

Dimensioning the synchronization of a TSN network in different embedded contexts

Quentin Bailleul (IRT Saint Exupéry), Katia Jaffrès-Runser (IRIT), Jean-Luc Scharbarg (IRIT) and Philippe Cuenot (IRT Saint Exupéry segunded Continental)

Time Sensitive Networking :

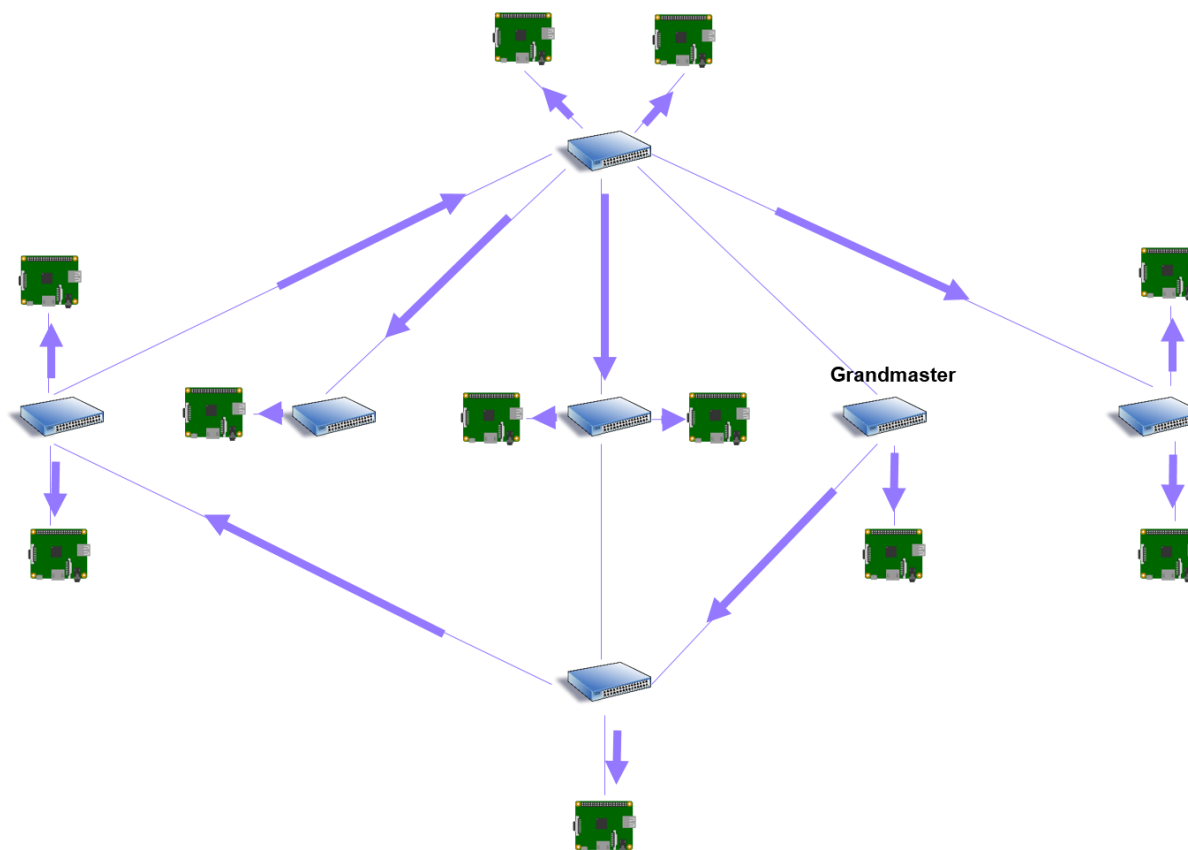
A set of standards for quality of service over Ethernet with a wide variety of flows.

IEEE 802.1AS :

802.1AS is the synchronization standard based on PTP (IEEE 1588) proposed by the TSN working group.

In a network with 7 hops, it achieves clock accuracy in the sub-microsecond range.

Embedded context :



Our work



What we have done

- State of the art of network synchronization
- A method to design a redundant and precise AS configuration on embedded networks
- Improvement of an AS simulation library on OMNeT++

Work in progress

- Assessing the simulator with AS hardware measurements

Future work

- Worst case precision