Nendica Study Item (Forwarding of Fieldbus CPF 12 on 802.1 Bridges) Termination

2023-4-27

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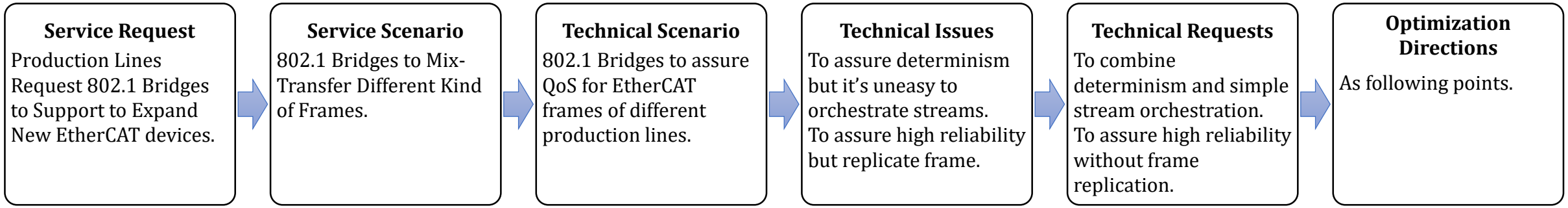
Progress Recap

- The Nendica Study Item (Forwarding of Fieldbus CPF 12 on 802.1 Bridges) initiated on July last year.
  - Study Item Initiation (2022-6-23): Proposal for Nendica Study Item: Forwarding of Fieldbus CPF 12 on 802.1 Bridges (802.1-22-0032)
  - Contributions / Documents of the Study Item
    - ✓ EtherCAT Relay Function (follow-up discussion) (802.1-22-0043)
    - ✓ EtherCAT Relay Function (802.1-22-0041) – Karl Weber, Marcel Kiessling
    - ✓ draft-liaison-to-ETG-about-CPF12-report (802.1-22-0047)
    - ✓ Initial solution for Nendica Study Item (Forwarding of Fieldbus CPF 12 on 802.1 Bridges) (802.1-22-0039)
  - Report of the Study Item
    - ✓ Nendica Study Item Report (Forwarding of Fieldbus CPF 12 on 802.1 Bridges) (802.1-22-0046)
    - ✓ Brief Introduction of Nendica Study Item Report (Forwarding of Fieldbus CPF 12 on 802.1 Bridges) (802.1-22-0052)

Termination of Study Item

- Currently, the items (to be studied) and deliverable are finished according to the initiation proposal of this Study Item.
- In this slides of Informal Report, the industrial service (production line expansion) and network technical aspects are analyzed as the following steps, and getting the optimization directions finally.



- **Mix-transfer latency / jitter:** In order to combine the simple stream orchestration and low latency / jitter, the following optimization directions could be considered to assure the determinism of EtherCAT frames.
  - ✓ To use fixed small period to minimize the wait duration for departure time of EtherCAT frame in each Bridge.
  - ✓ To build the explicit & tight period mapping relationship between all of the adjacent Bridges.
- **High reliability:** In order to avoid frame replication, the following optimization directions could be considered to achieve the high reliability.
  - ✓ To build the high reliability on lower layer of Ethernet network (of ring topology) to quickly detect link down and activate the backup link.
  - ✓ To avoid influence to end devices, keep compatible to device and minimize the bandwidth usage of detection & notification frame (no more than 1%).

- **Currently, there is no additional request to continue studies, it's appropriate to terminate this Study Item.**

Thank you.