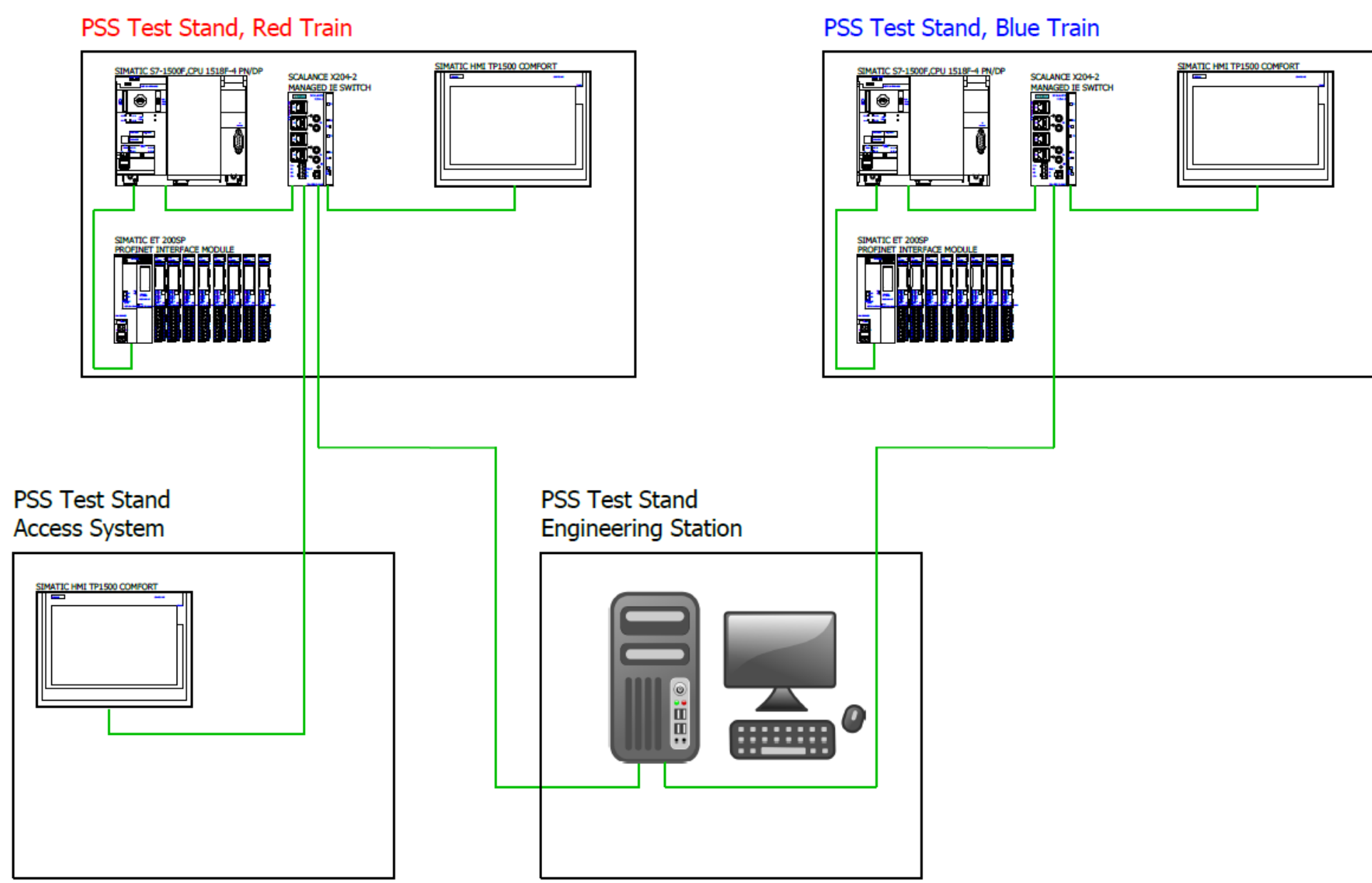


# PSS Test Stand

## PSS Software Virtual Commissioning

### PLC Network Architecture



### Functions

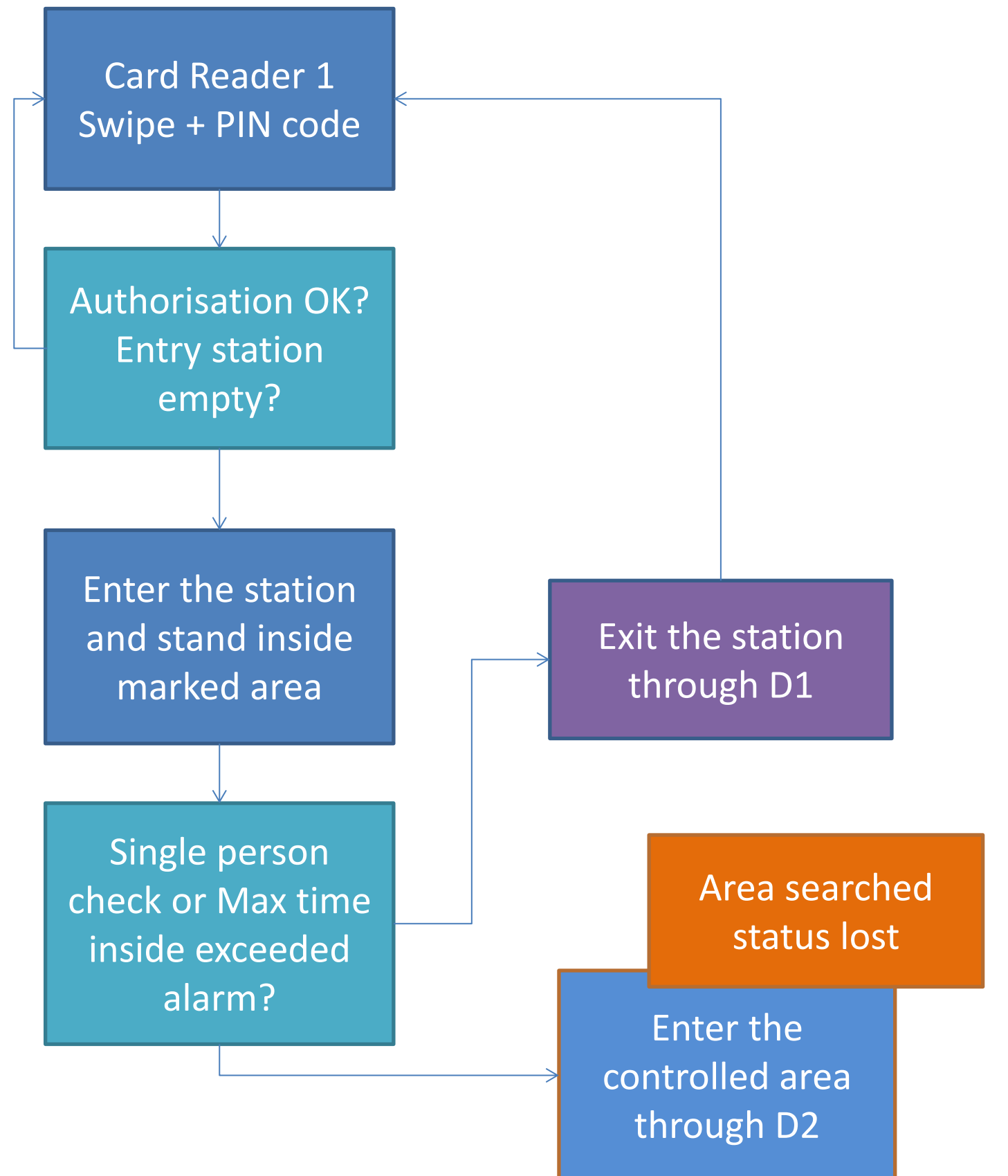
The PSS test stand will be used for simulation and evaluation purposes of any systems/equipment to be developed by PSS team.

Functions ready to be presented:

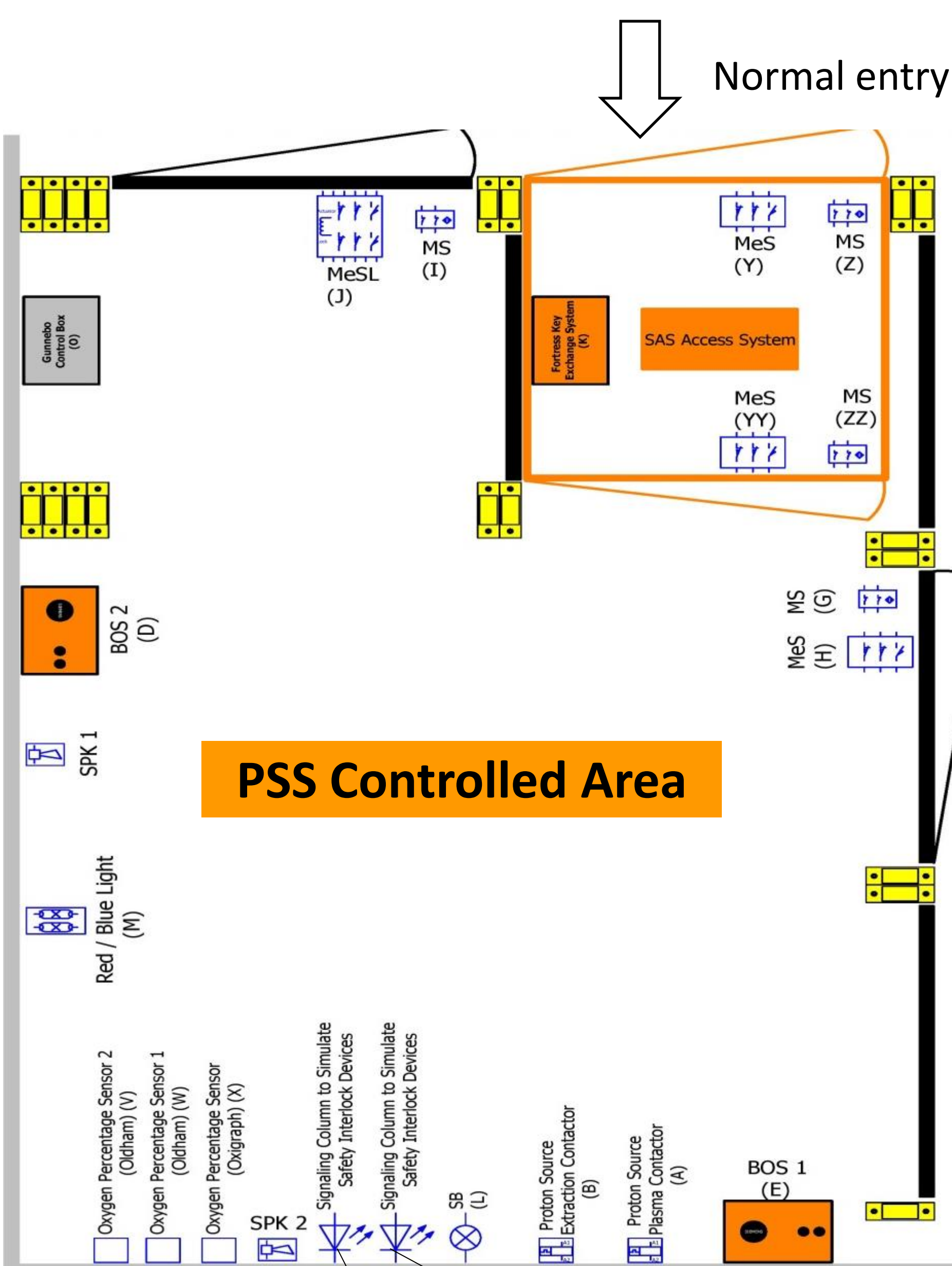
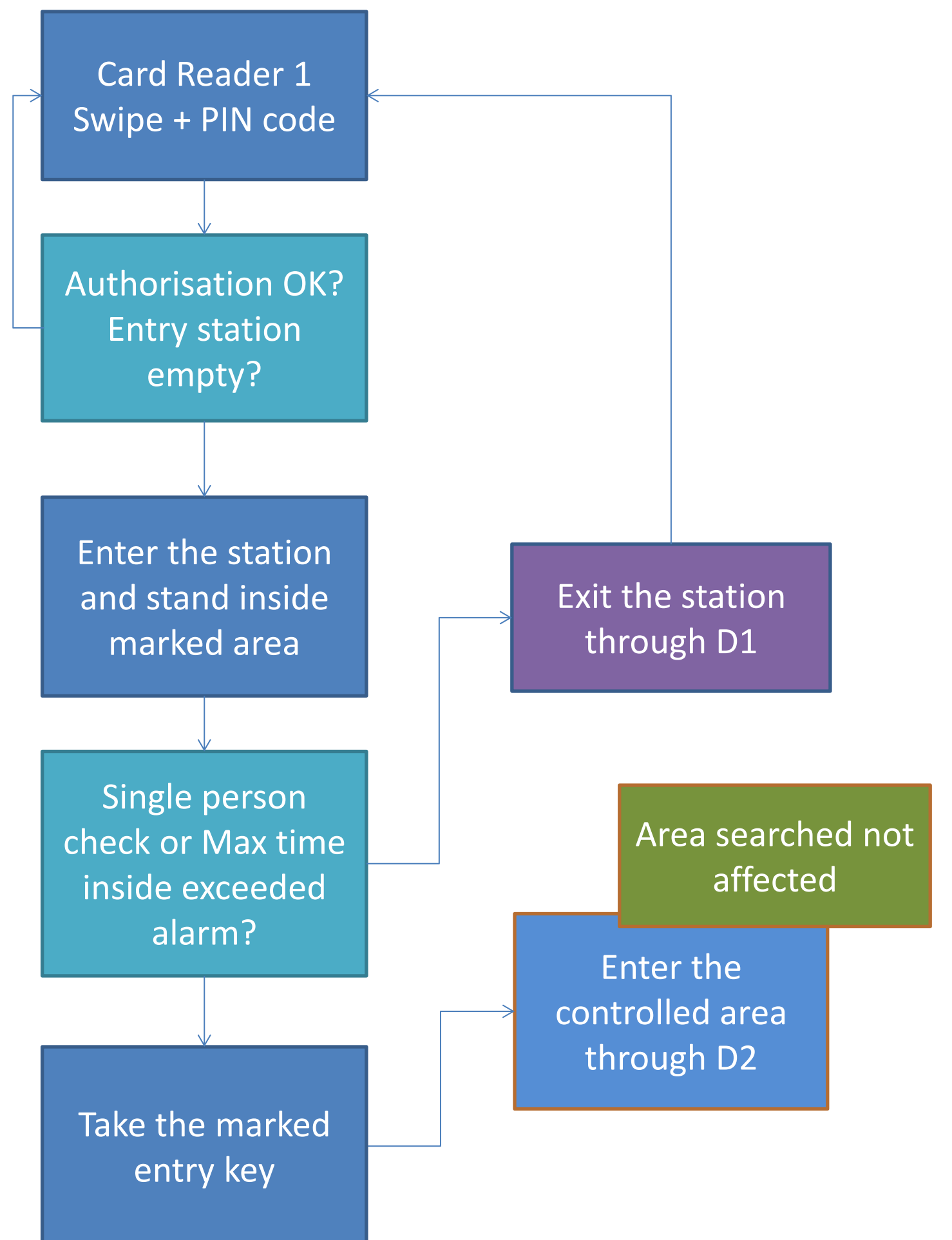
- Entry/exit to PSS controlled area in Open and Restricted Access modes.
- Search procedure: The formalized search patrol of PSS controlled area.
- Normal enabling/disabling of the PSS actuators (transition to and from Beam ON mode).
- Emergency disabling of the PSS actuators upon intrusion to PSS controlled area or beam-off button pressing.

### Entry to Controlled Area

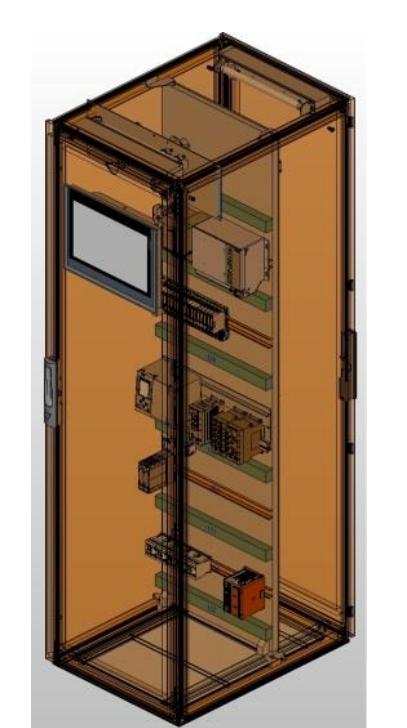
#### Open Access



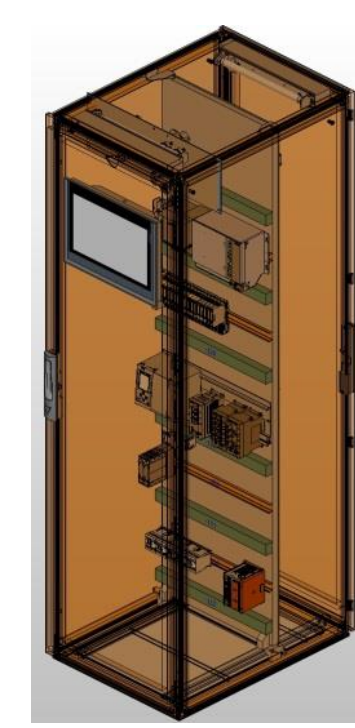
#### Restricted Access



	Beam-off Station (including Beam-off Button, Search Button, ODH Indicator, Signal column)
	Magnetic Safety Switch - 2 NC, 4 Connection Points
	Mechanical Safety Switch with Separate Actuator
	Mechanical Safety Switch with Tumbler
	Public Address System Speaker, 6W
	Search Beacon
	Red / Blue Light (Indication of Beam ON / Oxygen deficiency Hazard)
	Signaling Column
	Contactor, AC-3 3 KW/400 V (Indication of Proton Source /Modulator)



PSS cabinet Red train

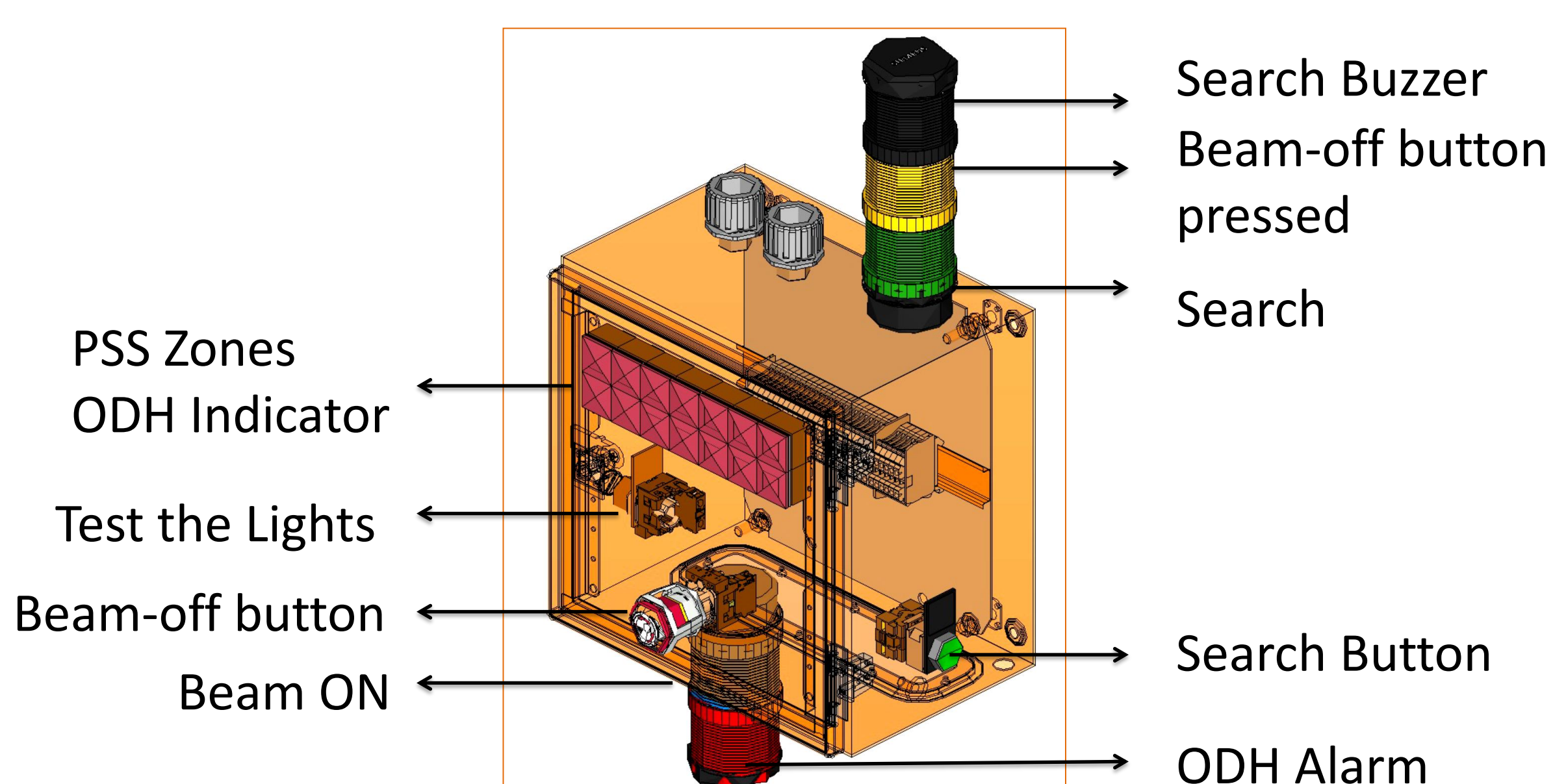


PSS cabinet Blue train

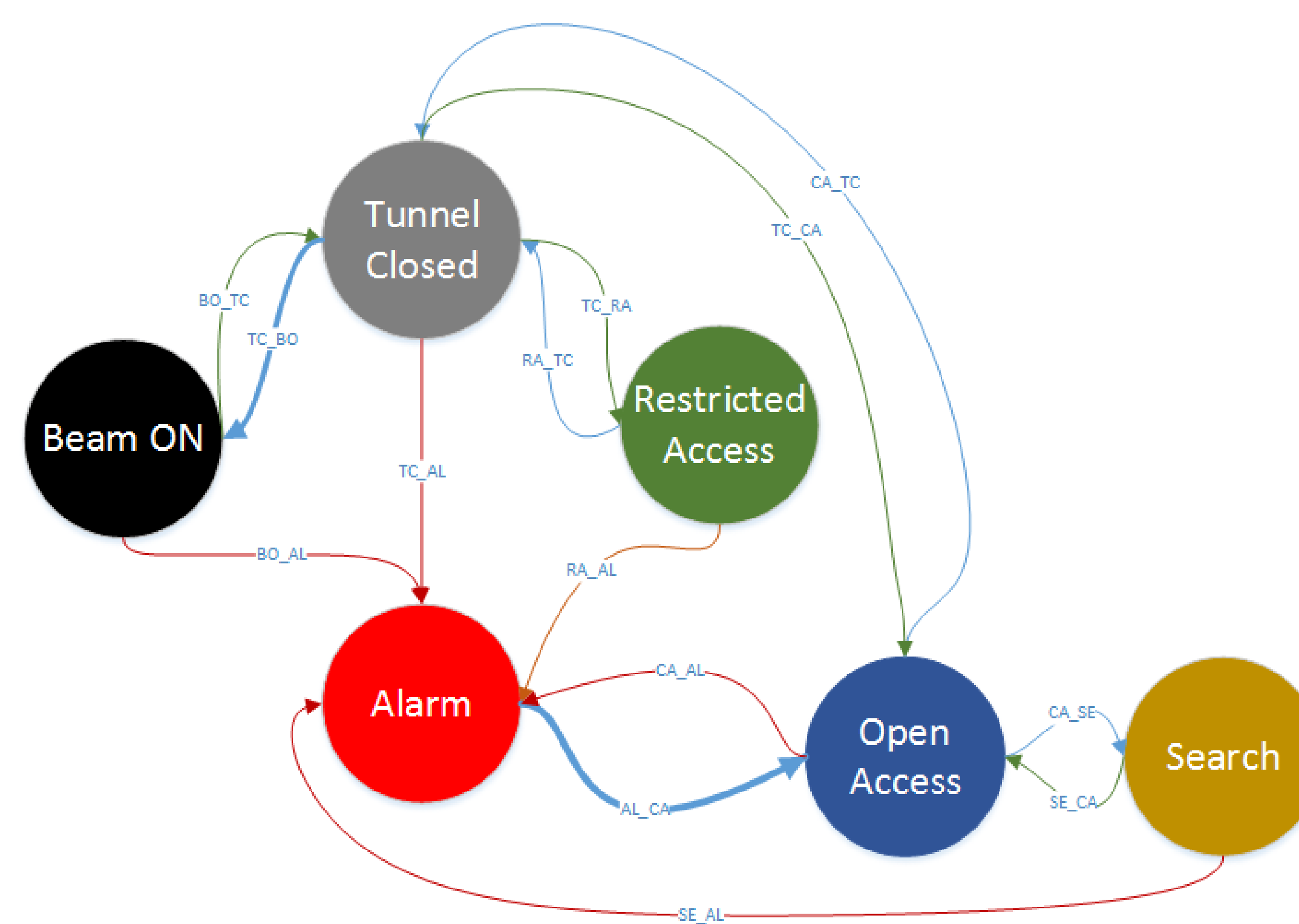
### Actuators

- RFQ Low Level RF (Yellow circle)
- HV equipment (Blue circle)
- RF system Low Level RF (Green circle)
- RF system modulator (Red circle)
- RFQ modulator (Blue circle)
- Ion Source HV Extraction System (Green circle)
- Ion Source Plasma Generator (Red circle)

### Beam-off station (BOS)



### PSS modes



#### Access Modes

**Open Access:** in this mode, personnel may get access to the PSS controlled areas through PSS access system. The swipe card system allows personnel access to PSS controlled areas upon identification.

**Restricted Access:** in this mode up to 2 people can have access to PSS controlled areas while carrying safety tokens with themselves (assuring that accelerator will never come back to operation unless the safety tokens are parked in their place again). The PSS controlled areas searched state is not broken during restricted access.

PSS mode	Access status	Hazardous EUC
Beam ON	No access	All ON
Tunnel Closed	No access	Only proton source plasma ON
Open Access	Allowed – no key required	Only proton source plasma ON
Search	Allowed – access through Section door	Only proton source plasma ON
Restricted Access	Allowed – max. 2 people at a time, key required	Only proton source plasma ON
Alarm	No access	All OFF