P1904.2

Submitter Email: glen.kramer@ieee.org
Type of Project: New IEEE Standard
PAR Request Date:
PAR Approval Date:
PAR Expiration Date:
Status: PAR for a New IEEE Standard

1.1 **Project Number**: P1904.2
1.2 **Type of Document**: Standard
1.3 **Life Cycle**: Full Use

2.1 Title: Standard for Management Channel for ~~Customer-Premises~~ Equipment Connected to Ethernet-based Subscriber Access Networks

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3.1 Working Group: Access Networks Working Group (COM/SDB/1904_WG)
Contact Information for Working Group Chair
Name: Glen Kramer
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Contact Information for Working Group Vice-Chair
None

3.2 Sponsoring Society and Committee: IEEE Communications Society/Standards Development Board (COM/SDB) Contact Information for Sponsor Chair
Name: Mehmet Ulema
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 07/2019
4.3 Projected Completion Date for Submittal to RevCom: 11/2019

5.1 Approximate number of people expected to be actively involved in the development of this project: 15

5.2 Scope: This standard describes a management channel for customer-premises equipment (CPE) connected to Ethernet-based subscriber access networks. The key characteristics of the specified management channel are:
- Multi-hop capabilities to allow management of various CPE devices located behind an Optical Network Unit (ONU), a Coaxial Network Unit (CNU), a Residential Gateway (RGW), etc.
- Extensibility to accommodate new management protocols and/or new types of CPE devices.
- Broadcast/multicast capabilities to allow simultaneous (synchronized) configuration of multiple devices.
- Encryption capabilities to ensure secure access to managed CPE devices by the network operators.
The standard describes the message format as well as processing operations and forwarding rules at the intermediate nodes.

This standard describes a management channel for devices used in Ethernet-based subscriber access networks. The key characteristics of the specified management channel are:

- The ability to transit MAC bridges in a single IEEE 802 MAC domain to allow remote management of devices.
- Extensibility to accommodate new management protocols and new types of devices.
- The ability to simultaneously send messages to multiple UMT stations using broadcast or multicast addressing.

The standard describes the message format as well as processing operations at the stations participating in the UMT protocol.

5.3 Is the completion of this standard dependent upon the completion of another standard: No

5.4 Purpose: This document will not include a purpose clause.

5.5 Need for the Project: In their quest to find the optimal balance between the performance of subscriber access networks and their cost, the network operators increasingly combine optical distribution section with a copper-based drop section, which typically includes a twisted pair, a Category-5 cable, or a coaxial cable. Network operators require a management system that would allow them to efficiently access and manage the subscriber demarcation device as well as the various devices that interconnect their optical and copper sections of the network. In addition, to achieve the best-possible service quality, the access network operators find it necessary to extend their management domains past the typical subscriber demarcation device,

such as an Optical Network Unit (ONU), a Coaxial Network Unit (CNU), Cable or DSL modem, or a Residential Gateway (RGW).
As Ethernet-based networks (switched Ethernet, point-to-point Ethernet, or Ethernet Passive Optical Network) are becoming technologies of choice for public subscriber access network, there is a pressing need to provide a universal management channel compatible with Ethernet and that would allow network operators to manage a variety of devices in access network or in subscriber premises in a uniform and consistent way.

5.6 Stakeholders for the Standard: The stakeholders include telecom system and component vendors, telecommunications carriers, and multiple system operators (MSOs)

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: Yes
If yes please explain: This project may require allocation of a new Ethertype value to identify CPE management protocol

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7.1 Are there other standards or projects with a similar scope?: No 7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation): The following individuals support this project and are expected to participate in the standard development activities:
- Eugene Dai, Cox Communications
- John Dickinson, Bright House Networks
- Raziel Gabe, PMC Sierra
- Marek Hajduczenia, Bright House Networks
- Ming Jing, CTC
- Curtis Knittle, Cablelabs
- Glen Kramer, Broadcom Corp.
- Toshihiko Kusano, Oliver Solutions
- Edwin Mallette, Bright House Networks
- Liu Qian, Research Institute of Telecommunications Transmission - Ken-Ichi Suzuki, NTT Corp.
- Motoyuki Takizawa, Fujitsu Telecom Networks
- Lu Yang, Research Institute of Telecommunications Transmission - Liquan Yuan, ZTE
- Zhou Zhen, Fiberhome Telecommunication Technologies