

SpaceWire Evolution

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Cables and Connectors



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SpaceWire Lab Cable

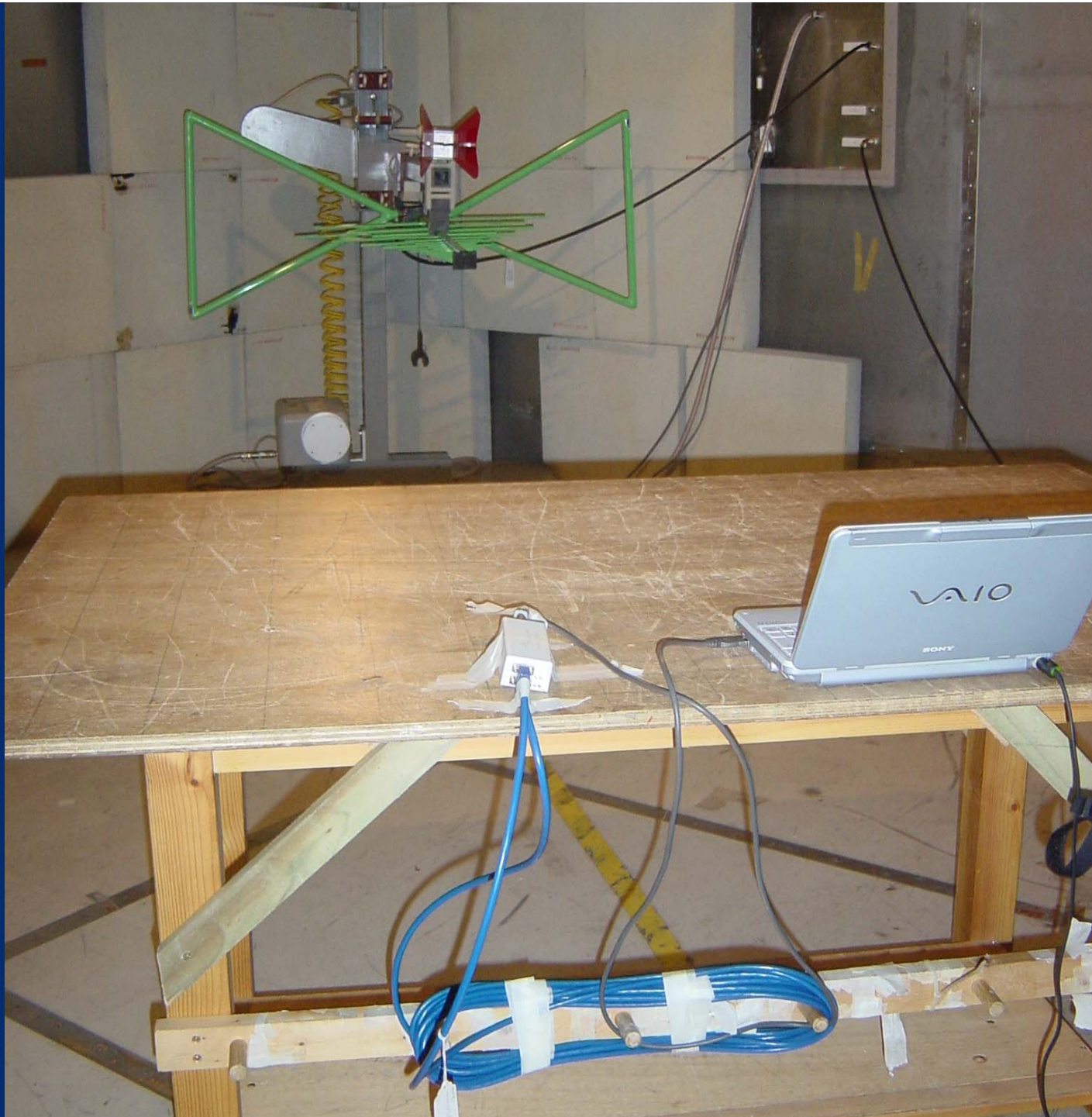


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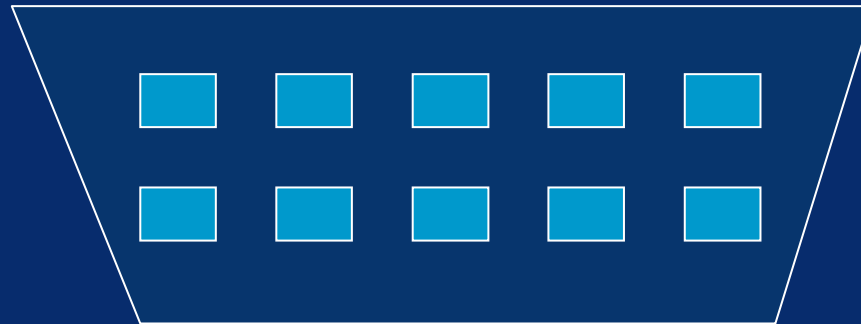




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Cable and Connectors

- Larger, lower attenuation cable?
 - for longer lengths?
- Smaller, lighter cable?
- Matched impedance connectors?
 - Bulkhead
 - Unit





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SpaceWire Backplanes

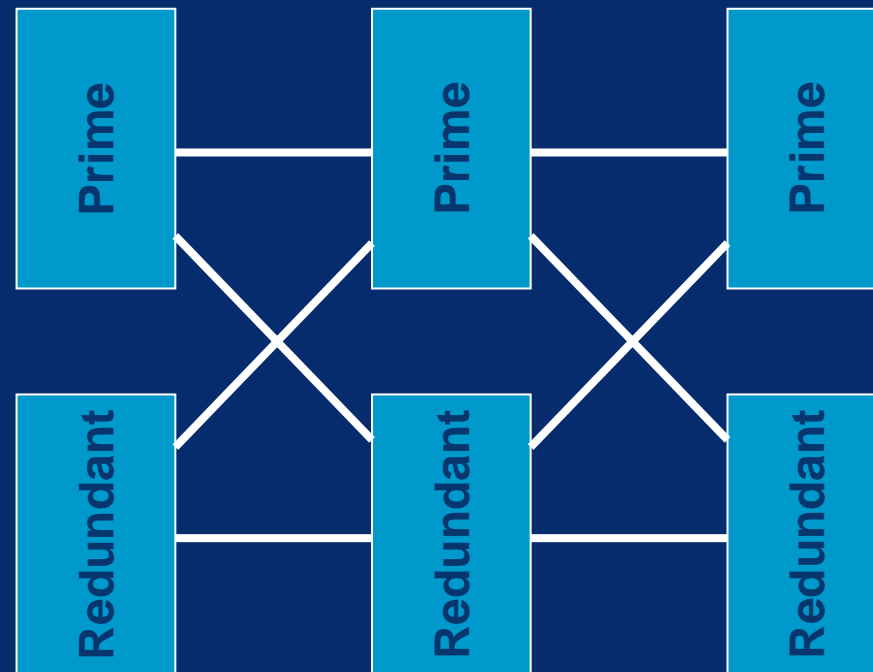
- Connecting SpaceWire boards
- Within a unit
- Standard method of connecting boards



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SpaceWire Backplanes

- Redundant cross over

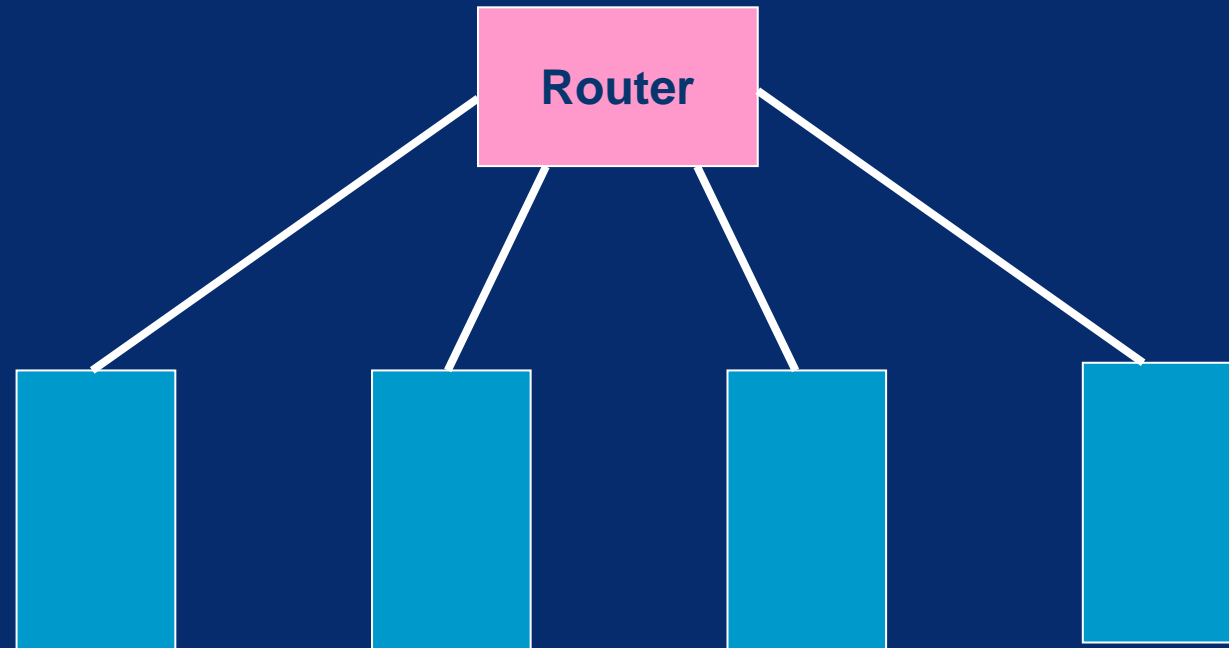




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SpaceWire Backplanes

- Active Backplane

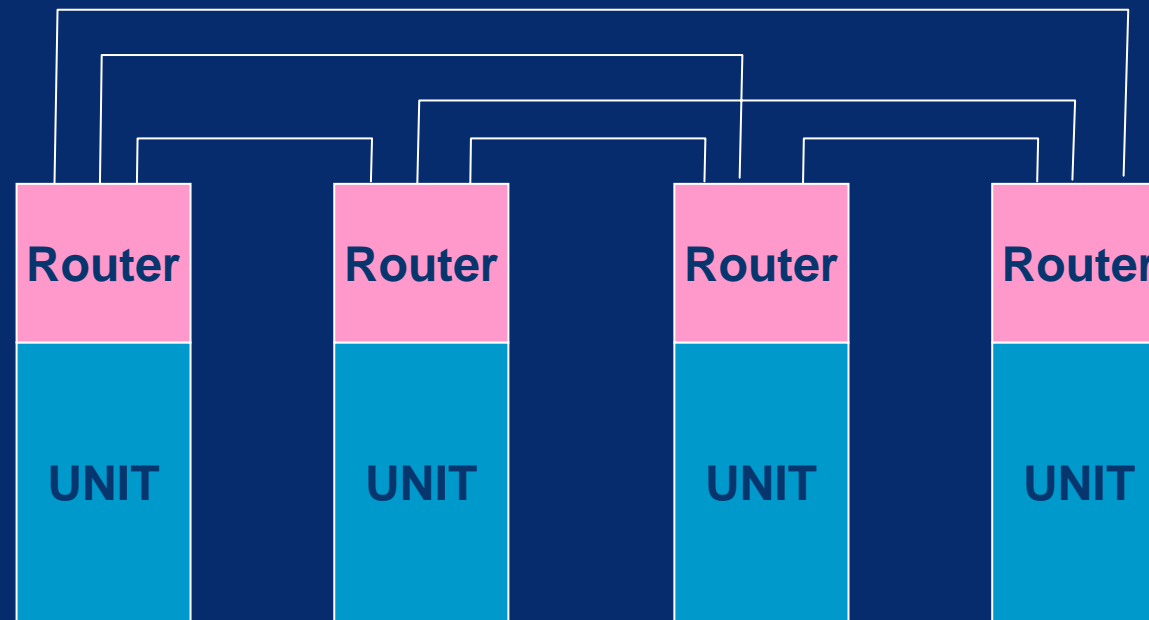




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SpaceWire Backplanes

- Passive Backplane Active Units





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SpaceWire Backplanes

- Impedance matched, rugged connectors?
- Board interface standard?
 - Multiple SpaceWire interfaces
 - Power
 - Other signals
 - Board profile

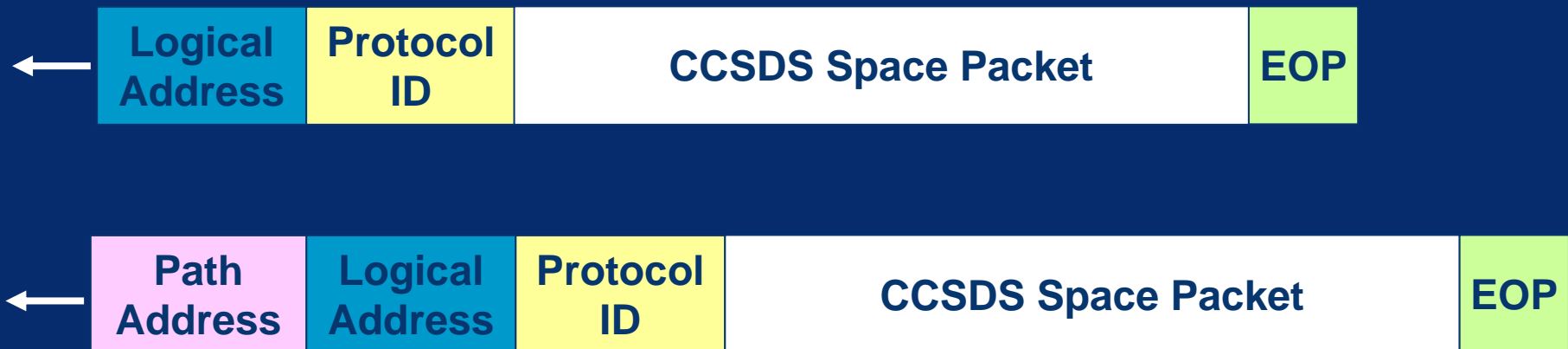


Common configuration and board/unit ID

- Identification mechanism for board
- Configuration space via RMAP
- Status information via this space too
- Board initialisation protocols
- Built in test facilities

CCSDS Space Packets Encapsulation

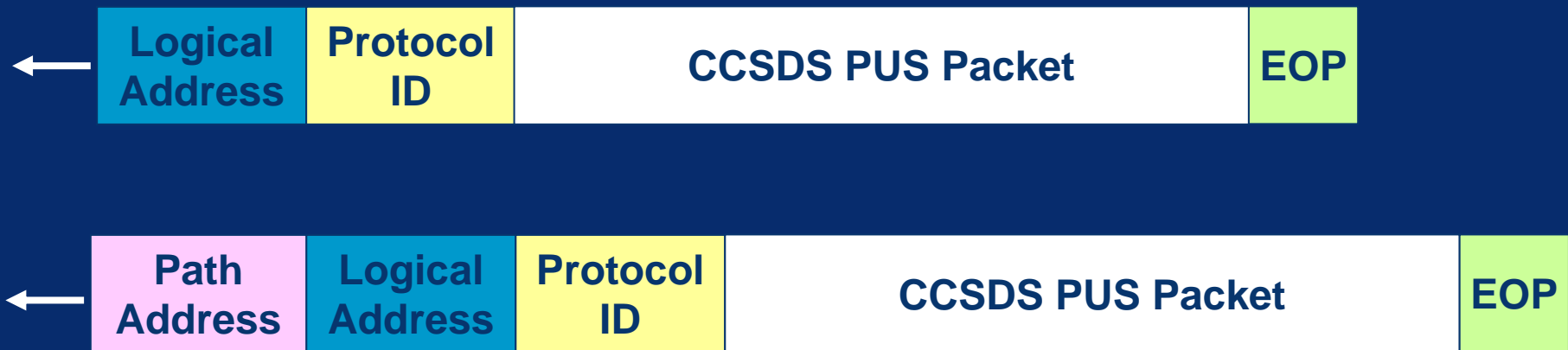
- Standard form for encapsulating CCSDS Space Packets
- For example



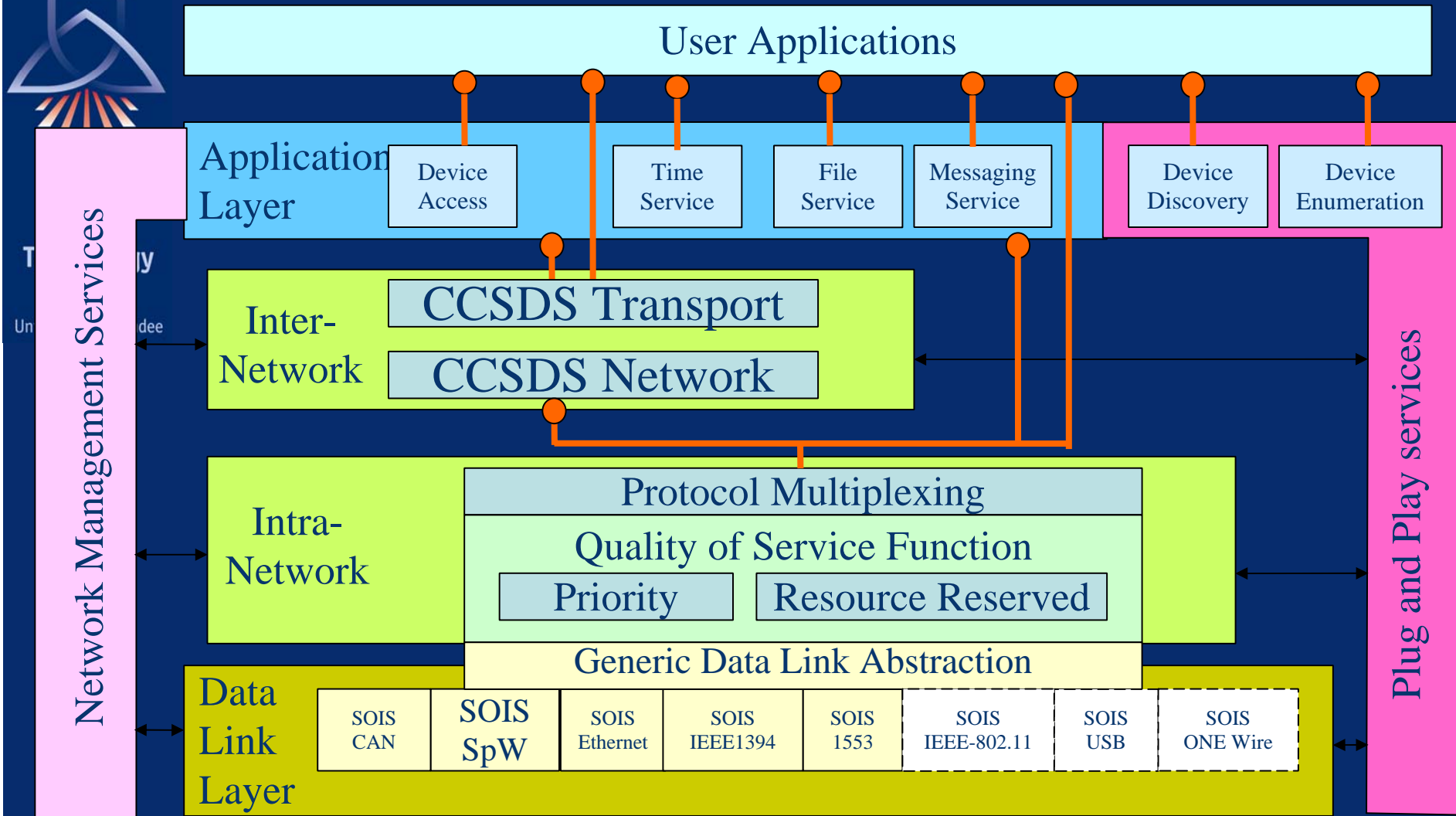


CCSDS PUS Encapsulation

- Standard form for encapsulating CCSDS PUS Packets
- For example



CCSDS SOIS TCONS/OBL



● Denotes service access point



SpaceFibre

- Higher data rate
- Galvanically isolated
- Significantly lower mass cable

- Is there a need for this type of system?
- Can the components be made suitable for space?
- Interaction with SpaceWire?



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Standard Configuration Space

- Network discovery (and checking)
- Standard configuration information