802.3ar Frame Expansion
Draft PAR and 5 Criteria

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Outline

- *Draft* **Project Authorization Request (PAR)**
  - **Title**
  - **Scope**
  - **Purpose**
  - **5 Criteria**

802.3ar PAR Title

- **Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements Part 3: Carrier sense multiple access with collision detection (CSMA/CD) frame format extensions**

802.3ar PAR Scope

a) Specify the IEEE 802.3 frame format when optional envelope information is present while preserving the original MAC service data unit

b) Also, specify related adjustments to IEEE 802.3 Media Access Control (MAC) parameters and management attribute definitions

802.3ar PAR Purpose

- The purpose of this project is to extend the size of the IEEE 802.3 frame format to accommodate IEEE 802.1ad Provider Bridging, IEEE 802.1AE MACSec and other applications requiring envelope information

802.3ar PAR (justification)

- *14a. Please give the specific reason for the standardization project, with particular emphasis on the problem being solved, the benefit to be received and target users or industries.*

- **There are multiple new projects – both inside and outside IEEE 802 – defining applications that require additional optional fields within Ethernet frames, but do not require a larger data field. These are all driving the need to solidify a standards-based, interoperable, extensible frame format.**

- **The market includes the existing large installed-base of Ethernet users interested in emerging and future developments such as Provider Bridging, link security and Ethernet transport/encapsulation.**

802.3ar PAR (overlap question)

- *16. Are there other documents or projects with a similar scope? __No__ (attach explanation).*

- *19. Additional explanation*

- **16- IEEE 802.1ad Provider Bridging and IEEE 802.1AE MACSec are specifying added prefix and suffix fields within their scope.**

  ITU-T SG15 Q12 is specifying Ethernet transport services, encapsulations and interfaces (e.g., UNI, NNI) within their scope.

  The project proposed in this PAR will address related items which are within the scope of IEEE 802.3 Working Group.

802.3ar - 5 Criteria #1

- **Broad Market Potential**
    - **Broad set(s) of applications**
    - **Multiple vendors, multiple users**
    - **Balanced cost, LAN vs. attached stations**

- **There are multiple new projects – both inside and outside IEEE 802 – defining applications that require additional optional fields within Ethernet frames, but do not change the basic data field.**

- **The broad market potential was established by the approval of:**
    - **802.1ad Provider Bridging**
    - **802.1AE MACSec**
    - **ITU-T SG15/Q12 Ethernet Transport**

- **These are all driving the need to solidify a revised frame format, and associated management attributes.**

802.3ar - 5 Criteria #2

- **Compatibility**
  - **Conformance with CSMA/CD MAC, PLS**
  - **Conformance with 802.2**
  - **Conformance with 802 FR**

- **The express purpose of this project is to restore compatibility between IEEE 802.1 Bridges and the IEEE 802.3 MAC, necessitated by the development of IEEE 802.1ad Provider Bridging and 802.1AE MACSec envelope information.**

- **This project will not affect compatibility of IEEE 802.3 networks with respect to the IEEE 802 Overview and Architecture or IEEE 802.2 LLC Services.**

802.3ar - 5 Criteria #3

- **Distinct Identity**
  - **Substantially different from other 802.3 specs/solutions**
  - **Unique solution for problem (no two alternatives/problem)**
  - **Easy for document reader to select relevant specification**

- **The proposed project is the only one addressing the issue of expanding the IEEE 802.3 frame format.**

802.3ar - 5 Criteria #4

- **Technical Feasibility**
  - **Demonstrated feasibility; reports - working models**
  - **Proven technology, reasonable testing**
  - **Confidence in reliability**

- **There is no perceived technical challenge. Many implementations already exist that support the goals of this project.**

802.3ar - 5 Criteria #5

- **Economic Feasibility**
  - **Cost factors known, reliable data**
  - **Reasonable cost for performance expected**
  - **Total installation costs considered**

- **By including optional envelope information while maintaining the existing Ethernet frame format, this project will have no measurable impact on component or system cost.**