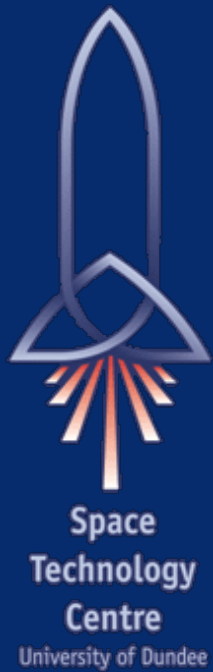


# SpaceWire-D Current Status

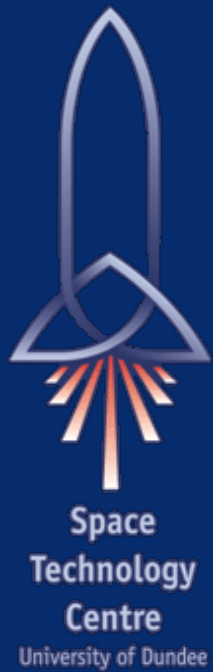
Steve Parkes

Space Technology Centre, University of Dundee



# SpW-D Specification Status

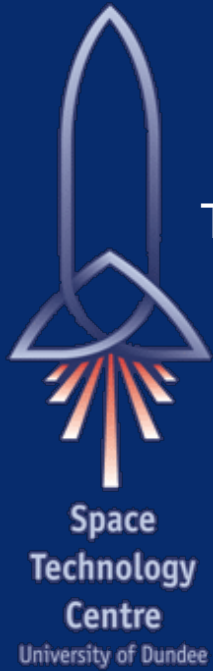
- SpW-D specification document
  - About half finished
  - Written in ECSS format
- Currently working on service interface specifications



# Principles

- Existing SpaceWire
  - Networks
  - RMAP target devices
- Long time-slots
  - Typically in 1-20 ms region
  - Allows time for software interrupt response
    - Software driven initiators
    - Software based targets
  - Time-slot interval is a system parameter
  - Multiple transactions in a time-slot
- FDIR
  - Using replies from RMAP commands

# Multiple Transactions in Single Time-Slot



Time-Code

Time-Code

CMD

CMD

CMD

RPY

RPY

RPY

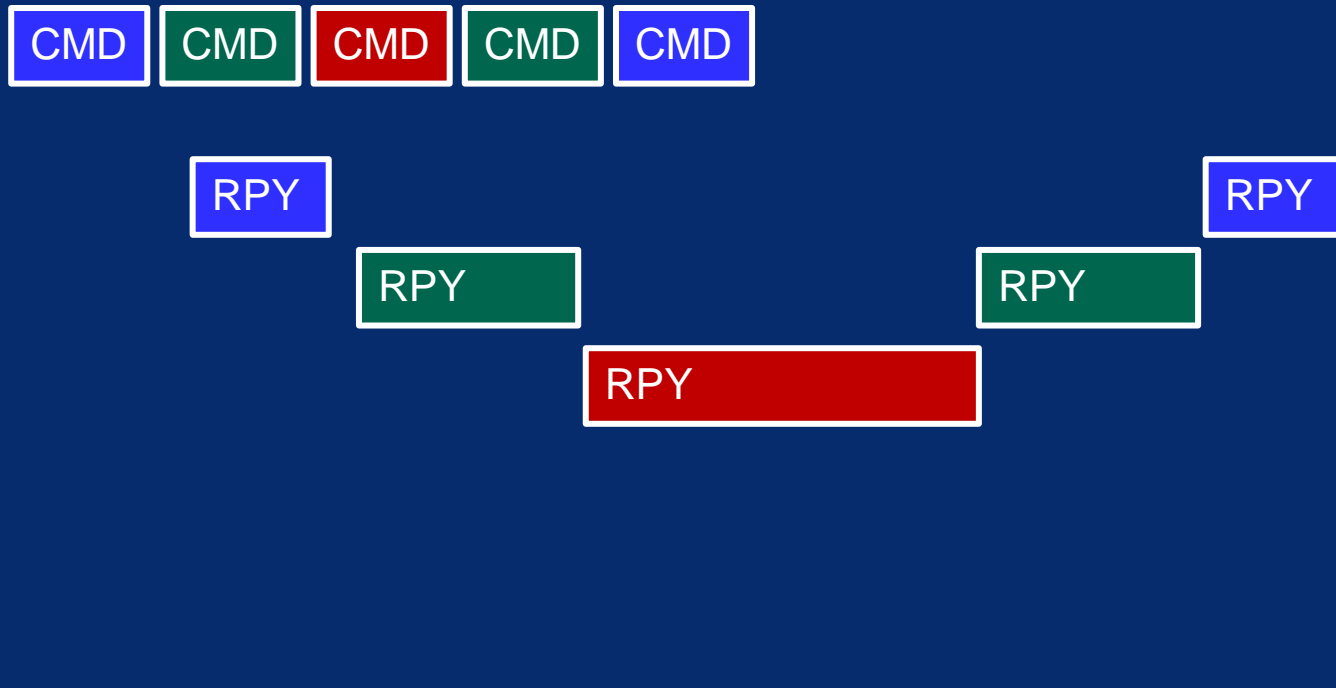
# Multiple Transactions in Single Time-Slot

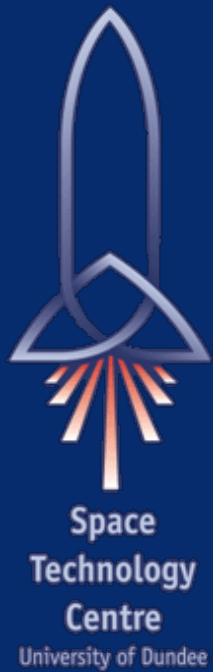


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Time-Code

Time-Code

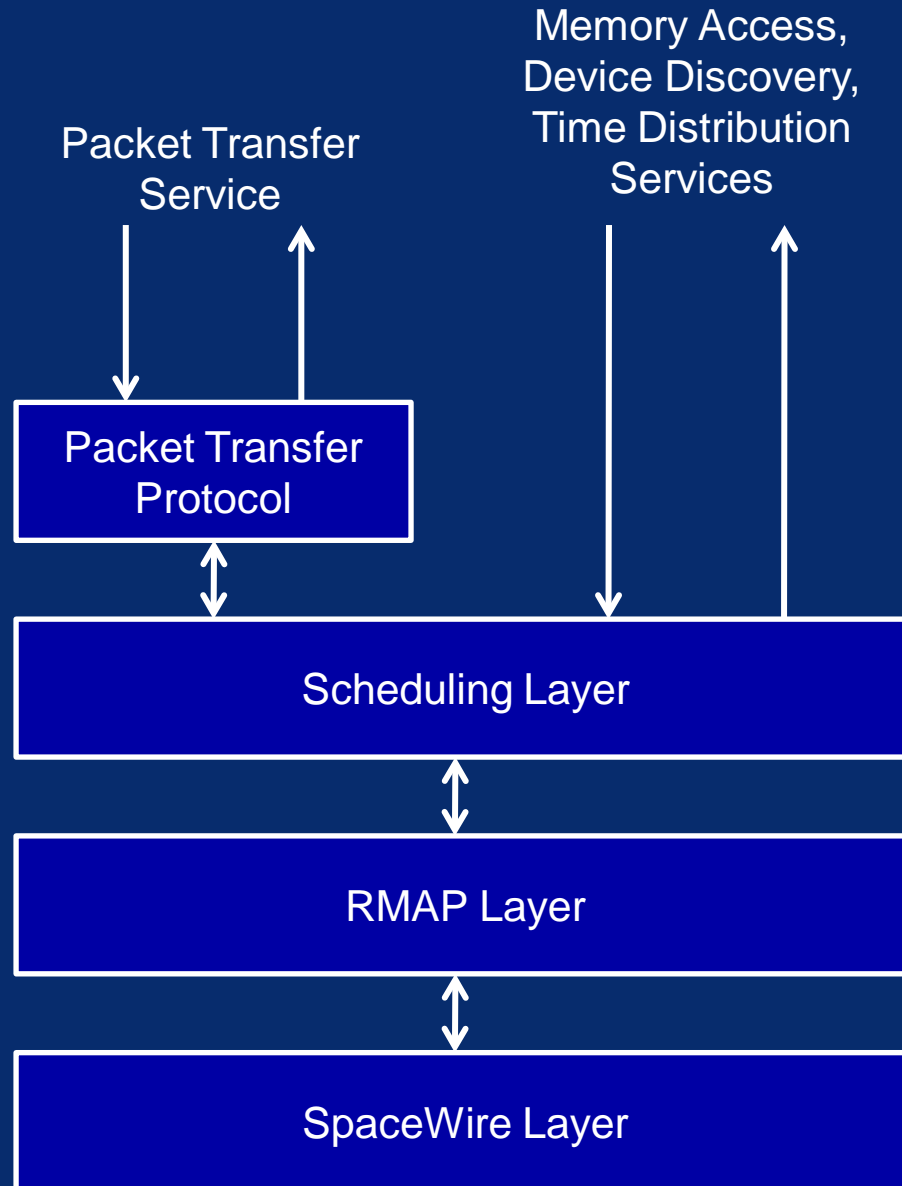
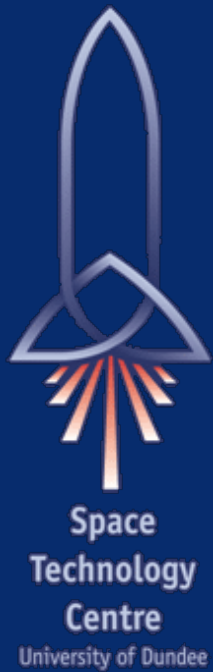


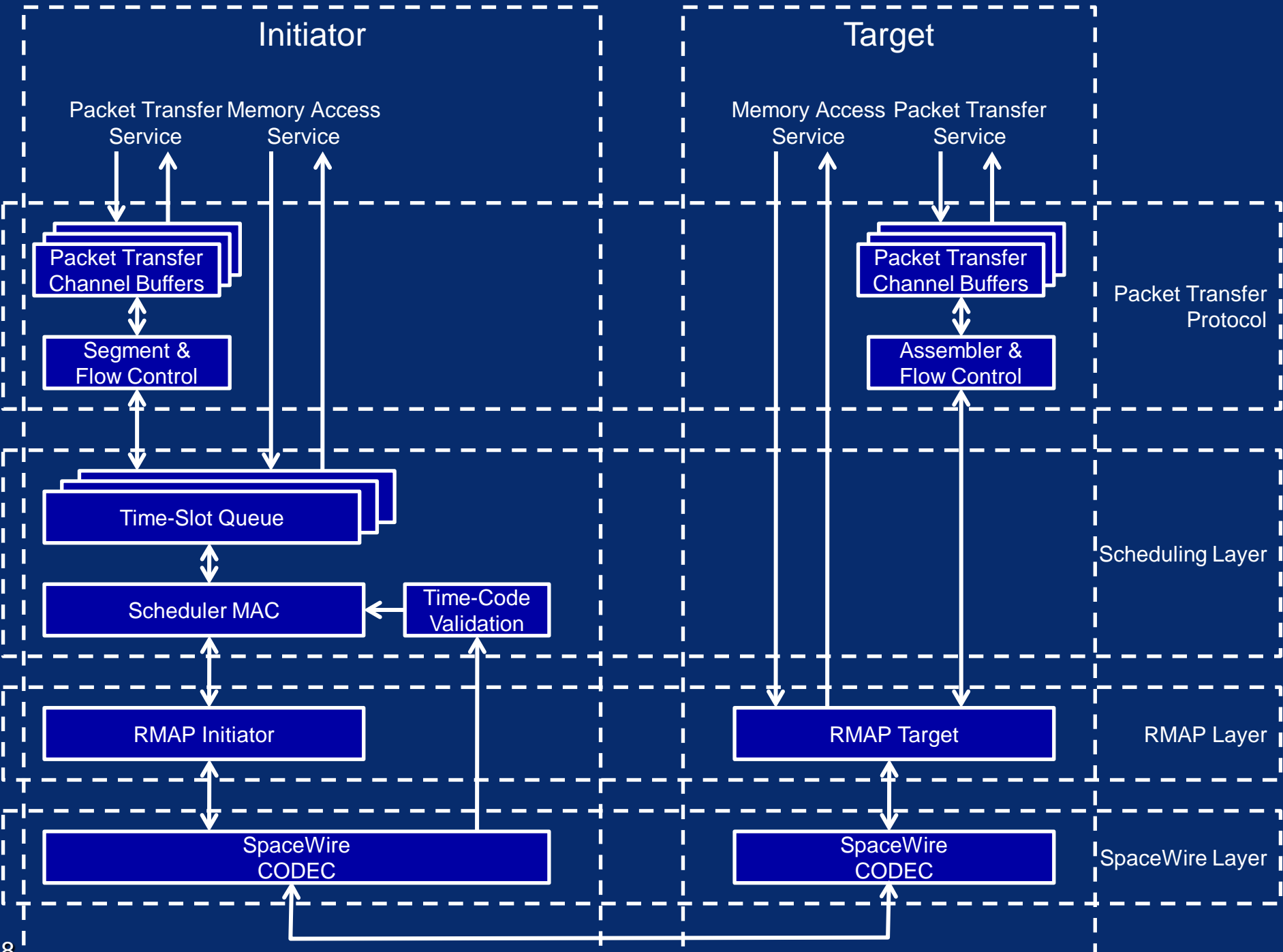


# SpaceWire-D Services

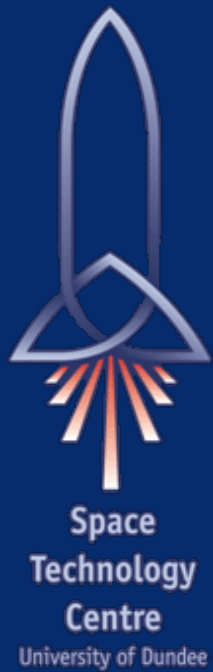
- Write to memory in remote node;
- Read from memory in remote node;
- Read-Modify-Write memory in remote node;
- Configure packet transfer channel;
- Send an application packet to a remote node;
- Read an application packet from a remote node;
- Distribute time information over a network;
- PnP related services (TBD).

# SpaceWire-D Protocol Stack









## Conclusion

- Work progressing on SpaceWire-D
- More slowly than I would have liked
- Currently focused on
  - Service interface specifications
    - Particularly related to schedule definition
  - Packet Transfer Protocol
  - FDIR