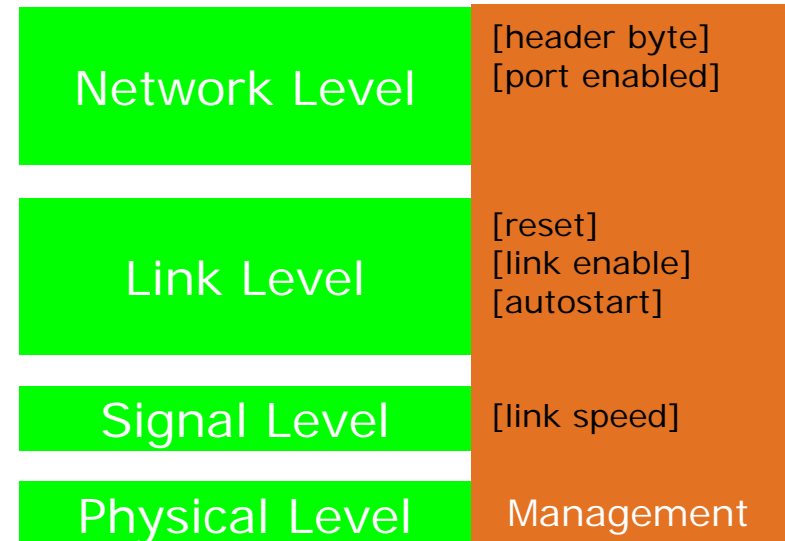
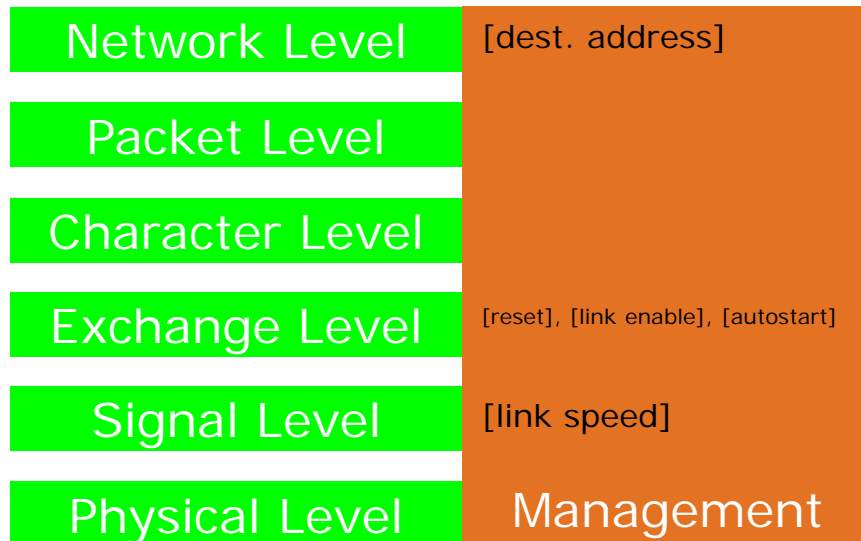


# SpaceWire-based Protocols (SbP) stack with a focus on management protocols

David Jameux  
ESTEC  
11/04/2013

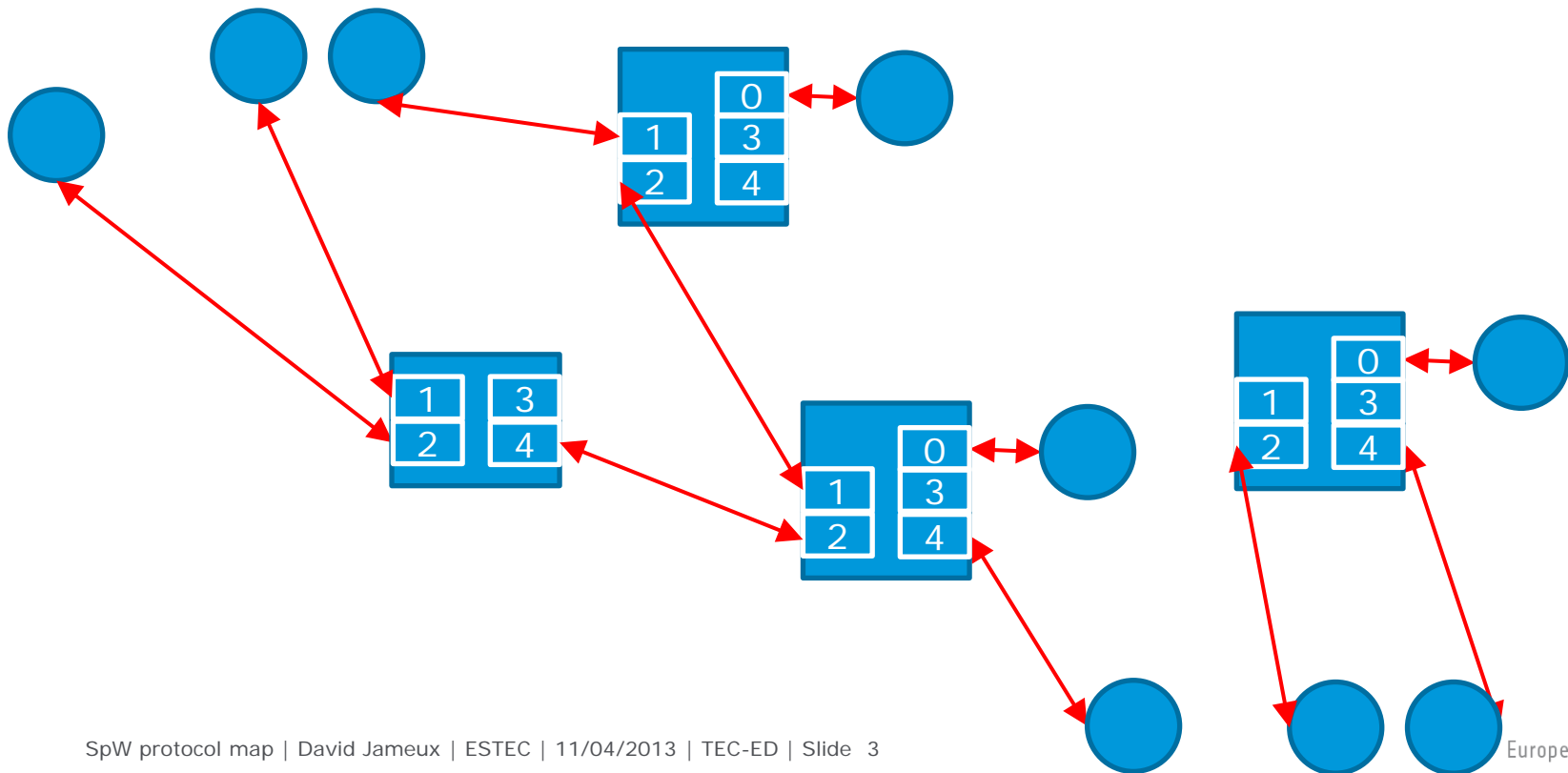
# Lack of management service for SpW



# Need for topology representation

1. For (re)configuration
2. Nicely supported by network discovery

## GRAPH



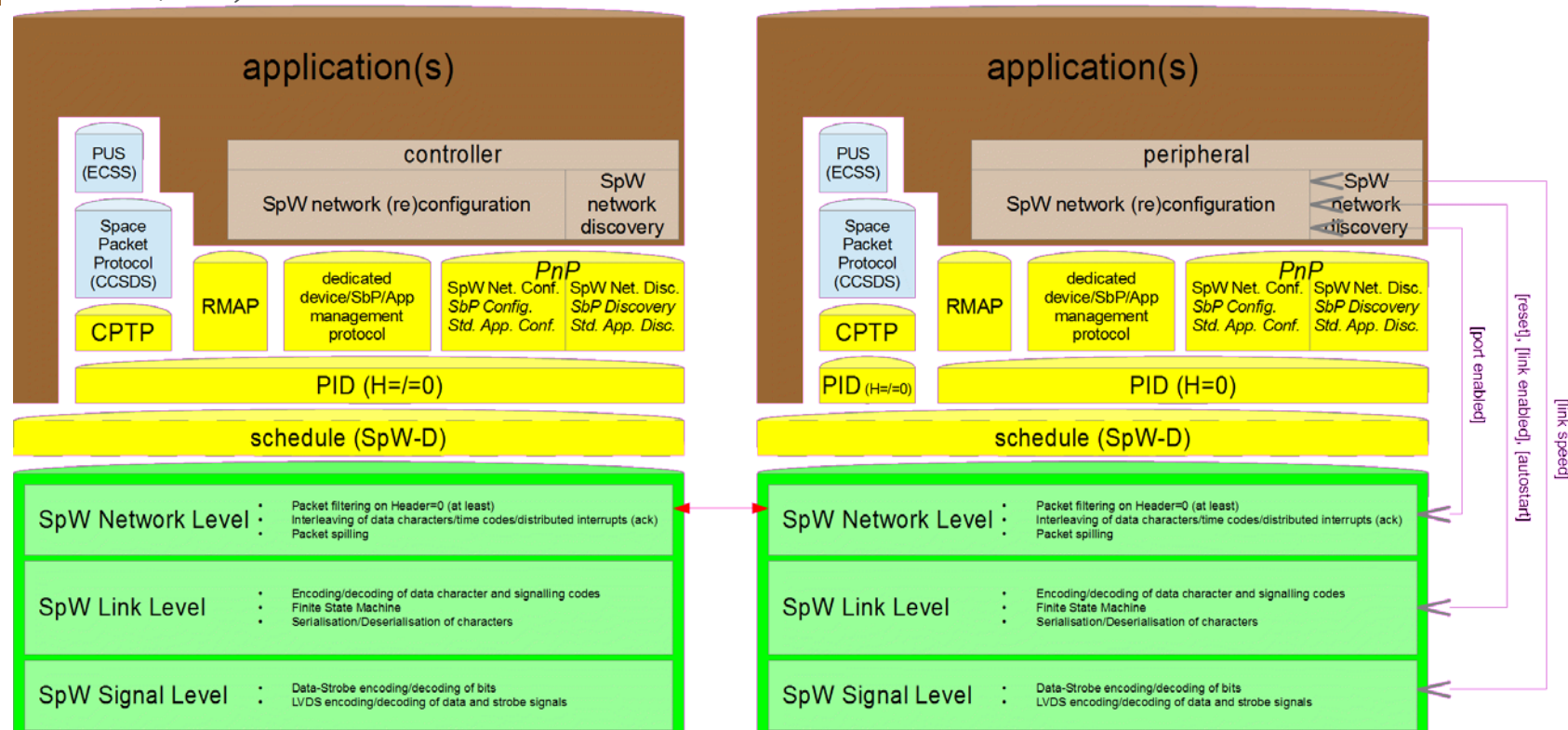
# TRP - Network Discovery Protocols (1)

SpW

SbP

S/C

1. Target = PnP for SpaceWire -> SpW Net. Discovery + SpW (device) Configuration
2. Tempting: Discovery and Configuration of SpW-Based Protocols (PnP itself, RMAP, more to come)
3. Tempting: discovery and configuration of standard applications (Net. Mgt Service itself, Packet Store, etc.)



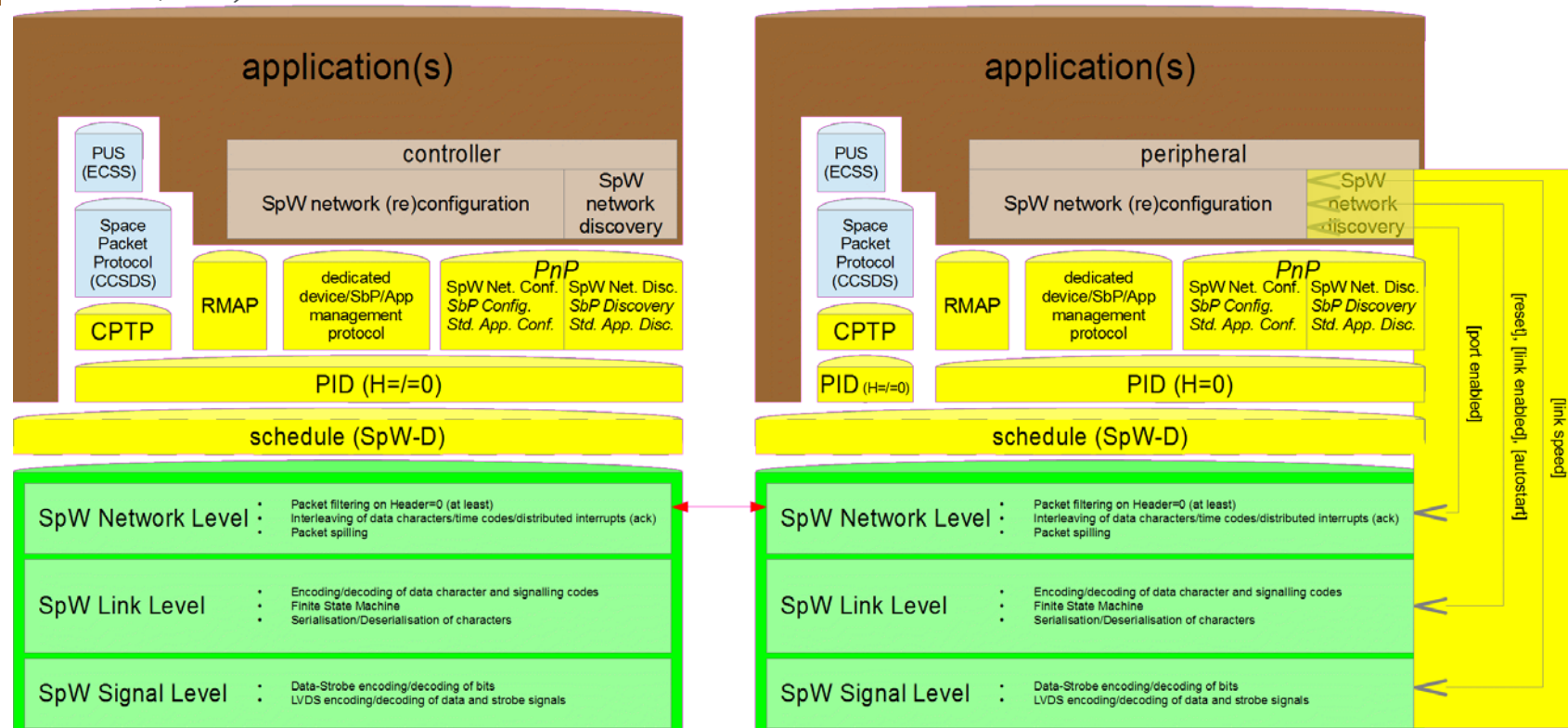
# TRP - Network Discovery Protocols (2)

SpW

SbP

S/C

1. Target = PnP for SpaceWire -> SpW Net. Discovery + SpW (device) Configuration
2. Tempting: Discovery and Configuration of SpW-Based Protocols (PnP itself, RMAP, more to come)
3. Tempting: discovery and configuration of standard applications (Net. Mgt Service itself, Packet Store, etc.)



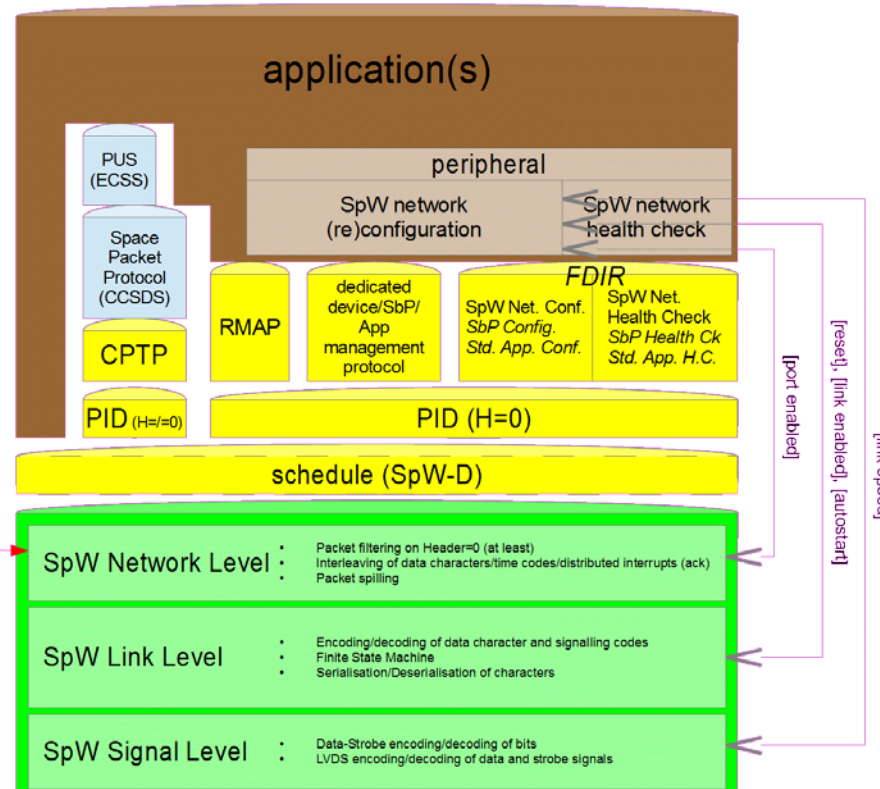
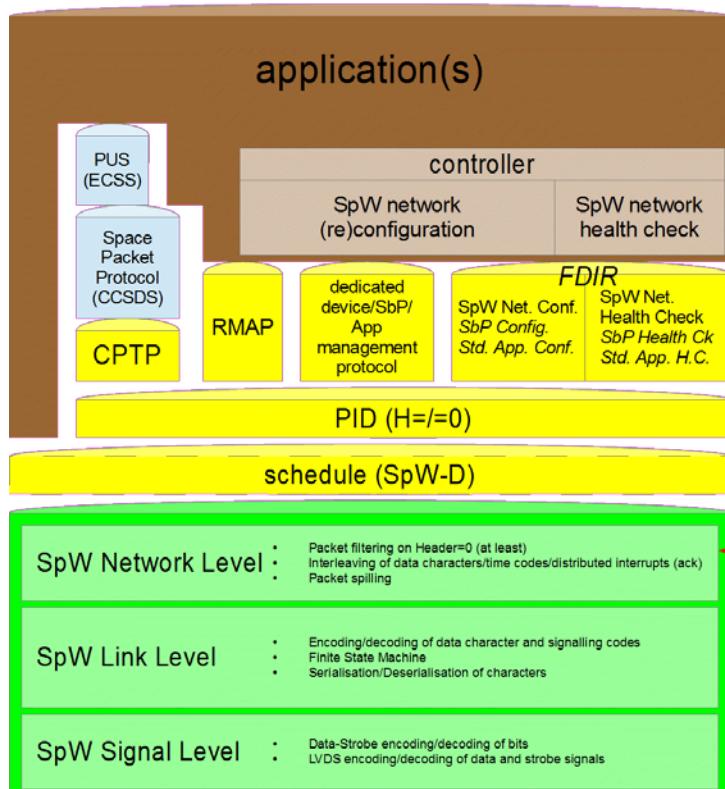
# TRP – FDIR for SpW Networks (1)

SpW

SbP

S/C

1. Target = FDIR for SpaceWire -> continuous SpW Net. Health Check + SpW (device) Configuration
2. Tempting: continuous health check and reconfiguration of SpW-Based Protocols (RMAP, more to come)
3. Tempting: continuous health check and reconfiguration of standard applications (Time Synch Error, Software Error, Node Heartbeat, Node Boot Fail, Node Reset)



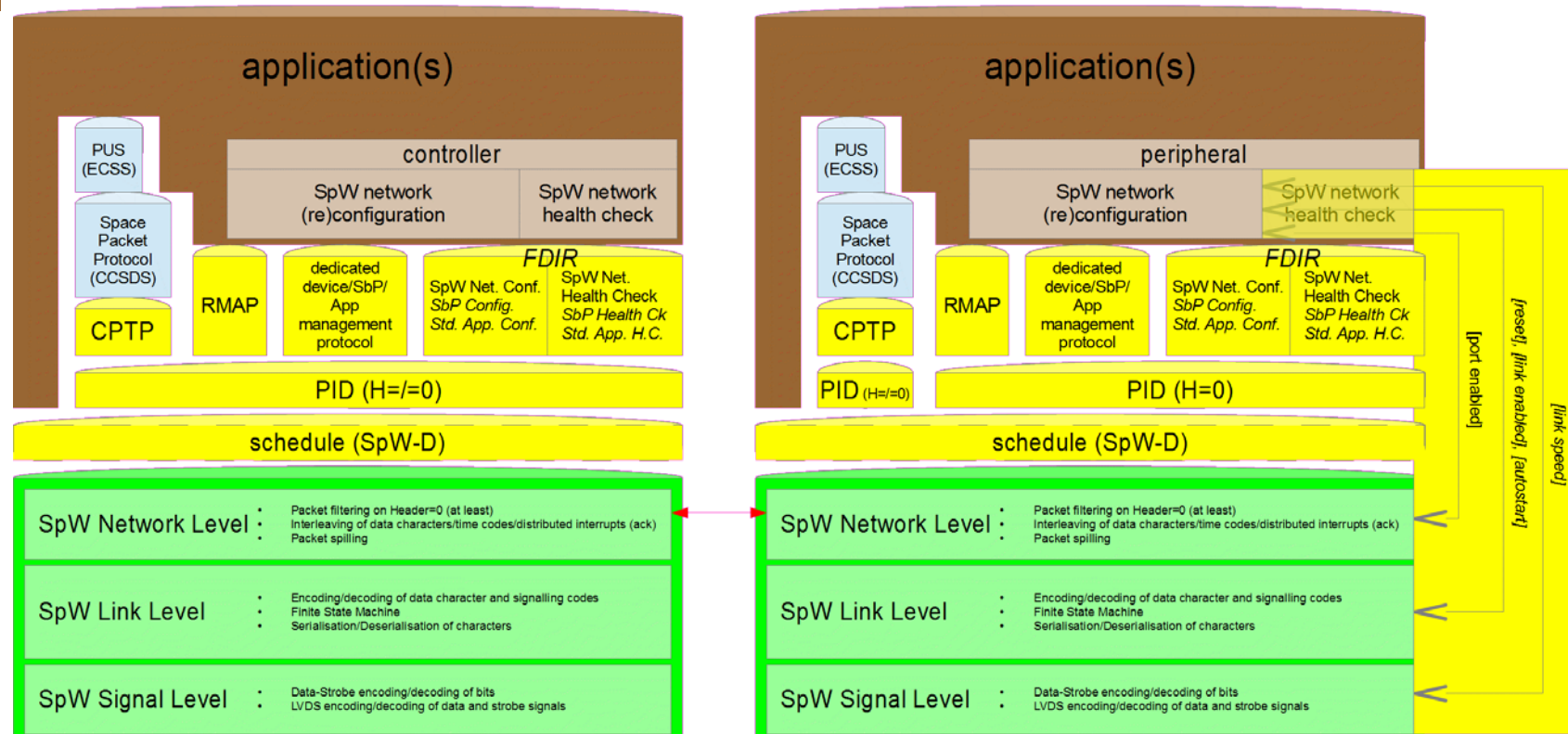
# TRP – FDIR for SpW Networks (2)

SpW

SbP

S/C

1. Target = FDIR for SpaceWire -> continuous SpW Net. Health Check + SpW (device) Configuration
2. Tempting: continuous health check and reconfiguration of SpW-Based Protocols (RMAP, more to come)
3. Tempting: continuous health check and reconfiguration of standard applications (Time Synch Error, Software Error, Node Heartbeat, Node Boot Fail, Node Reset)





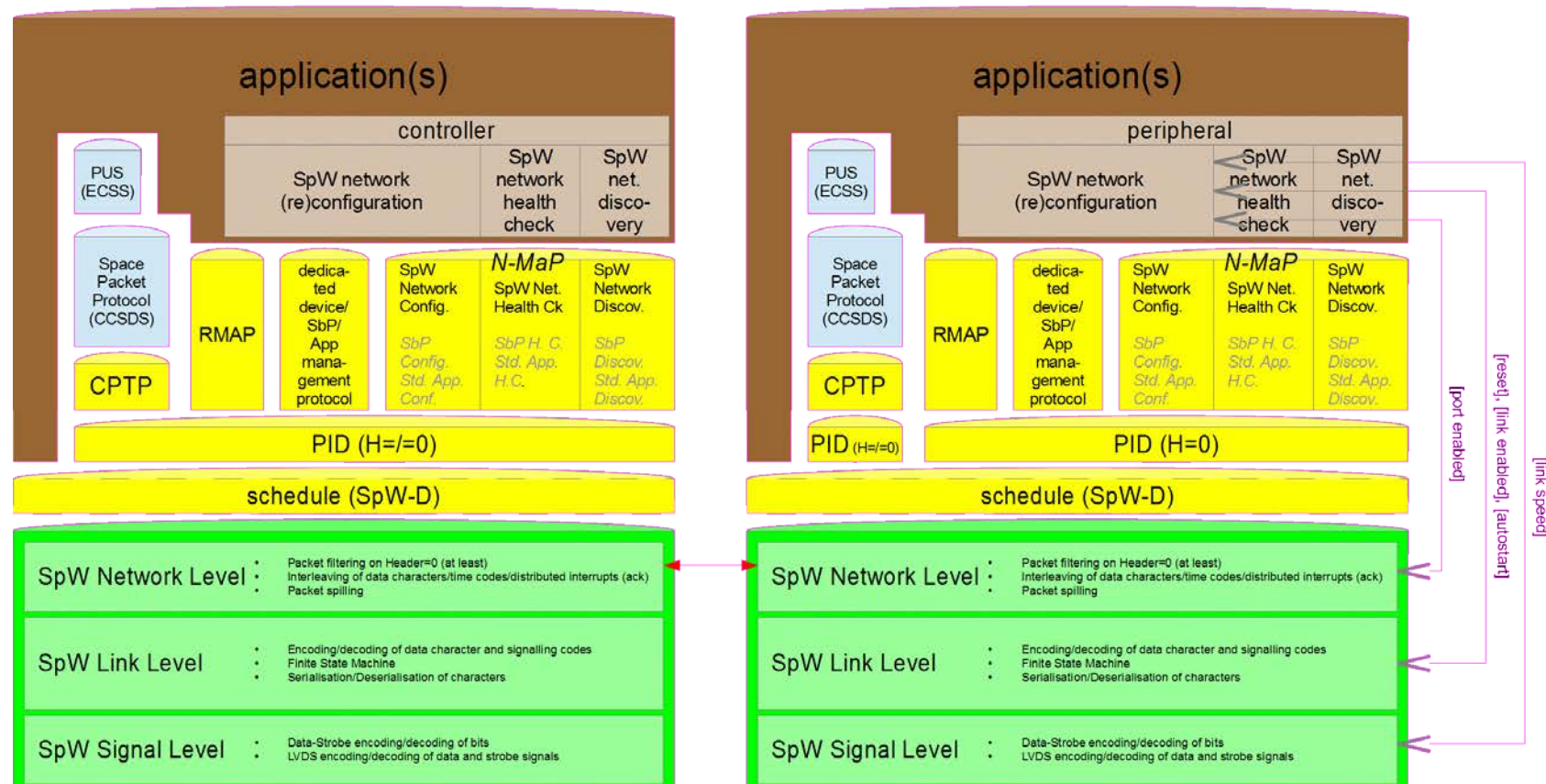
# TRP/GSTP convergence activity

## SpW Network Management Service Suite (SpW N-MaSS) (1)



SpW

1. Target 1 = PnP + FDIR for SpaceWire -> SpW Net. Discovery + continuous SpW Net. Health Check + SpW (device) Configuration





# TRP/GSTP convergence activity

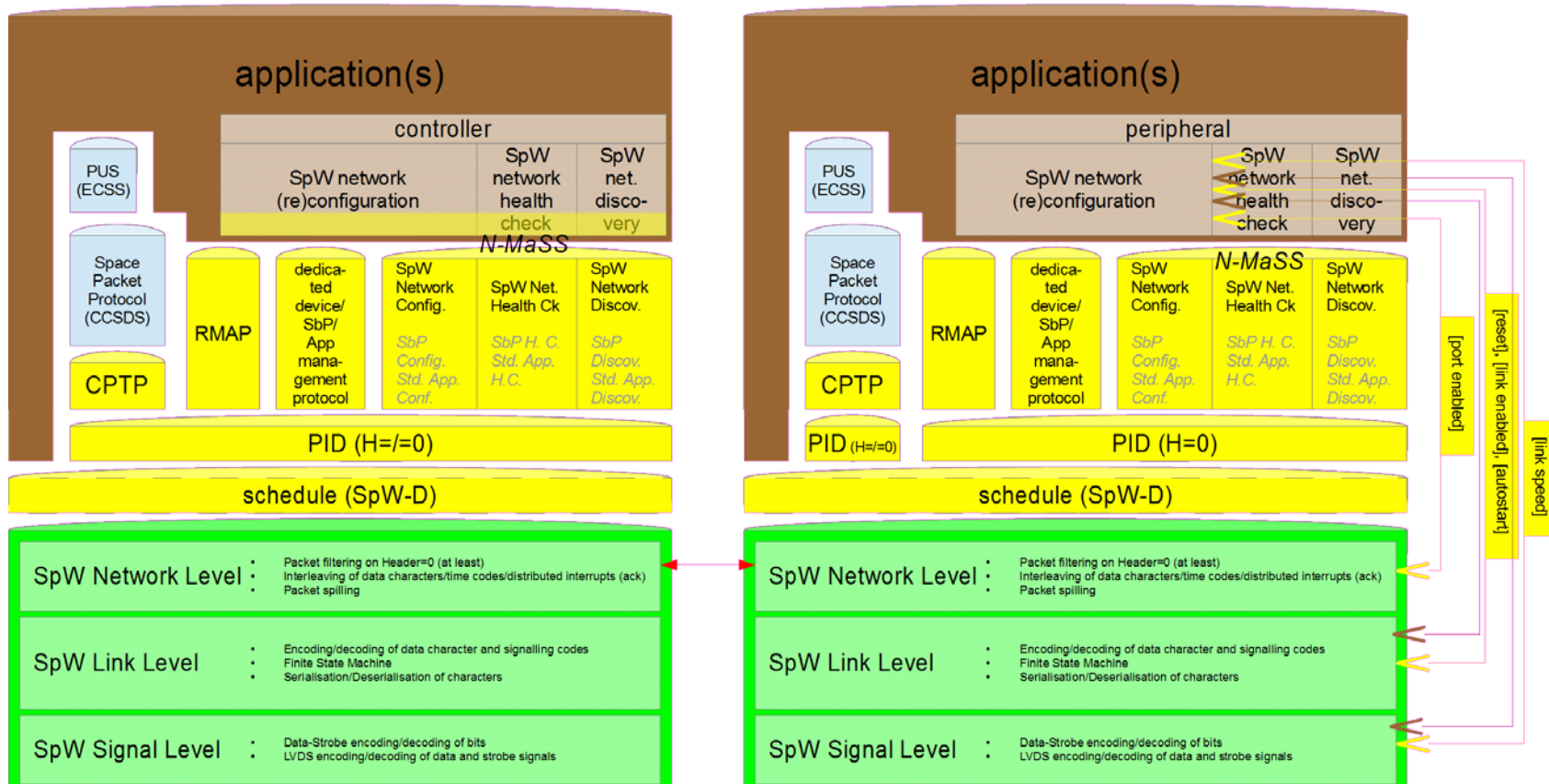
## SpW Network Management Service Suite (SpW N-MaSS) (2)



SpW

S/C

1. Target 1 = PnP + FDIR for SpaceWire -> SpW Net. Discovery + continuous SpW Net. Health Check + SpW (device) Configuration
2. Target 2 = standardisation of management interfaces and services



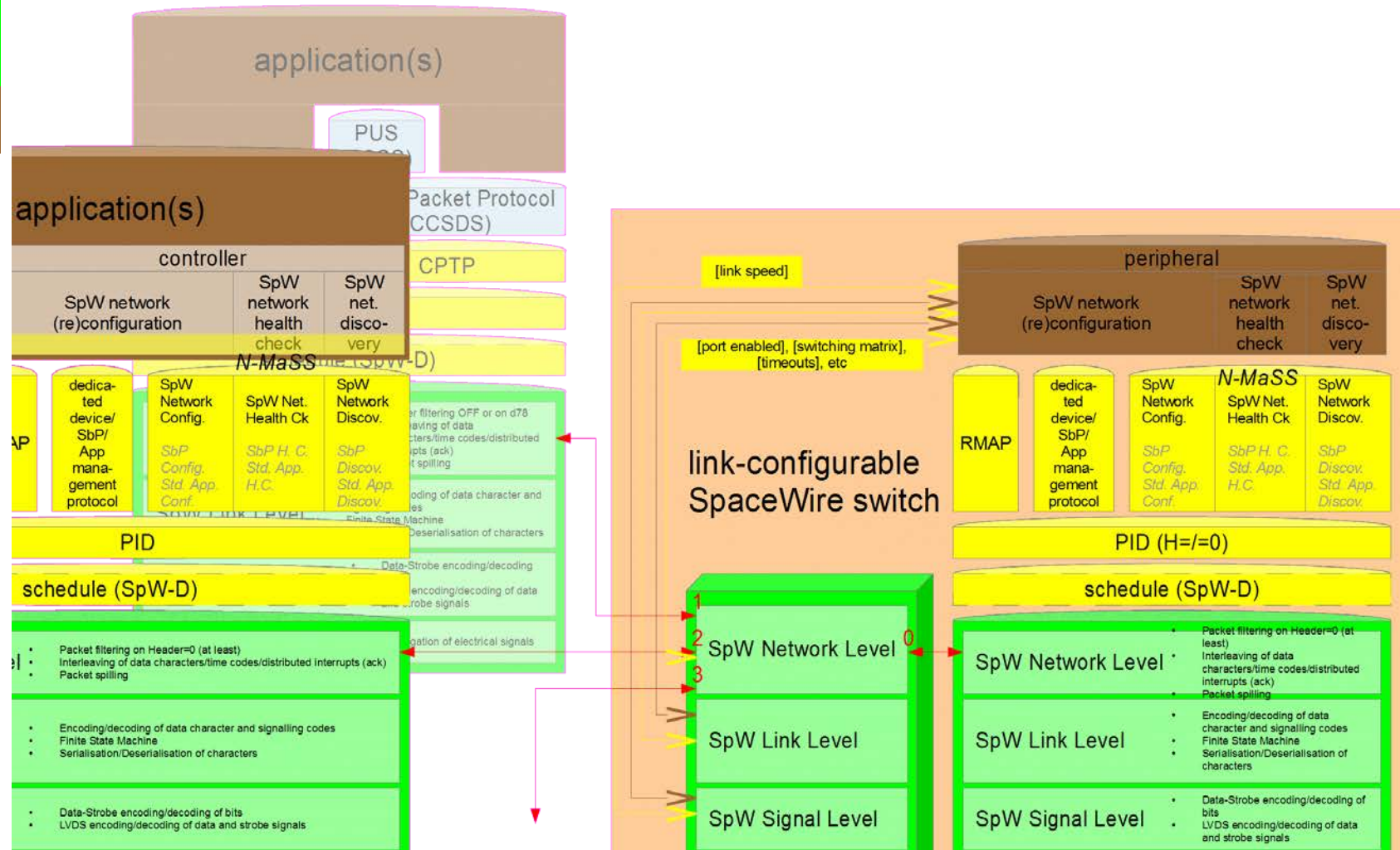
# TRP/GSTP convergence activity

## SpW Network Management Service Suite (SpW N-MaSS) (3)



SpW

S/C

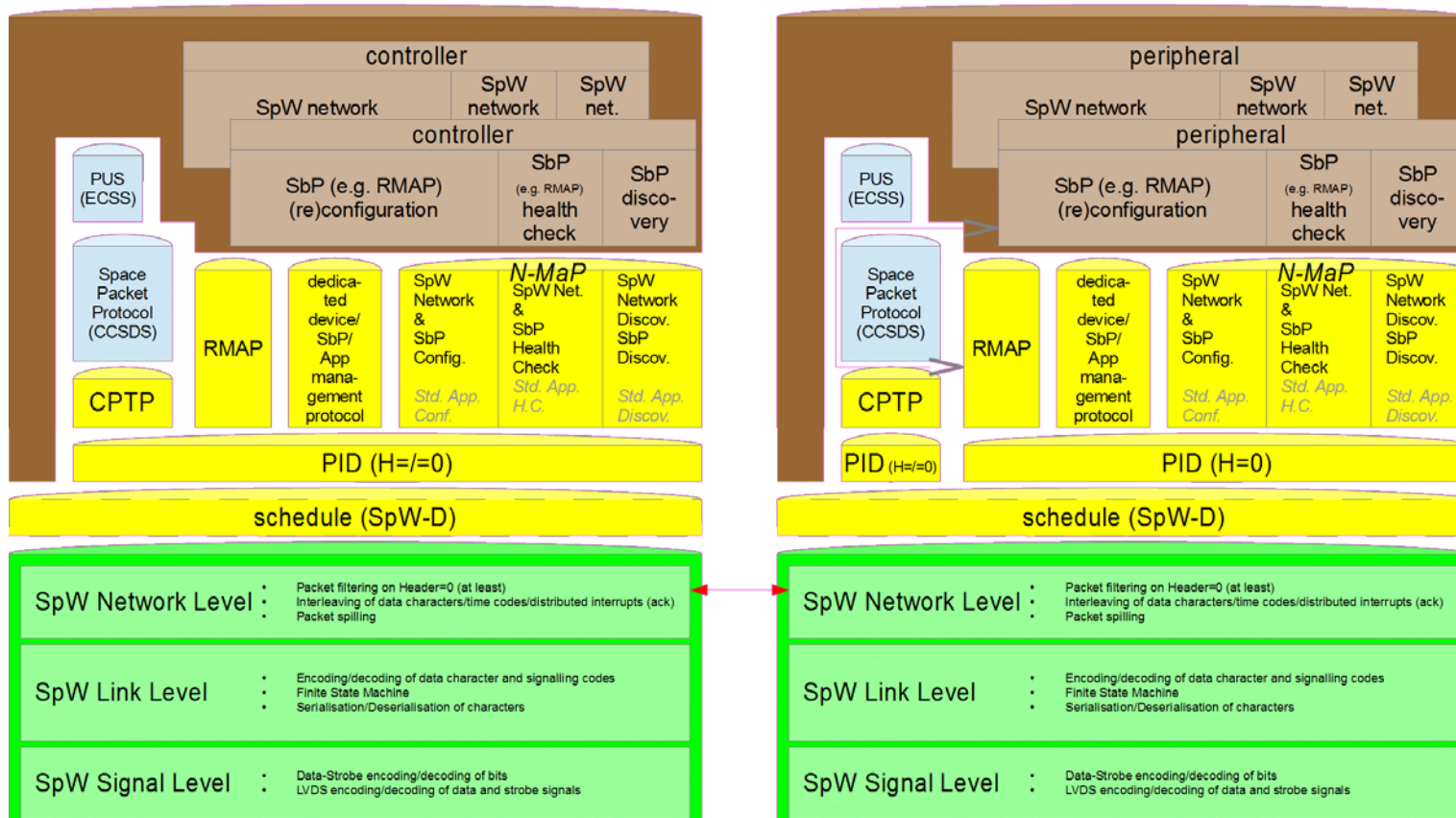


# TRP/GSTP convergence activity

## Management Service Suite for SpW & SpW-based Protocols (N-MaSS/X) (1)



- SpW** 1. Target 1 = PnP + FDIR for SpaceWire
- SbP** 2. Target 2 = PnP + FDIR for SpaceWire-based Protocols

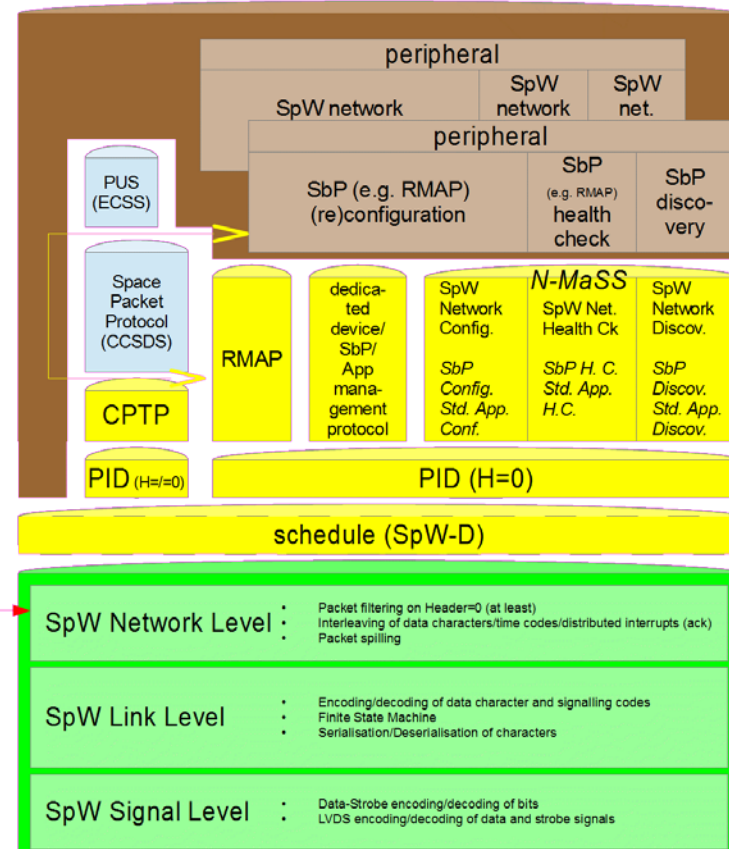
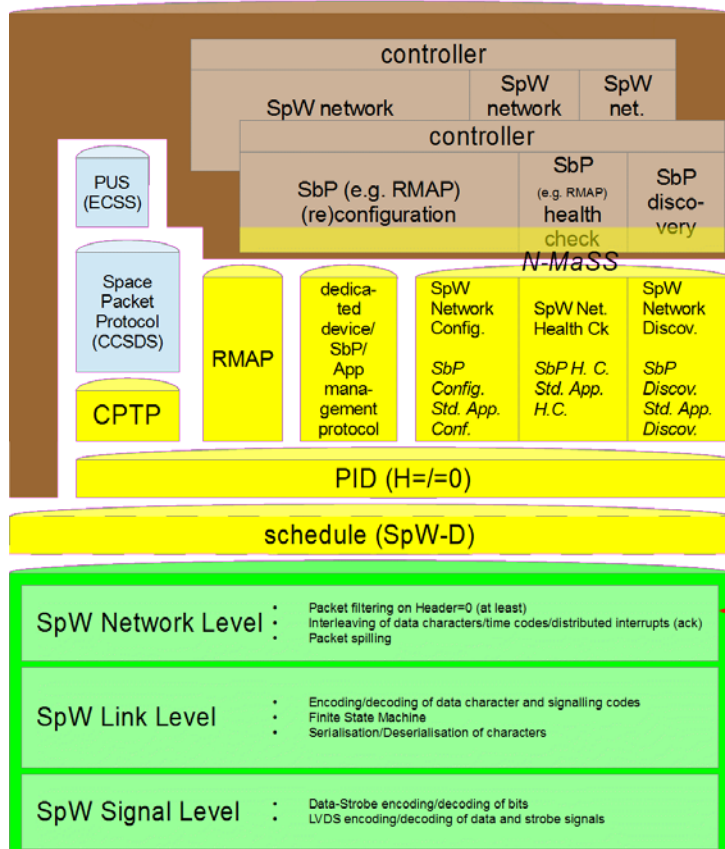


# TRP/GSTP convergence activity

## Management Service Suite for SpW & SpW-based Protocols (N-MaSS/X) (2)



- |     |   |
|-----|---|
| SpW | 1. Target 1 = PnP + FDIR for SpaceWire                              |
| SbP | 2. Target 2 = PnP + FDIR for SpaceWire-based Protocols              |
| S/C | 3. Target 3 = standardisation of management interfaces and services |





## 1. Network Discovery Protocols

- a. TRP - 200k€ - SciSys + STARDundee
- b. Draft “SpW PnP” protocol spec (ECSS-like) March 2013 → end of 2013

## 2. FDIR for SpW Networks

- a. TRP – 250k€ - Astrium UK + 4Links + Teletel
- b. Draft “SpW FDIR” protocol spec (ECSS-like) April 2013 – early 2014

## 3. TRP/GSTP convergence activity

- a. “Management Service Suite for SpW & SpW-based Protocols (N-MaSS)”
  - Possibly extended to SbPs and standard applications
- b. Contact your delegations for financial support
  - system (prime) + SW/protocol design + board/FPGA prototyping