

IEEE P802.11
Wireless Access Method and Physical Layer Specifications

Title: **Issue 13.1 - Management - Alternative & Argument**

Authors:

Frederic Bauchot - IBM La Gaude Laboratory (France)
Tel: +33-92-11-55-92

Johnny A. Chang - IBM Research Triangle Park NC
Tel: (919) 254-4393

Francois Y. Simon - IBM Research Triangle Park NC
Tel: (919) 254-4584
Fax: (919) 254-5410
Email: FYGS@VNET.IBM.COM

Reference: Related issue: - 13.1 (P802.11-92/64 document)

Abstract

This submission provides an Alternative and its Argument for the 802.11 Issue 13.1 (P802.11-92/64 document). This issue is stated as: "What control and observation features are needed for network management support?". The Alternative presented here is based on the Submission IEEE 802.11-92/98 - Wireless LAN Station Management Services - written by Steve Chen (Toshiba American Information Systems Inc.) As suggested by Steve Chen (Section 4 of P802.11-92/98), the alternative proposes, not only the functions described in Steve's paper but also additional functions to progress the work on WLAN Management support.

Alternative:

1) The model described in the submission P802.11-92/98 provides the base for the set of logical functions which makes up the "station network Management". This model can be related to the overall 802.11 model (replicated in the Proposed Draft Standard - P802.11-92/122) by placing it in the 'side management layer' at the MAC and Medium Independent layers level. The components specified in the WLAN Station Management Model are (see P802.11-92/98): Coordination Management, Frame Management, Access Management and Physical Connection Management.

i) - Coordination Management: See section 3.4 of P802.11-92/98

ii) - Frame Management: See section 3.1 of P802.11-92/98

iii) - Access Management: In addition to the functions that "monitor MAC operations and take action necessary to aid achieving and maintaining operational medium access", this component must also support the following functions:

* Registration and Authentication support required by a station to access a wireless LAN network. This requirement is stated in the 802.11 Functional Requirements - P802.11-92/57.

* Security support, additional to 802.10 if required (pending closure of Issue 6.6 - Security), must be provided within this component.

* Configuration of attributes related to the access support must be provided in this component.

* "Medium access method" dependent functions must also be supported in this component. Time-slot allocation and period boundary adjustment as described in the 'Medium Access Protocol for Wireless LAN - P802.11-92/39' are example of attributes to be controlled by such functions.

iv) - Physical Connection Management (PCM): See section 3.3 of 802.11-92/98. In addition to the "frequency selection" described in this section, there must be functions addressing the 'Interference Management' which are very much inter-related with the "frequency selection" functions. The 'Interference Management' is needed in one form or another regardless of the underlying PHY type.

The 'Interference Management' function allows the detection and characterization of the interferences (i.e. narrow band interference or overlapping cells from the same or adjacent networks). This function also initiates the necessary corrective actions to be executed by the physical layers.

Argument:**Pro:**

1) - The Management model and associated components described in 802.11-92/98 and the additional functions described in the Alternative above, provides:

a) Management services to the WLAN MAC and PHY layers.

b) Allows for the definition of the five management disciplines normally applied when managing a station: Configuration, Fault, Performance, Security and Accounting management.

c) Conforms to the IEEE 802.1B LAN/MAN Management for the LAN station interaction with an external management station.

Related Issue Identification:

- Issue 6.6 - Security

Conclusion

It is proposed that this submission be accepted as Alternative & Argument to the 802.11 Issue 13.1 and to further the work of wireless LAN Station Management layer.

References

- [1] IEEE P802.11-92/98 - Wireless LAN Station Management Services
- [2] IEEE P802.11-92/64 - 802.11 Issue 13.1 (Management) and 6.6 (Security)
- [3] IEEE P802.11-92/122 - Proposed Draft Standard
- [4] IEEE P802.11-92/39 - Medium Access Protocol for Wireless LAN
- [5] IEEE P802.11-92/57 - 802.11 Functional Requirements.

