

Original Objectives with edits for possible 802.1 work

- ~~Auto-configuration of MAC/PHY, e.g., auto-negotiation, Auto-MDI-X~~
- A mechanism to request/grant/assign resources and the default rule(s) for managing the resources ~~(e.g., 802.3ah MPCP)~~
- Support both time-sensitive and best-effort traffic simultaneously, with some bandwidth reserved for best-effort traffic.
- Time-sensitive traffic only supported over 100Mb or greater full-duplex
- Time-sensitive traffic is not disrupted when any station/session is added or removed from the network
- Bounded maximum delay time-sensitive traffic (2ms end-to-end through network; 250us maximum through 1 hop; values to be validated in TF)
- Low jitter and approaching zero wander
- Network provides “house” clock for application synchronization within 5us.
- ~~Based on existing 802.3 PHY(s)~~
- ~~Supports IEEE 802.3 Power Over Ethernet~~

Additional objectives which were out of scope for 802.3

- **Bridging between 802.3, 802.11 and 802.15.3 (and other 802 MACs) preserving QoS**
- **Compatible with 802.1q**
- **No streaming frames dropped, bandwidth is reserved**
- **Default policy is first-come, first-served by request**
- **Network will automatically reclaim allocated but unused resources**
- **Support arbitrary topologies within reasonable limits (802.1d)**

Simplified 802.1-based objectives

- **Guaranteed QoS attributes for streams over small diameter (home-sized) network with 7 Ethernet hops max**
 - smaller number of hops for MACs with more inherent latency
- **QoS attributes are:**
 - latency less than 2ms
 - guaranteed bandwidth (assignable per stream)
 - packets are not dropped
 - once a stream is established, its performance is guaranteed
- **Timing synchronization between DTEs with low jitter and approaching zero wander**
 - specs TBD

Assumptions

- **Not intended to be used in provider networks**
 - Really for the endpoints of the provider networks
- **Control path to assign resources/establish timing hierarchy/etc uses existing 802 services**
- **Default policy for resource assignment is first-come, first-served**
- **Network will automatically reclaim allocated but unused resources**
- **Some bandwidth will always be available for best-effort traffic**
- **Latency guarantee of 2ms means that delivery jitter is no more than 2ms as well**