

IEC / IEEE 60802 - IA profile

Example for Configuration Model Alignment

-To be discussed-

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Basic scope

Assumptions:

- All managed objects are available as YANG
- IP based managed object access protocol defined
- IP suite available
- LLDP based TSN domain boundary detection available and working

Definition

Terms:

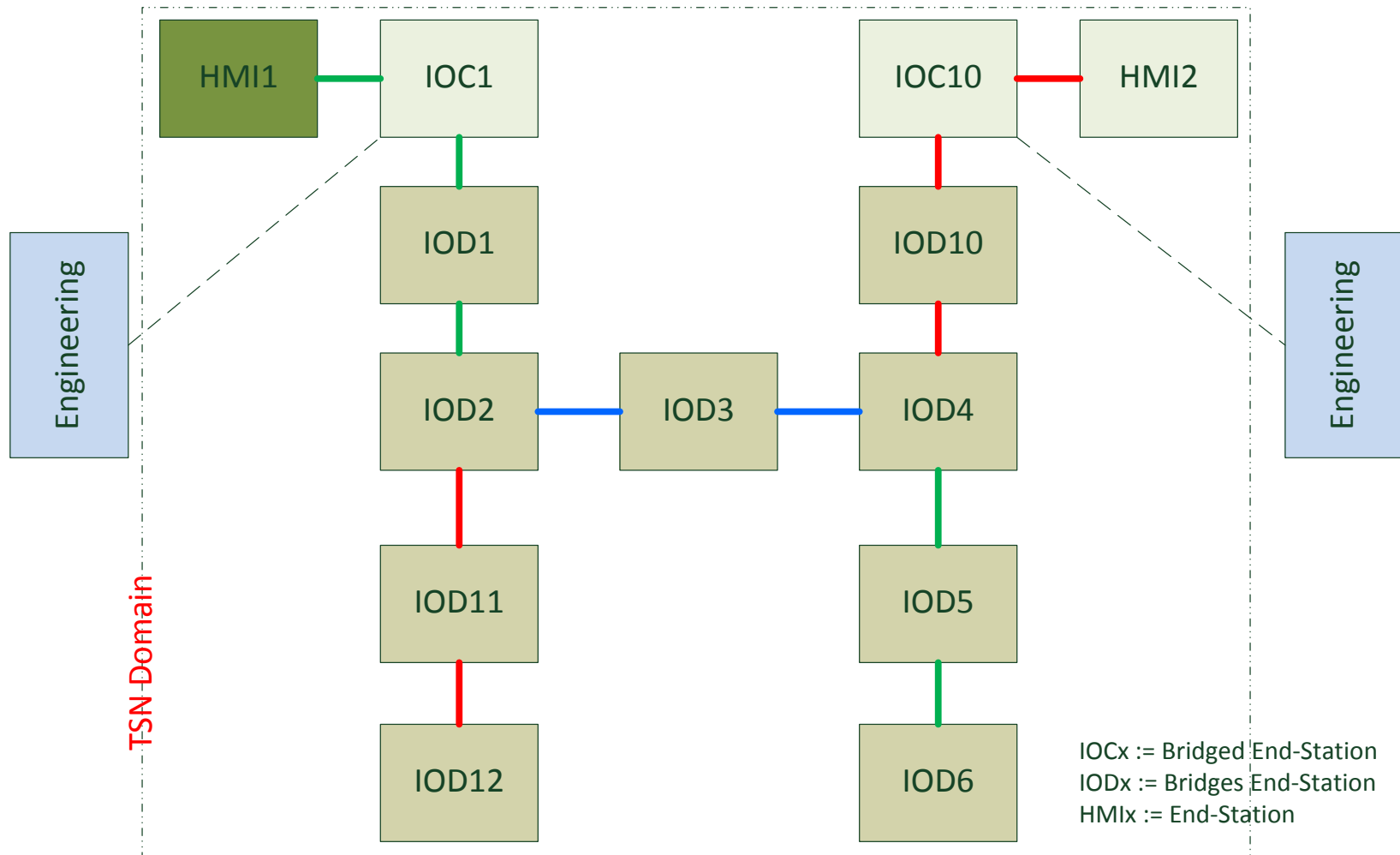
CNC

- Needed to load all static network configuration and stream configuration data into bridges and end-stations

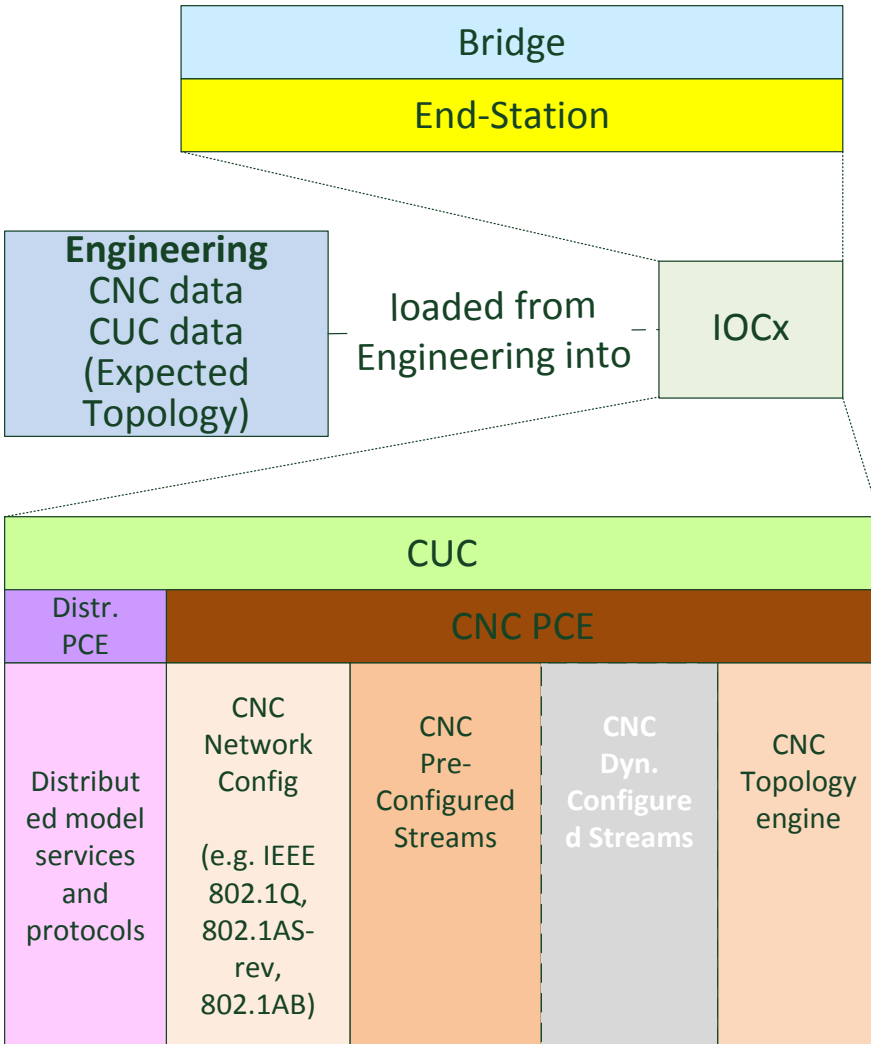
CUC

- Needed to load the individual communication relations into the end-stations

Example Topology 1



Network and Stream Configuration

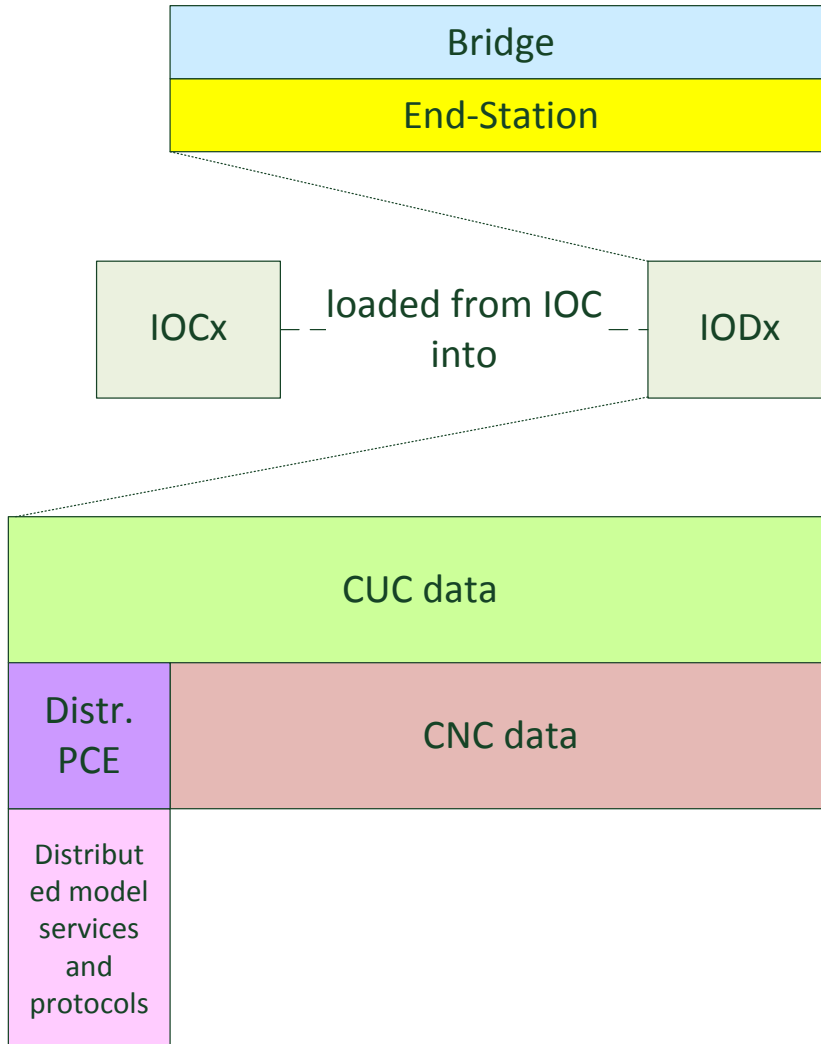


IOC loaded by engineering, with CUC, CNC and if required by customer with expected topology data. Engineering is afterward removed from the system.

IOCs topology engine discovers topology and uses it together with the loaded CNC data to create data which is loaded into any bridge and end-station.

IOCs CNC portion loads the bridge in the TSN domain and IOCs CUC portion the end stations with their stream information.

Network and Stream Configuration



IOD loaded by IOC, with CUC and CNC data. CNC data is persistent stored in IOD.

CNC data configures the local bridge and end-station.

CUC data is used for stream establishment and may be dynamically changed by the IOC over time.

Stream establishment - distributed

End-stations use a to be specified UNI interface defined for the distributed stream establishment to setup paths and streams.

Using CUC data and CNC data, e.g. network cycle, reduction ratio and sequence as criteria's.

Allows us to get rid of end-station -> CUC/CNC, together with the CNC -> CUC communication.

Stream establishment - centralized

Dynamic Stream establishment is not covered in this slide deck

Two (or more) IOCs

Each IOC is loaded from its Engineering with its devices and the TSN domain setup.

Thus, each IOCs CNC is able to configure all bridges and end-stations with the provided TSN domain CNC data, and uses its CUC data to setup the streams.

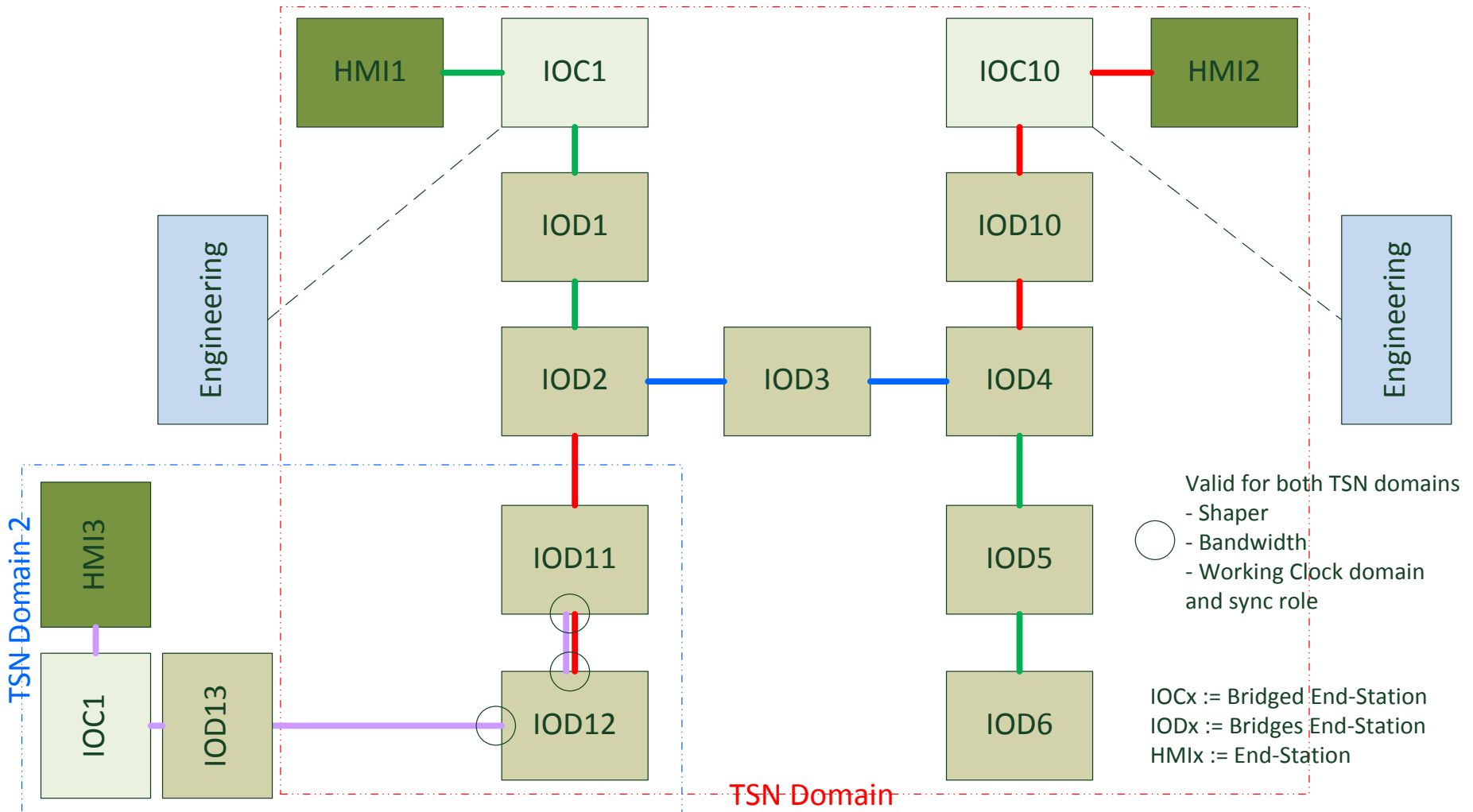
If two or more IOCs (and thus two or more CNCs) are in one TSN domain, each one is able to configure the whole TSN domain.

Multiple CNCs (together with multiple TSN-domains)

Open:

- How can multiple loading of CNC data into bridges and end-stations be avoided?
- How does inter-domain communication fit into this setup?
 - Assumption: Just another TSN-domain overlapping where CNC data could be check or aligned

Example Topology 2



Thank you

Questions?