IEEE P802.22 Wireless RANs

|  |
| --- |
| Errata – 802.22 base std, Use of CRC for MAC management messages |
| Date: 2016-06-20 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Ivan Reede | AmeriSys | Montreal, Quebec, Canada | 514-620-8522 | i\_reede@amerisys.com |
| Gerald Chouinard | AmeriSys | Gatineau, Quebec, Canada | 514-620-8522 | gerald@amerisys.com |

**Notice:** This document has been prepared to assist IEEE 802.22. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

**Release:** The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE’s name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE’s sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.22.

**Patent Policy and Procedures:** The contributor is familiar with the IEEE 802 Patent Policy and Procedures

<[**http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf**](http://standards.ieee.org/guides/bylaws/sb-bylaws.pdf)>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair Apurva N. Mody <**apurva.mody@ieee.org**> as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.22 Working Group. **If you have questions, contact the IEEE Patent Committee Administrator at <****patcom@ieee.org****>**.

Abstract

In sub-clause 7.8.5, it is stated that the MAC management messages are not to be augmented by a CRC once the CPE authentication has been accomplished. This needs to be reflected upon and the behavior of the CPE and the base station need to be clarified in case of an error being detected for interoperability purposes.

***Proposed corrections to the IEEE Std 802.22TM- 2011***

The need for a clarification in sub-clause 7.8.5

In sub-clause 7.8.5, it is stated that the MAC management messages are not to be augmented by a CRC once the CPE authentication has been accomplished. This means that there is no way by which a CPE can detect an error that could be contained in, for example, the upstream map. Such error may result in unwanted collisions in the upstream, potentially destroying the transmission of the CPE that suffered from this error as well as that of other CPEs that happen to be affected by this collision. The need for the use of the CRC should be reflected upon in order to avoid such important mis-behavior in the WRAN operation.

If a CRC is utilized at the end of important MAC management messages, specific behaviors should be established in order to avoid problems such as the collision described above. In such case, only the CPE where the error occurs (in fringe reception condition) would be affected by, for example, waiting for another upstream allocation from the BS, and not those ones where the signal was well received.

Some text would then need to be modified as a result of some decision on the need for a CRC for those messages.

Device behavior to be defined in case of CRC error detection

In a more general context, the IEEE Std 802.22-2011 would need to include specific behavior in case of errors being detected by the CRC for the various types of messages in order to make sure that there is interoperability between devices coming from different manufacturers. This could be developed along the implementation of the technology but should be approved and progressively included in the Standard.