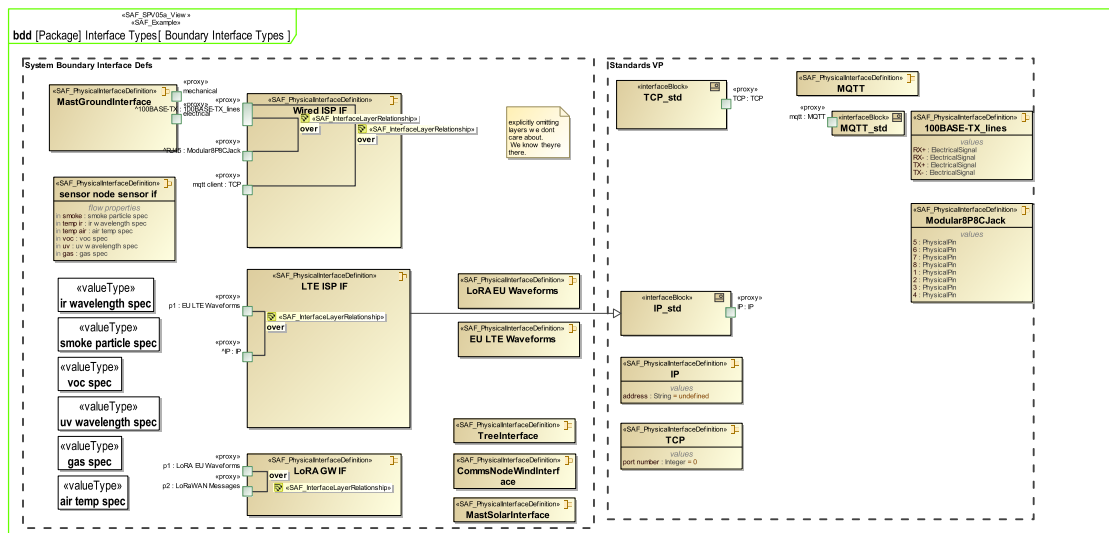


SAF User Documentation : Physical Interface Definition Viewpoint

Domain	Aspect	Maturity
Physical	Interface	 released

Example



The diagram illustrates a complex system architecture, likely for a smart home or industrial monitoring system. It is divided into several main functional blocks:

- ONVIF Camera Control:** This section includes a 'cam comput' block and an 'ONVIF Camera Controlled' block. It features a 'RelativeMove' block with a 'Stop' button and a 'Service-Spec.pdf' link. The 'ONVIF Camera Controlling' block has a 'flow properties' section with 'Start/Stop' and 'RelativeMove' options.
- CCU Net IF:** This block represents the central control unit's network interface. It includes a 'tcp client: TCP' block with a 'port number' of 1883 and a 'tcp client: TCP' block with a 'port number' of 8080. It also features a 'tcp client: TCP' block with a 'port number' of 8080.
- Sensor Readings Dev:** This block is responsible for reading data from various sensors. It includes a 'Sensor Readings Dev' block with a 'values' section and a 'Sensor Readings COTS' block with a 'values' section.
- LoRa Device IF:** This block handles communication with LoRa devices. It includes a 'LoRa Device IF' block with a 'LoRaWAN Message' section and a 'LoRaWAN Message' block.
- Power Jack:** This section shows the power supply for the system, including a 'POWER JACK' block and a 'POWER JACK' block.
- LoRa Device IF:** This block is a detailed representation of the LoRa device interface, showing the 'LoRaWAN Message' and 'LoRaWAN Message' blocks.

The diagram also includes a 'UNOFFICIAL ARDUINO MEGA PINOUT DIAGRAM' and a 'POWER JACK' section. The 'UNOFFICIAL ARDUINO MEGA PINOUT DIAGRAM' shows the pin connections for the Arduino Mega, including the 'GND' pin, 'VCC' pin, and 'I/O' pins. The 'POWER JACK' section shows the power supply for the system, including the 'POWER JACK' block and a 'POWER JACK' block.

Applicability

The Physical Interface Definition Viewpoint supports the "Create System Design " activity included in "Design Definition Process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2023 [§ 2.3.5.5] and contributes to the System Interface definition.

It also supports the "Interface Management" method of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2023 [§ 3.2.4].

Presentation

A block definition diagram (BDD) featuring Physical Interface blocks with ports and flow properties. Compatibility between Physical Interface blocks is expressed by associations and association blocks. Physical Interface blocks may be specialisations of others (use of Generalisation). Note: When ports are used these shall be proxy ports and be typed by interface blocks.

A tabular format listing Physical Interface blocks, their ports, and flow properties.

Stakeholder

- [Hardware Developer](#)
- [Mechanic Developer](#)
- [Safety Expert](#)
- [Security Expert](#)
- [Software Developer](#)
- [System Architect](#)

Concern

- [What are the protocols used for exchanging information?](#)
- [Which kind of physical items \(energy, material, information, etc.\) are used in the physical architecture of the system?](#)
- [what are the interface definitions for the physical architecture](#)

Profile Model Reference

The following Stereotypes / Model Elements are used in the Viewpoint:

- FlowProperty [SysML Profile]
- FlowProperty contained in SAF_PhysicalInterfaceDefinition
- ProxyPort [SysML Profile]
- ProxyPort typed by SAF_PhysicalInterfaceDefinition
- SAF_PhysicalInterfaceDefinition contained in ProxyPort
- [SAF_InterfaceLayerRelationship](#)

- [SAF_PhysicalExchangeType](#)
- [SAF_PhysicalInterfaceDefinition](#)
- [SAF_SPV05a_View](#)

Input from other Viewpoints

Required Viewpoints

none

Recommended Viewpoints

none