

Proposal for comparison process

IEEE 802.3dm

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Motivation

- Participants in IEEE 802.3 dm are currently working on competing technical proposals.
- While (parts of) the proposals are still under development right now, it will, soon enough, be necessary to make a choice.
- This presentation motivates and proposes a procedure in order to support voters in the formation of an educated opinion.
- It additionally proposes the input for the first step.
- We explicitly invite proponents of the different technical proposals to participate in the creation of the respective documentation.

Step 1: Identify comparison criteria

1.1 Identification of criteria groups

1.2 Identification of subcriteria per group

Rationale:

- Among engineers, it should be possible to comprise a list of criteria and to (more or less) agree how each solution performs for each criteria. The different conclusions from this list can typically be attributed to the differences in importance the engineers place on the different criteria. However, with the differences identified, it allows a choice with a clear understanding of the disagreements.

Step 2: Attributing relevance to the criteria

2.1 Collect different opinions and reasons why certain criteria are seen as relevant why others are seen as not so relevant

2.2 If possible and accepted, allow for a condensed representation of the different opinions per criteria

Rationale:

- Already comprising the list of criteria may be political, as participants might prefer to only add such criteria that puts their solution in a favorable light. The way out might be to directly address the different opinions on the importance of every criteria with the list of criteria (before even discussing the rating for every criteria).

Step 3: Criteria fulfillment.

3.1 Qualified criteria fulfillment for each proposal by the opponents

3.2 Identify where there are agreements and disagreements and why

Rationale:

- To find a common ground for the criteria fulfillment is not obvious, not even qualitatively. In our experience, the slightest hint that a solution might not perform as well as another might be fought heavily. It therefore is important to provide quantitative values where possible and to identify how the rating is obtained (theoretical, simulations, measurements, ...) and what the assumptions the results are based on. Even if there is hardware, different process technologies, different implementations, different measurement setups might lead to different results. Links to existing presentations help.

Step 4: Presenting the results.

4.1 Ideally in a joint presentation.

4.2 Ideally in a hierarchical approach (high level to detail).

Rationale:

- The 802.3 WG will likely appreciate a) a technical presentation allowing for a clear grasp of where the disagreements/differences are and b) the effort of coming to a common understanding in the dm group, even if it is on the disagreements. To come to the point where a presentation of results is possible, is real effort. It requires the willingness to not just overpower the other side(s), but a way to show respect and keep the technical instead of the marketing focus.

Interested to join the effort?

Proposal for high-level criteria cluster

1. PHY and transceiver complexity

- a) „Camera side“
- b) „ECU side“

3. Relative system costs

- a) Crystal
- b) Power over circuitry
- c) Bi-directional use of ports

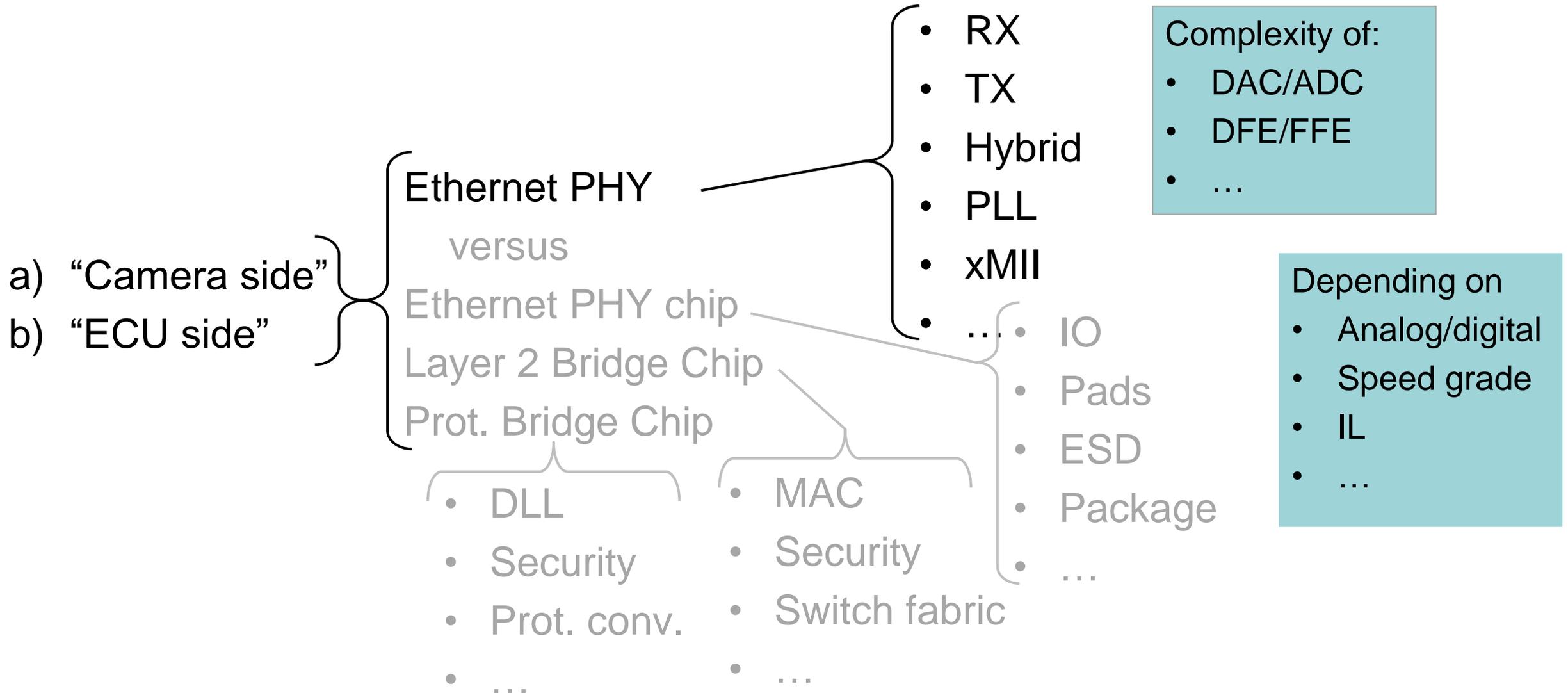
2. Performance

- a) EMC
- b) Latency
- c) Cable reach

4. Other

- a) Migration path for industry
- b) Reuse and synergies
- c) Inter-standard competition
- d) Path towards higher data rates
- e) Eco-system
- f) Compatibility with TSN

Example for PHY and transceiver complexity items



Next steps

- Feedback welcome
- Interest in participation welcome
- Announcement on next steps on the reflector

Thank You!