IEEE P802.11
Wireless Access Method and Physical Layer Specifications

Title: **Life Without RTS, or**
             A proposed change to Section 5.2.7 in the draft IEEE p802.11-93/20b1

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Abstract: **What's Wrong:**
The editor's note in section 5.2.7 at the top of page 63 of IEEE p802.11-93/20b1 reads:
*[Decision needed on how to set the NoRTS parameter, who or what should set it and/or
have control over it, etc. Doc 93/190 makes the suggestion: set as a management object
on a per station basis. JES].*

How To Fix It:
Supply a decision, along with proposed text, like the one in this document.

Motions:
Resolved, that the proposed text changes in 11-94/180 be incorporated into the draft
standard IEEE p802.11-93/20b1 section 5.2.7 in it's next revision by the editors.

Proposed Change

The proposed text is shown below, with change bars, in the affected section from the draft standard, IEEE p802.11-93/20b1. This change accepts the editor's recommendation.

5.2.7.　Directed MPDU Transfer Procedure using RTS/CTS

Figure 5-5 shows the Directed MPDU transfer procedure with the use of RTS/CTS. In certain circumstances the DATA frames will be preceded with an RTS and CTS frame exchange that include duration information.

STA shall use an RTS/CTS exchange for directed frames only when the length of the ~~DATA packet~~ *payload* is ~~longer~~ greater than or equal to the length threshold indicated by the NoRTS parameter.　　The NoRTS parameter shall be set to a payload length threshold in each STA.

The NoRTS parameter shall be a managed object within the MAC MIB, and it's value can be set and retrieved by the MAC LME. NoRTS shall be constrained to range (0 ... Maximum MPDU Length). The value 0 shall be used to indicate that no payload shall be delivered without the use of RTS/CTS. The default value of the NoRTS parameter shall be 0.

This parameter provides control over both direction and length since it is maintained on a per STA basis. So as an example, only inbound long frames may use the RTS/CTS option.

The asynchronous payload frame (e.g. DATA) shall be transmitted after the end of the CTS frame and an SIFS gap period. No regard shall be give to the busy or free status of the medium.

Rationale

The selection of a range limitation for the NoRTS parameter is a practical one, allowing the editors of the MIB to choose an appropriate representation for the parameter.

By changing the semantics of NoRTS from "longer than" to "greater than or equal to" allows the upper bound of the NoRTS parameter to be the Maximum MPDU length, rather than the Maximum MPDU length plus one.

Choosing the default value of 0 insures that all stations default to the most "reliable" transport.

Allowing the NoRTS parameter to be set by MAC LME allows many desirable possibilities, among them:

1. NoRTS can be set at installation time by the installer(s) of a system to values which provide, in their experience, the best performance in that environment.

2. NoRTS can be set at system initialization time to a value chosen at design time by designers of certain stations, like Access Points, for which it may be desirable to have a value other than the default.

3. For vendors wishing to differentiate their conformant product, NoRTS can be dynamically adjusted by an "agent" which can monitor frame error rates, relative frequency of frame lengths or other amusing statistics.

4. NoRTS can be tuned by users of the system by application level network management tools which reach through the LME. Vendors can provide such tuning tools to differentiate their conformant product offerings.

5. The NoRTS parameter can be set or read by any management agent which has the capability of examining the MIB, thus allowing ESS-wide tuning of this parameter with suitably advanced agents.