

Project Objectives

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Project Documentation

- Objectives
- Project Authorization Request
- 5 Criteria Response
 - Broad Market Potential
 - Compatibility with IEEE Std. 802.3
 - Distinct Identity
 - Technical Feasibility
 - Economic Feasibility
- Determining objectives for the future project is critical step
- Choice of specific objectives impacts responses to 5 Criteria

Project Objectives: History and Tradition

- Project objectives summarize technical objectives for a standards project in 802.3 Working Group, representing a distilled set of high-level technical requirements created by the 802.3 Study Group, approved by the 802.3 Working Group and then executed by the 802.3 Task Force once formed
 - Individual objectives may be modified by the 802.3 Task Force, subject to approval by the 802.3 Working Group
- Project objectives set expectations for the future work of the 802.3 Task Force, providing a set of measurable requirements to be met by the deliverables produced by the 802.3 Task Force.
 - Examples of objectives include operating speed (bit rate), media type, reach, BER, coexistence, compatibility etc.
- Some other working groups within 802 address such areas in their Project Authorization Request, but 802.3 Working Group does not typically do so
- Every project undertaken in the 802.3 Working Group since (at least) 1992 has been guided by a set of such project objectives

Project Objectives: Some Observations

- We have seen other standards bodies get wrapped around the axel writing long “requirements documents” to accomplish what we do with a single slide with a bunch of bullet points:
 - They argue endlessly about the wording, which is like talking about the subject.
 - They seldom write a standard, which is the real “requirements document”
- Project objectives may take different time to produce:
 - Some projects completed their objectives in a single afternoon
 - Other projects took 6 meetings to complete them
- People tend to read too much into the wording, so please, when working on the objectives for this project:
 - Keep the wording brief and simple
 - Remember an objective says what it says nothing more

Project Objectives: High Level Guidelines (I)

- Objectives must be succinct
- Objectives must be unambiguous
- Objectives must be technical, but written in plain English
- Objectives must be definitive statements of requirements, not plans for future work, study, or evaluation
- Objectives do not have to identify every minute item of work
- Objectives must endure through the life of the project
- Objectives are problem statements, not solution statements
- Objectives usually get included in the introductory text of an amendment, and thus live forever within the standard

Project Objectives: High Level Guidelines (II)

- Consensus building is key
 - Don't start making motions until you have made sure that your proposal is acceptable to the majority of people in the room.
 - Build consensus in advance – this is the key to success
- Offer objectives one at a time, using a motion like this (example):
 - Move that the Study Group adopt the following objective:
 - Provide a BER of 10^{-12} or better at the MAC/PLS service interface
- All votes on objectives are technical, requiring $\geq 75\%$ approval
- Sometimes, we try adopting just the form of an objective, before we can reach agreement on the specific values, but this is not a preferred approach and can make the process take longer.

Project Objectives: Examples (I)

IEEE P802.3bj; 100 Gb/s Backplane and Copper Cable Task Force

Objectives

- Support full-duplex operation only
- Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
- Preserve minimum and maximum FrameSize of current 802.3 standard
- Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface
- Define a 4 lane PHY for operation over a printed circuit board backplane with a total channel insertion loss of ≤ 35 dB at 12.9 GHz**
- Define a 4 lane PHY for operation over a printed circuit board backplane with a total channel insertion loss of ≤ 33 dB at 7.0 GHz**
- Define a 4-lane 100 Gb/s PHY for operation over links consistent with copper twin-axial cables with lengths up to at least 5m.
- To define optional Energy-Efficient Ethernet operation for 100G Backplane and Twinaxial cable PHYs specified in P802.3bj*

Project Objectives: Examples (II)

IEEE P802.3bf; Ethernet Support for the IEEE P802.1AS Time Synchronization Protocol

Objective

Provide an accurate indication of the transmission and reception initiation times of certain packets as required to support IEEE P802.1AS.

Approved by IEEE 802.3 WG 11/19/09

Project Objectives: Examples (III)

IEEE P802.3az; Energy Efficient Ethernet Task Force

Define a mechanism to reduce power consumption during periods of low link utilization for the following PHYs

- 100BASE-TX (Full Duplex)
- 1000BASE-T (Full Duplex)
- 10GBASE-T
- 10GBASE-KR
- 10GBASE-KX4
- 1000BASE-KX (added July 2008; WG approved Y: 68 N: 0 A: 13)

- Define a protocol to coordinate transitions to or from a lower level of power consumption

- The link status should not change as a result of the transition

- No frames in transit shall be dropped or corrupted during the transition to and from the lower level of power consumption

(All of the above modifications except 1000BASE-KX approved 5/29/07 All: 11/1/0, 802.3: 10/1/0)

- The transition time to and from the lower level of power consumption should be transparent to upper layer protocols and applications

(Modified 5/30/07 All: 7/0/1, 802.3: 5/0/1)

Questions?

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