First name	Surname	Affiliation	Phone
Geoff	Thompson	GraCaSI S.A.	+1.540.227.0059

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ADDITIONAL COMMENTS document. P802.3cg/D2.3

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1.   The inclusion of the new CSMA/CA shared media access control mechanism (labeled PLCA) which overrides CSMA/CD as the media access control is out of scope for the PAR approved for the project.

> The approved Scope of the project says:
> > "5.2.b. Scope of the project: Specify additions to and appropriate modifications of IEEE Std 802.3 to add 10 Mb/s Physical Layer (PHY) specifications and management parameters for operation, and associated optional provision of power, using a single balanced pair of conductors"
>
> Thus, the scope of the project is the Physical Layer (only). "PLCA" is a modification to the Media Access Control **function** of the (MAC) sublayer and therefore out of scope.
> The current draft claims that the new CSMA/CA mechanism "PLCA" resides in the reconciliation sublayer. That argument is not valid. According to IEEE Std 802 Overview & Architecture (Ref: 5.2.3, paragraph 2, point 6) that the function of "Control of access to the physical transmission medium" is a principal function of the MAC sublayer. There is no provision for access control in the functional description in O&A for the Physical Layer (Ref: 5.2.4 PHY, In 802 speak the abbreviation "PHY" is equal to "Physical Layer". That is not true within 802.3)
>
> The current draft seems to assert that by labeling PLCA as part of the reconciliation sublayer and placing the documentation of its functions into that of the reconciliation sublayer that it resides within the "Physical Layer" and that therefore there is no layering problem.
>
> That doesn't align to the text of 802.3 clause (quote follows) which I believe is intended to align with the O&A clauses quoted above.
> > 1.1.3 Architectural perspectives
> > There are two important ways to view network design corresponding to the following:
> > > a) Architecture. Emphasizing the logical divisions of the system and how they fit together.
> > > b) Implementation. Emphasizing actual components, their packaging, and interconnection.
> > This standard is organized along architectural lines, emphasizing the large-scale separation of the system into two parts: the Media Access Control (MAC) sublayer of the Data Link Layer and the Physical Layer. These layers are intended to correspond closely to the lowest layers of the ISO/IEC Model for Open Systems Interconnection (see Figure 1–1). (See ISO/IEC 7498-1:1994.1) The Logical Link Control (LLC) sublayer and MAC sublayer together encompass the functions intended for the Data Link Layer as defined in the OSI model.
>
> The current draft is based on an implementation perspective rather than the architectural separation of function under which the 802.3 standard is required to be organized.
> On a functional basis, PLCA is a CSMA/CA media access control function that only uses CSMA/CD for initialization and error handling and runs CSMA/CA the rest of the time.

PLCA takes over control of the Media Access Control function. PLCA is not a reconciliation function, it is an implementation decision to package the PLCA function within the item in the existing block diagram that is labeled RS. Presumably this was done for the convenience of matching 10BASE-T1S chips or IP cells to the existing interfaces of widely available MAC IP and hardware.

That implementation decision is perfectly reasonable in terms of building new implementation blocks to fit onto old ones in order to facilitate bringing product to market quickly.
I don't believe that parsing will persist or be credible in doing clean sheet designs or future academic descriptions that aren't prejudiced by the clause organization and labeling of the current draft.

For an appropriate way to add the "PLCA" protocol specification to an 802.3 DTE, please see the way that an additional MAC sublayer is inserted into the 802.3 stack in clause 99.1 and Figure 99-1. This is the proper way to handle such an addition but would, of course, require being scoped as a MAC sublayer project (or portion thereof) and be adequately covered in the CSD and 802.3 Objectives.

2.   The inclusion of the new CSMA/CA shared media access control mechanism (labeled PLCA) which overrides CSMA/CD as the media access control does not conform to the CSD approved for the project.

Broad Market Potential
There is no indication CSD that the research into Broad Market Potential for the project considered either the positive or negative impact that PLCA would have on the project.

Compatibility
        Each proposed IEEE 802 LMSC standard should be in conformance with
        IEEE Std 802, the IEEE Std 802.3 MAC.

This is not true. Each of those documents say that 802.3 uses CSMA/CD as the only identified half duplex shared media access protocol. PLCA lies outside those bounds.

The statement: "The proposed amendment will conform to the IEEE 802.3 MAC." is not made true by asserting that a new MAC or MAC portion lives in the Physical Layer. Therefore the statement is, in my view, misleading by not being fully forthcoming.

Distinct Identity
The criteria response is not appropriately forthcoming given its actual the project's Distinct Identity of operating under a different shared media access protocol.

The inclusion of the new CSMA/CA shared media access control mechanism (labeled PLCA) which overrides CSMA/CD as the media access control is not needed to satisfy any of the OBJECTIVES approved for the project. It is not mentioned in the objectives nor are the issues that "PLCA" addresses listed in the 802.3 Objectives as problems needing a solution

3.   The inclusion of the new CSMA/CA shared media access control mechanism (labeled PLCA) which overrides CSMA/CD as the media access control is not needed to satisfy any of the OBJECTIVES approved for the project.

There is no objective which mentions PLCA nor is there any objective that even hints in any way that CSMA/CD has any performance deficencies that need to be overcome by this project.

4.   Further, it is my strong feeling that a network with the performance differences that CSMA/Collision Avoidance has when compared to a CSMA/Collision Detection network deserves a DISTINCT IDENTITY of its own. Ideally it would have its own standard and Working Group in 802. Shared media access method is, in fact, the traditional criteria used in 802 to create new and differentiate WGs. However, at this point, 802.3 is the only Working Group dealing with wired technology and is the industry gathering place for the relevant technology experts. Given that, it is my personal belief that any 802 wired CSMA/Collision Avoidance standard proposal should be done as an 802.3 project and should be numbered as a separate standard within the IEEE Std 802.3 family of standards.