IEEE P802.15

Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)		
Title	EUI-64 bridging 5C		
Date Submitted	September, 2013		
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Re:			
Abstract	5C to support bridging EUI-64 addressed networks.		
Purpose			
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1. Criteria for standards development (five criteria)

1.1 Broad market potential

A standards project authorized by IEEE 802 LMSC shall have a broad market potential. Specifically, it shall have the potential for:

a) Broad sets of applicability.
b) Multiple vendors and numerous users.

802.15 standards, particularly 802.15.4, are widely deployed in the market place by hundreds vendors with hundreds of millions of endpoints deployed. However, these solutions are not able to take advantage of the capabilities provided by the 802.1 bridging standards to bridge to EUI-48 addressed networks. Most of the current and future deployments of 802.15 standards that use EUI-64 would benefit from the support of bridging between EUI-64 addressed networks and EUI-48 addressed networks.

1.2 Compatibility

IEEE 802 LMSC defines a family of standards. All standards should be in conformance : IEEE Std 802, IEEE 802.1D, and IEEE 802.1Q. If any variances in conformance emerge, they shall be thoroughly disclosed and reviewed with IEEE 802.1 WG. In order to demonstrate compatibility with this criterion, the Five Criteria statement must answer the following questions.

a) Does the PAR mandate that the standard shall comply with IEEE Std 802, IEEE Std 802.1D and IEEE Std 802.1Q?
b) If not, how will the WG ensure that the resulting draft standard is compliant, or if not, receives appropriate review from the IEEE 802.1 WG?

802.1AC is compliant with IEEE Std 802. The purpose of this project would be to create a mode of operation in which EUI-64 networks, such as 802.15.4, would be compliant with 802.1D and 802.1Q. As this project will be handled by the IEEE 802.1 WG, appropriate review will be provided.

1.3 Distinct identity

Each IEEE 802 LMSC standard shall have a distinct identity. To achieve this, each authorized project shall be:

a) Substantially different from other IEEE 802 LMSC standards.

There are no other IEEE 802 standards that address bridging between EUI-64 addressed networks and EUI-48 addressed networks.

b) One unique solution per problem (not two solutions to a problem).

This standard will provide a unique solution for bridging between EUI-64 addressed networks and EUI-48 addressed networks.

c) Easy for the document reader to select the relevant specification.

The draft will clearly show the use of bridging between EUI-64 addressed networks and EUI-48 addressed networks and will follow the 802.1 editorial conventions

1.4 Technical feasibility

For a project to be authorized, it shall be able to show its technical feasibility. At a minimum, the proposed project shall show:

a) Demonstrated system feasibility.

The RAC specifies a method for extending an EUI-48 address into an EUI-64 address. In addition, other protocols, such as network address translation (NAT) have been used to handle addressing issues. It should be possible to create methods and protocols to handle the connection.

b) Proven technology, reasonable testing.

This amendment will be based on the mature 802.1 bridging technology that has been widely used for decades.

c) Confidence in reliability.

The 802.1 bridging technology is mature and reliable.

1.4.1 Coexistence of IEEE 802 LMSC wireless standards specifying devices for unlicensed operation

A WG proposing a wireless project is required to demonstrate coexistence through the preparation of a Coexistence Assurance (CA) document unless it is not applicable.

- The WG will create a CA document as part of the WG balloting process.
- If the WG elects not to create a CA document, it will explain to the Sponsor the reason the CA document is not applicable.

The WG will not create a CA document because the project will not affect the behavior of the wireless links.

1.5 Economic feasibility

For a project to be authorized, it shall be able to show economic feasibility (so far as can reasonably be estimated) for its intended applications. At a minimum, the proposed project shall show:

a) Known cost factors, reliable data.

802.1 bridging has been implemented in cost effective manner, so an implementation that handles bridging EUI-64 and EUI-48 only a small addition to the processing power and memory in existing bridgeing solutions.

b) Reasonable cost for performance.

Supporting bridging between EUI-64 and EUI-48 will add minimal cost while greatly enhancing the capabilities of EUI-64 addressed networks.

c) Consideration of installation costs.

Adding support for bridging between EUI-48 and EUI-64 will not impact installation costs.