Complexity and Timeline Considerations

A Leading Provider of Smart, Connected and Secure Embedded Solutions

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Timeline Considerations

- **The number of cameras in new cars is undergoing a significant increase**
  - It is expected that around 12 cameras per car will soon become typical

- **There is a finite time window for P802.3dm to have maximum market success**
  - Camera systems are currently being designed into new cars and car models.
  - The longer it takes to complete P802.3dm, the greater the likelihood that an alternative will become the de facto standard due to extensive deployment
  - If the alternative adequately satisfies the application requirements, there may be little incentive to change over to P802.3dm

Timeline Considerations

- **Adopting a significantly new approach will inherently prolong the timeline**
  - 802.3ch has not been regarded as acceptable solution for this application
  - At the September P802.3dm meeting there were multiple new proposals related to using an 802.3ch-based approach:
    - New “Asymmetric Continuous Transmission (ACT)” FDD approach with DME modulation for US. It is claimed to:
      - Eliminate the need for an equalizer in the US direction
      - Eliminate the need for an echo canceller in the DS direction
    - Crystal-less operation at the camera module
  - The feasibility of the elements of these approaches have not been adequately verified individually, much less in combination for the ISAAC channels
    - Each would impact the received signal eye opening.
      - E.g., the crystal-less PLL inevitably generates higher jitter, which results in degraded performance due to poor echo-cancellation performance
  - The claimed complexity benefits were questioned and require more analysis

Timeline Considerations

- **ASA specifications have been developed since mid-2019 and are now very mature**
  - ASA was developed from the ground up for camera and sensor applications
  - Support for coax was by design, not an afterthought
  - ASA participants included multiple companies, including end users, chip and equipment manufacturers and cable vendors
  - In contrast, the authors of the proposals noted on the previous slide all share the same affiliation
    - This raises additional questions regarding the feasibility of multi-vendor interop performance
  - ASA-ML feasibility has been demonstrated in multi-vendor lab and field trials to satisfy the P802.3dm objectives
  - ASA-MLE is fully specified and demonstrated to be feasible
  - While some may have different technical preferences, no “Achilles heel” drawbacks have been shown for ASA

Recommendation and Proposal

- New technical approaches will inherently slow the progress of P802.3dm due to the need for extensive simulation and testing by multiple unaffiliated individuals

- ASA specifications are already available as adequately mature standards that could be leveraged towards the P802.3dm baseline

- In order to maximize the likelihood of P802.3dm market success, we propose that the Task Force focus on leveraging ASA-based technology and growing ecosystem (e.g., >160 member entities) as much as possible

Thank You