

# Examination: Term Paper and Presentation

# Possible topics for term paper

- Simulation of an application over Ethernet TSN
- Timing analysis
- 802.1Qch (CQF; scheduler from Apple's Firewire)
- Ethernet Security
  - Survey common Ethernet attacks and their countermeasures
  - Analysis and Attack trees
  - Key provisioning (802.1X)
  - Integrity and confidentiality of payload (802.1AE MACsec)
- AVB transport protocol (IEEE 1722)
- Stream reservation protocols (AVB)
- Application of any TSN protocols (e.g., create offline schedules for a given network and application)

# Possible topics for term paper

- Clock synchronization or scheduling in wireless networks
- Babbling idiot errors caused by switches
- Survey of (parts of) TTEthernet (synchronization, scheduling, fault tolerance, ...)
- Survey of (parts of) AFDX
- 802.1AS-REV:
  - Multiple grand masters
  - Multiple time domains
  - Redundant clock synchronization
  - Security issues in clock synchronization

# Possible topics for term paper

- Feel free to propose other topics
- Feel free to ask for literature and references
- It is fine to work in groups

# Walkthrough of IEEE 802.1 website

- The TSN group meets 6 times per year
- 802.1: <http://www.ieee802.org/1/>
- 802.3: <http://www.ieee802.org/3/>
- TSN: <http://www.ieee802.org/1/pages/tsn.html>
- Participation is open to all; all presentations are in the public folder
- Drafts (ongoing standardization) are available too
  - Username: p8021      Password: go\_wildcats

# All 802 standards are available online

- <http://ieeexplore.ieee.org/browse/standards/get-program/page/>
- Also linked from the 802.1 website
- Select “802(R) standards”
- Select “IEEE 802.1: Bridging an Management”
- Select the standard
- You may need to create an account (if you don’t already have an IEEE account)
- You can also download directly in IEEE Xplore (just make sure you download the completed standard and not any of the drafts, which start with “Dx.y”)

- Recommend to download IEEE 802.1Q-2014
- Try also to download any other documents for your term paper topics, if you already have an idea of what you're interested in