Title: Liaison response on the use of faster CCM transmission intervals in IEC 62439-2
From: IEEE 802.1 Working Group
For: Information
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To: Günter Hörcher, Convenor, IEC TC 65/SC 65C/WG 15, guenter.hoercher@ipa.fraunhofer.de
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Dear Colleagues,

The IEEE 802.1 Working Group would like to thank IEC TC 65/SC 65C/WG 15 for the information provided in liaison statement https://www.ieee802.org/1/files/public/docs2021/liaison-iec65cwg15-CCM_interval_extension-0321-v2.pdf.

We understand that IEC TC 65/SC 65C/WG 15 is considering the possibility of using Continuity Check Messages (CCMs) exchanged at faster CCM transmission intervals than the standardized 10 ms and 3.3 ms as a solution to support faster IEC 62439-2 Media Redundancy Protocol (MRP) reconfiguration.

We would like to inform you that CCM transmission intervals were chosen to meet packet transport network requirements of operators and service providers. Among these requirements were the need to support sub-50ms linear and ring protection switching. The intervals were originally specified as part of IEEE Std 802.1ag™-2007 Connectivity Fault Management (CFM) and ITU-T Recommendation G.8013/Y.1731. As such, these two standards were developed in collaboration between IEEE 802.1 and ITU-T Study Group 15 (SG15). Modifications common to both standards would require the same type of IEEE 802.1/ITU-T SG15 collaboration to ensure that the wider ecosystem of CCM users is appropriately considered. Ensuring backward compatibility as needed with existing implementations would also be important.

Informed by our ongoing IEC/IEEE 60802 joint project on industrial automation, we also would like to note that we consider IEEE Std 802.1CB™-2017 (Frame Replication and Elimination for Reliability – FRER) to be applicable to high-availability automation networks, for FRER provides high-availavility for the connections over an arbitrary mesh network with a zero-failover time.

We would like to better understand why faster CCM transmission, as opposed to instantaneous reconfiguration via FRER, matters in your use case. To help us better understand your need for faster CCM transmission intervals, we would welcome an overview of how MRP with faster reconfiguration would be used as well as clarification of the link speeds targeted, of the number of services carried on a given link, whether MRP link checks apply to a single IEEE Std 802.3™ link or to the serial concatenation of such links, whether link technologies other than as specified in IEEE Std 802.3™ are supported, whether CCM-based link failure detection is in addition to link-level hardware detection and if so, how the two interact.

Note that the IEEE 802 work is open, and contribution driven. Participation is on an individual basis and technical discussion can be conducted based on individual contributions. The IEEE 802.1 TSN Task Group holds regular electronic meetings: details are available at https://1.ieee802.org/wg-calendar.

Respectfully submitted,
Glenn Parsons
Chair, IEEE 802.1 Working Group