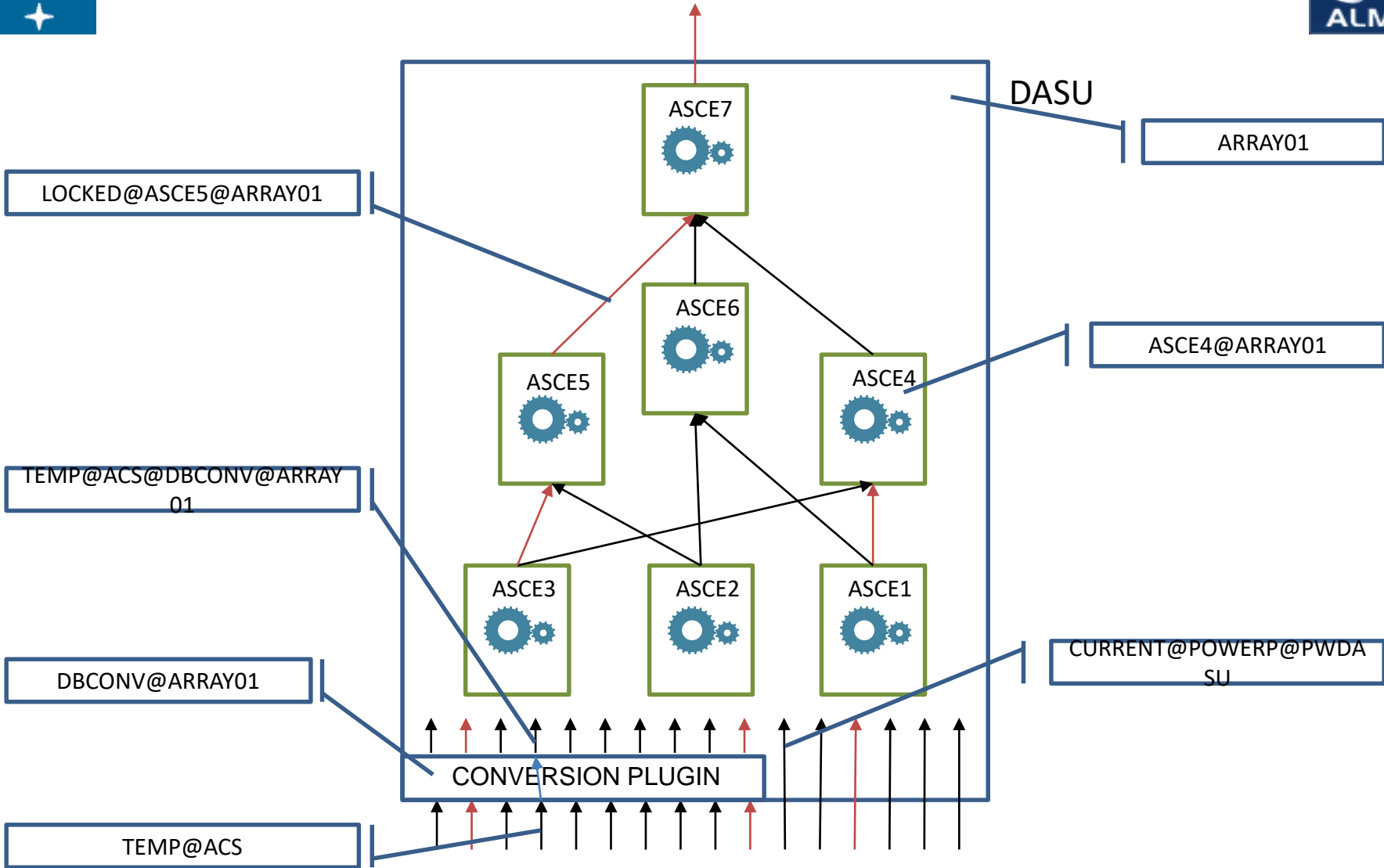
Communication with subsystems

Online

Weather

Power plant

IAS server(s)

BSDB

Data flow

BSDB

Overview

ACS

ALMA Power Plant

ALMA Weather Stations

Backstage Database

Long Term Database

IAS Web Server

IAS Server

Configuration Database

Main Operator GUI

Read-only GUIs

Technical GUIs

Operator GUIs

Web server

BSDB

Operator GUI

Engineer GUI
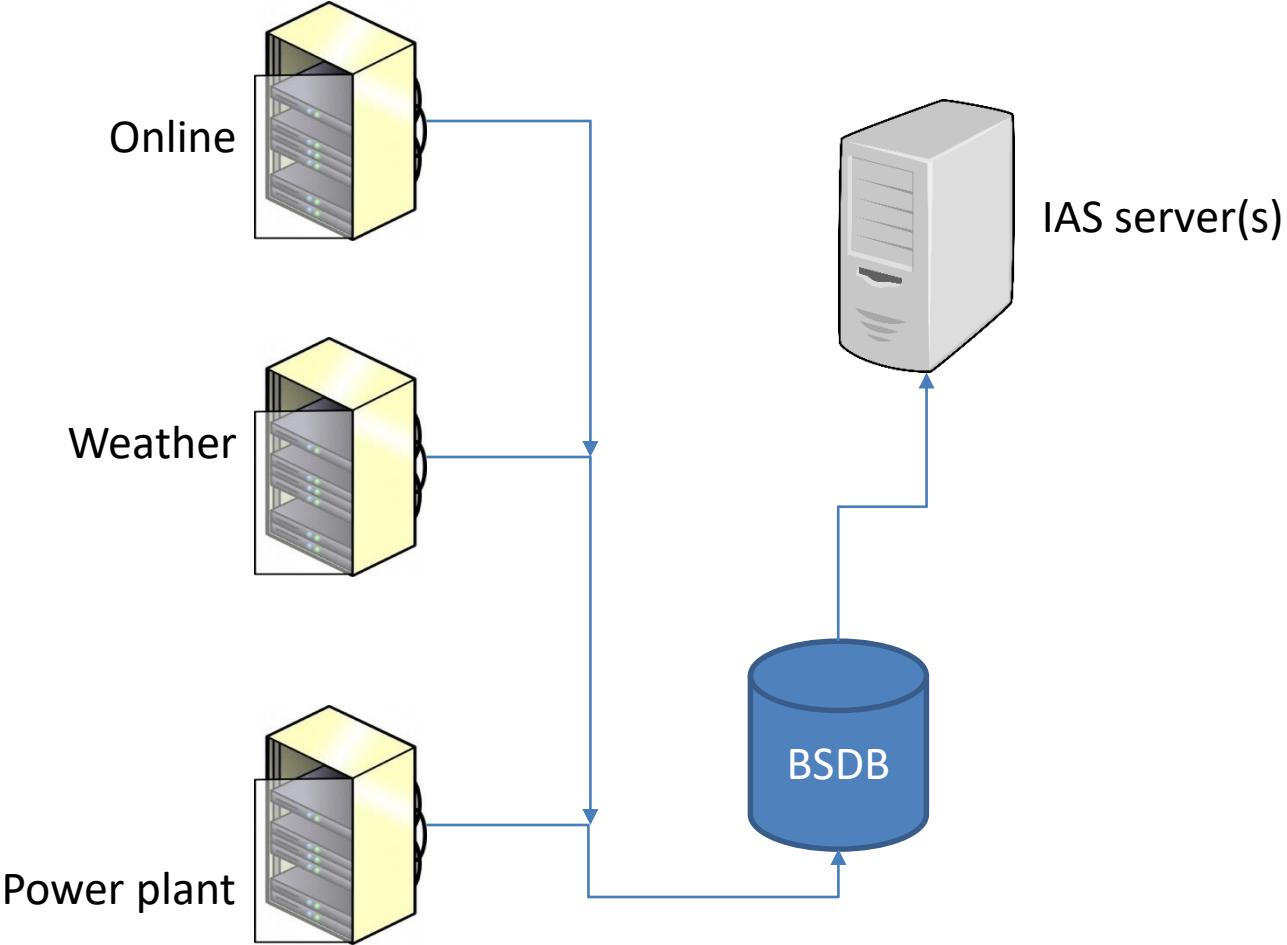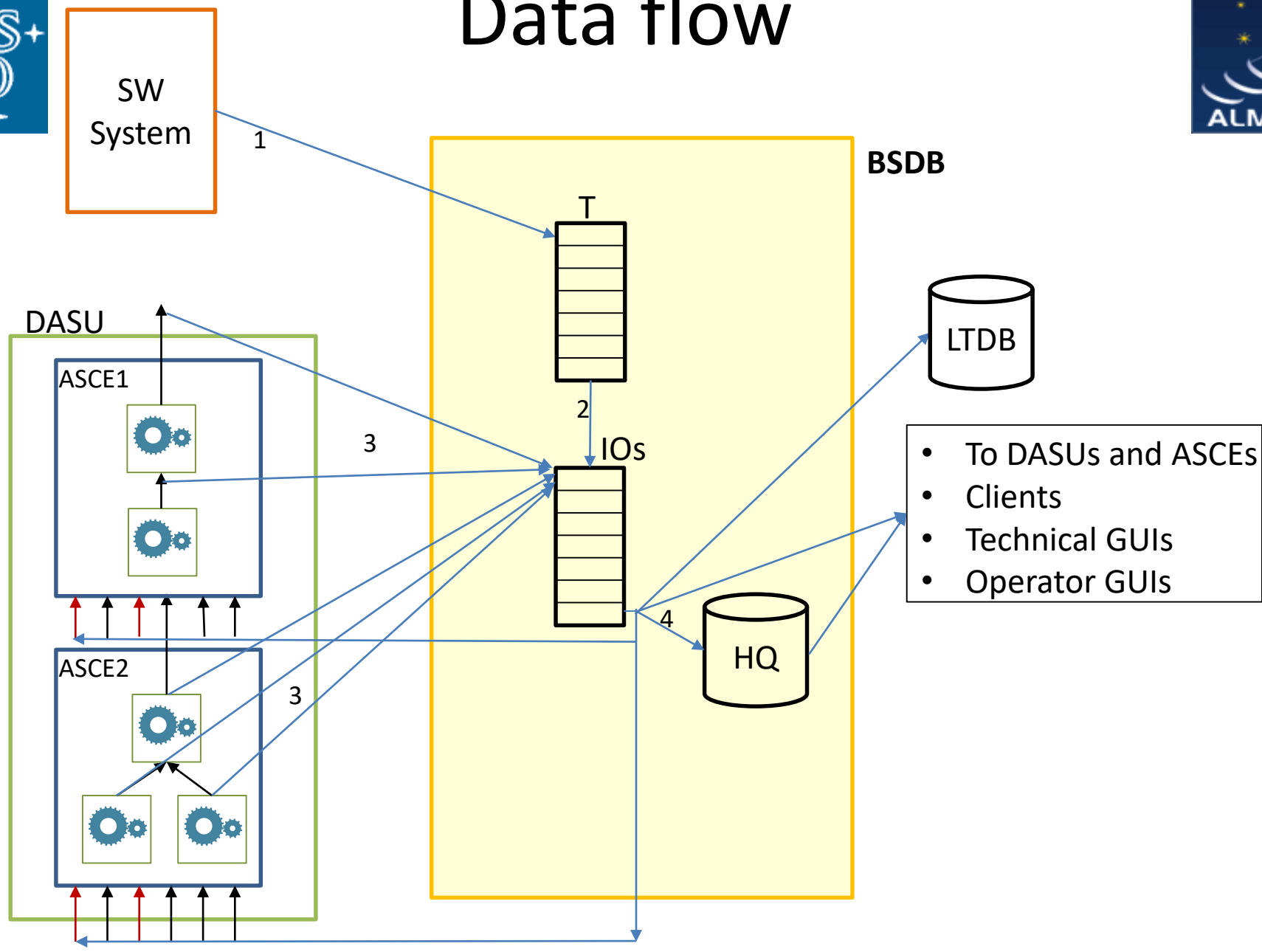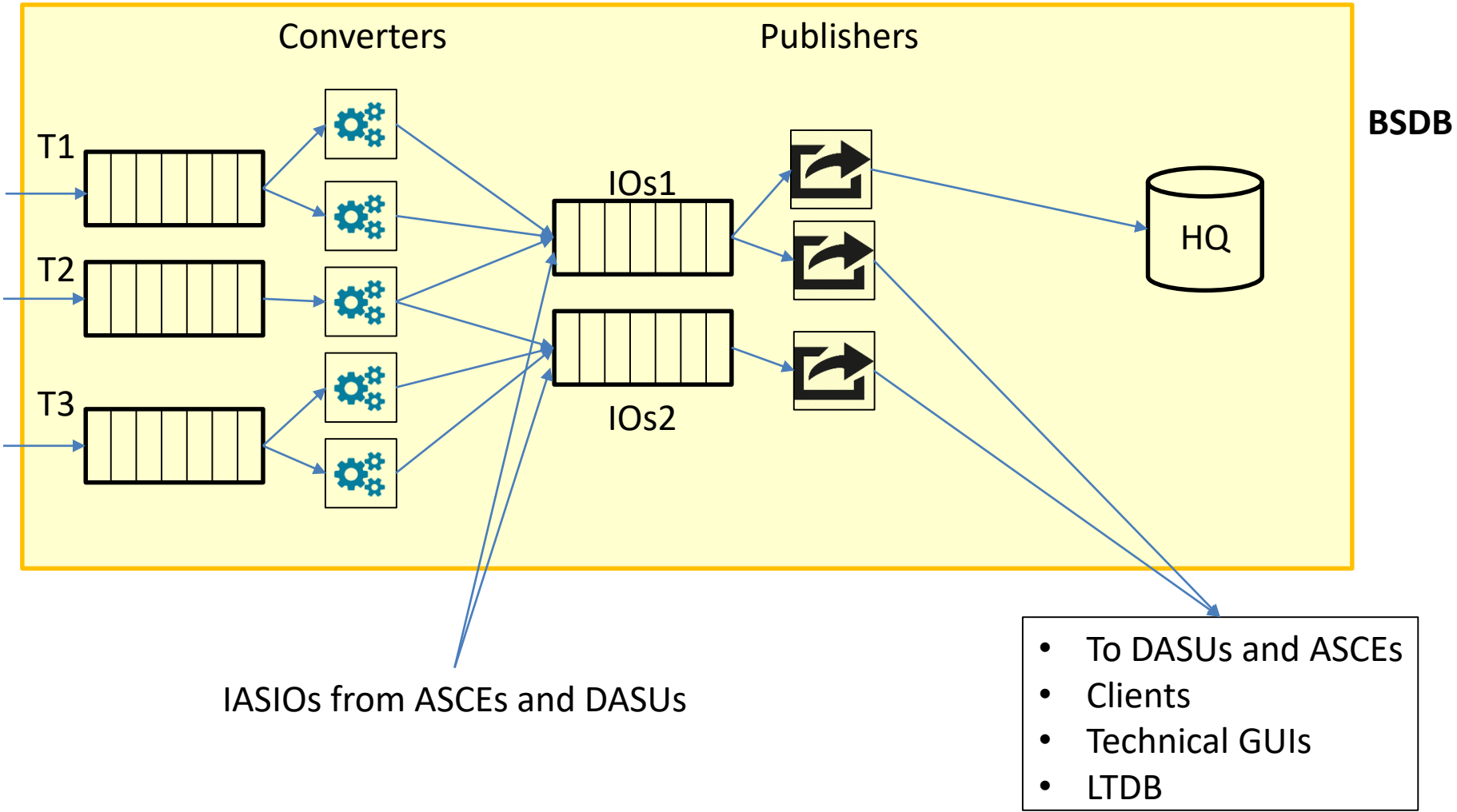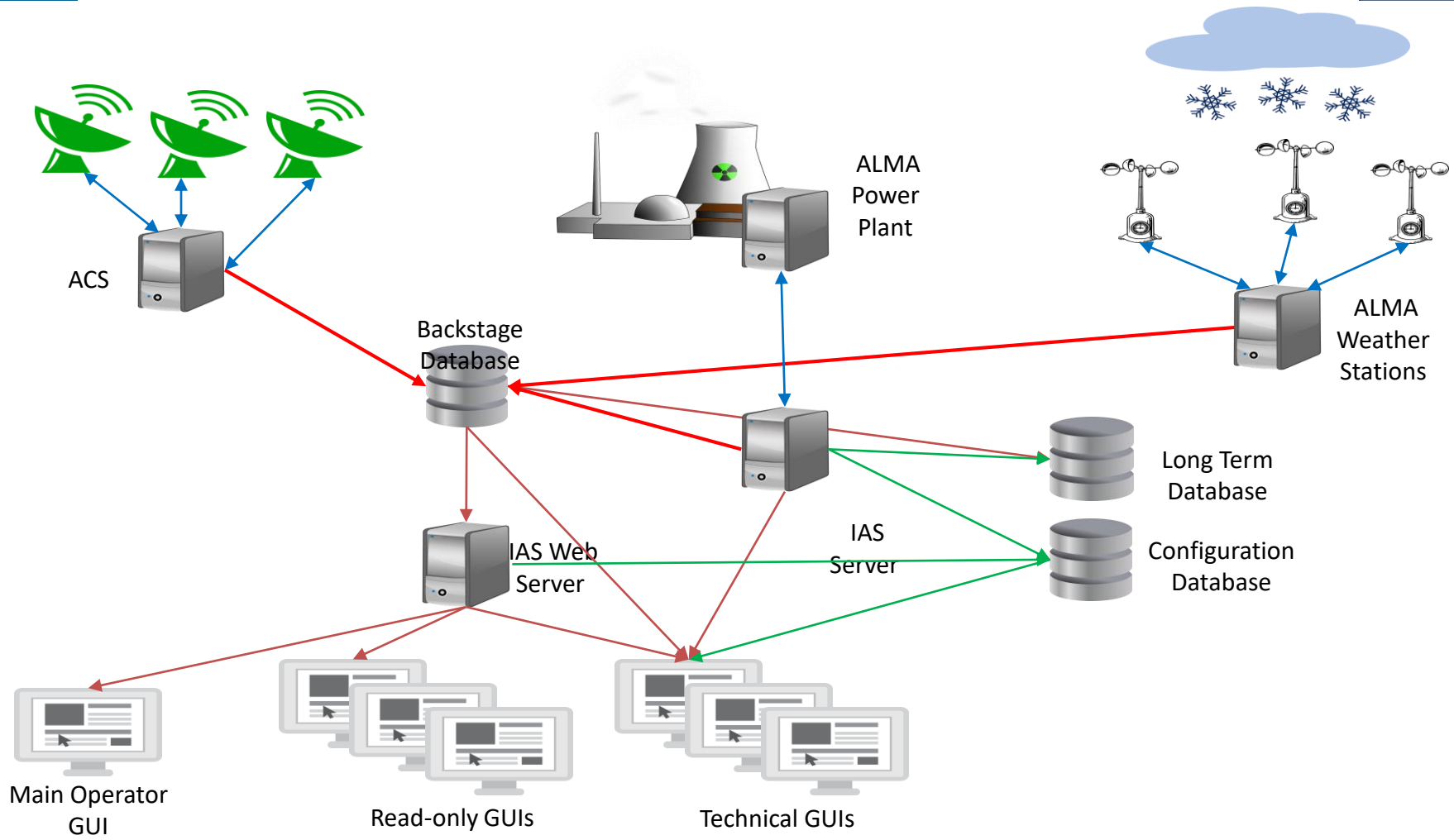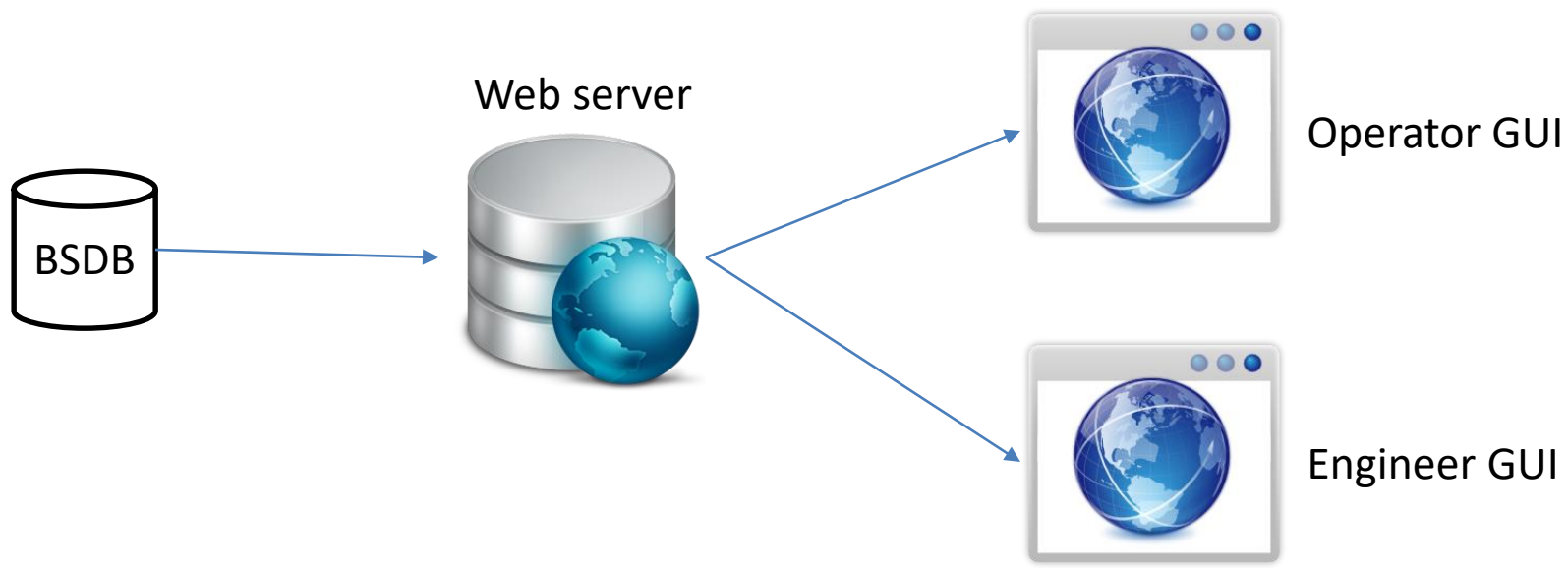
GUI mock up

Conclusions

- LGPL

- https://github.com/IntegratedAlarmSystem-Group
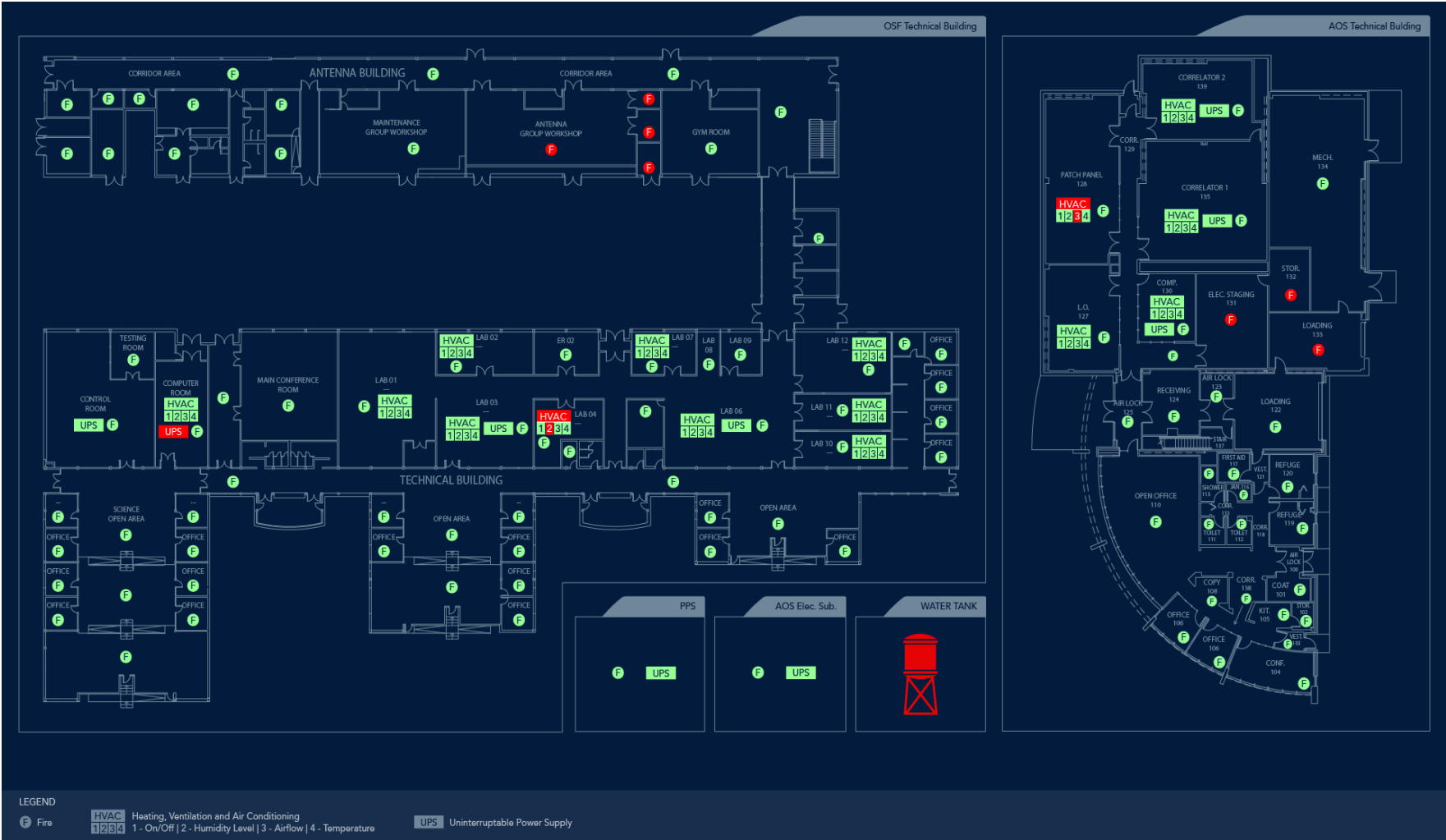
- First version to be installed early next year

- In operation at the end 2018