802.3ar Frame Expansion

Review of 802.3ac

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Agenda

- Review 802.3ac
  - Overview
  - Milestones
  - Timeline
  - PAR
  - 5 criteria

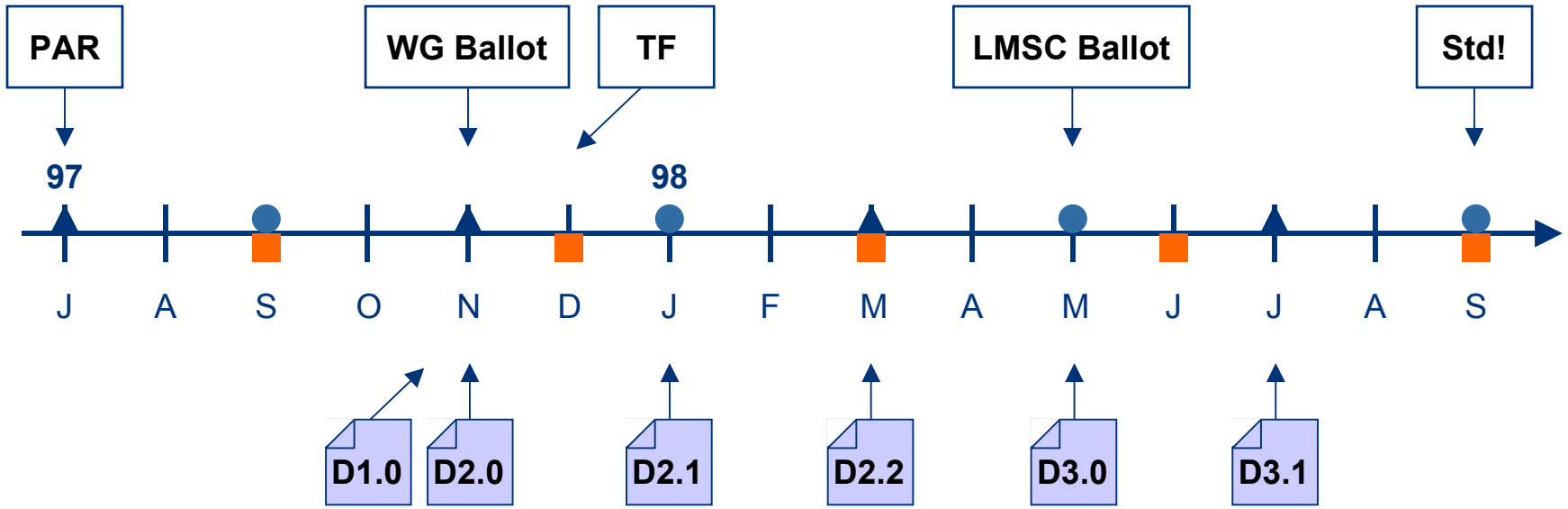
P802.3ac Overview

- 802.3 Opening plenary (July 97)
  - Howard Frazier proposed project to “include VLAN Tag frame format in 802.3”
- 802.3 mid-week (July 97)
  - .1/.3 joint technical meeting held (Wed)
  - Reviewed .1Q/D6
- 802.3 closing plenary (July 97)
  - PAR/5 criteria created/approved
- Initial draft (D1) four months later
- Standard approved September 1998
  - *14 month project: PAR to Standard*

P802.3ac Milestones

Date	Meeting	Milestone
7/97	Plenary	802.1Q/D6 reviewed; .1/.3 Joint Technical Meeting PAR/5 Criteria drafted in 802.3
9/97	Interim	Goals agreed upon, draft worked on
11/97	Plenary	D1.0 distributed; reviewed in .3 D2.0 WG ballot created
12/97		802.3ac TF approved
1/98	Interim	Resolved comments on D2.0; created D2.1 (1st WG re-circ)
3/98	Plenary	Resolved comments on D2.1; created D2.2 (2nd WG re-circ)
5/98	Interim	Resolved comments on D2.2; D3.0 Sponsor Ballot opened
7/98	Plenary	D3.0 Sponsor closed; D3.1 re-circ, pre-approval to send to RevCom
9/98		RevCom approval

P802.3ac Timeline



Legend

- ▲ 802 Plenary
- ● 802.3 Interim
- ■ IEEE-SA Standards Board

802.3ac 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 for Virtual Bridged Local Area Networks (VLAN) tagging on IEEE 802.3 networks**

802.3ac PAR Scope

a) Specification of IEEE 802.3 frame format when carrying Virtual Bridged Local Area Network (VLAN) tag information

b) Necessary adjustments to IEEE 802.3 Media Access Control (MAC) parameters to accommodate Virtual Bridged Local Area Network tagged frames

c) Necessary adjustments to IEEE 802.3 standard clause 30 Management Attribute definitions to accommodate Virtual Bridged Local Area Network tagged frames

802.3ac PAR Purpose

- The purpose of this project is to adjust the IEEE 802.3 frame format to align IEEE 802.3 standard with IEEE 802.1Q.

802.3ac PAR (overlap question)

- 9b. Are you aware of any other standards or projects with a similar scope? Yes (attach explanation).
  IEEE 802.1Q also has specifications for Virtual Bridged Local Area Network tag information within its scope. The project proposed in this PAR will address related items which are within the scope of responsibility of Working Group 802.3.

802.3ac - 5 Criteria #1

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

- There are many new MAC and Switch implementations being developed, driven by recent and current projects within IEEE 802:
  - 802.3u Fast Ethernet
  - 802.3x Full Duplex Operation
  - 802.3z Gigabit Ethernet
  - 802.1Q Virtual Bridged Local Area Networks
- These are all driving the need to solidify a revised frame format, maxFrameSize parameter, and associated management attributes. 61 participants within the IEEE 802.3 WG have expressed interest in working on this project.

802.3ac - 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 802.1Q tags.
- This project will not affect compatibility of IEEE 802.3 networks with respect to the IEEE 802 Functional Requirements or IEEE 802.2 LLC Services.

802.3ac - 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 spec

- The proposed project is the only one addressing the issue of modifications to the IEEE 802.3 frame format, MAC parameters, or management attributes.

802.3ac - 5 Criteria #4

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

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

802.3ac - 5 Criteria #5

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

- This project will have no measurable impact on component or system cost.