IEEE P802.11
Wireless LANs

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| 802.11IEEE P802.11ak D3.0 Mandatory Draft Review (MDR) Report |
| Date: 2017-02-28 |
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**Abstract**

This document contains the report of the 802.11ak Mandatory Draft Review. And initial responses from the TGak Editor. MEC comment received via email added.

# 3999Introduction

## Purpose of this document

This document is the report from the group of volunteers that participated in the P802.11ak/D3.0 mandatory draft review.

This document contains recommendations for changes to P802.11ak to bring it into improved compliance to IEEE-SA and WG11 style.

Those recommended changes need to be reviewed by TGak and approved, or ownership of the issues taken by TGak.

## Process / references

The MDR process is described in:

* 11-11/615r5 – Mandatory Draft Review process
	+ https://mentor.ieee.org/802.11/dcn/11/11-11-0615-05-0000-wg802-11-mec-process.doc

And references:

* 11-09/1034r11 – 802.11 Editorial Style Guide
	+ https://mentor.ieee.org/802.11/dcn/09/11-09-1034-11-0000-802-11-editorial-style-guide.doc

## Acknowledgements

The 802.11 technical editors (Robert Stacey and Peter Ecclesine) gratefully acknowledge the work and contribution of:

* Edward Au
* Yongho Seok

Review assignments:

1. Style guide –Edward Au
2. MIB style and compiles with no extra warnings–Yongho Seok
3. ANA check –Robert Stacey

## Actions arising

Correct for style findings. Donald to review, effect draft change where necessary and markup this document with changes made.

Donald: Mark-up in this r2 shows changes made and responses to comments as of February 28th.

There are assigned numbers required and one instance where an allocated number needs renaming in the ANA database. Donald to submit ANA allocation and rename request. Done.

There are some changes required to the MIB to get it to compile. Donald to effect draft change. Mostly done.

# Findings

***Findings from Edward Au:***

**2.1 Frames**

**2.1.1 Frame Format Figures (10)**

# Figure 9-53. The drawing of the Data frame does not follow the bit-aligned figure format as shown in 11-09/1034r11.

* 9-53 is cut and pasted from the base standard.

# Figure 9-53a. The font type and font size of the figure do not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-53b. The font type and font size of the figure do not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-68. The drawing of the figure does not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-69. The drawing of the figure does not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-504. The font type of the figure does not follow the bit-aligned figure format as shown in 11-09/1034r11.

* The above three are intended to follow the base standard.

# Figure 9-589co. The font type and font size of the figure do not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-589cp. The font type and font size of the figure do not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-589cq. The font type and font size of the figure do not follow the bit-aligned figure format as shown in 11-09/1034r11.

# Figure 9-589cr. The font type and font size of the figure do not follow the bit-aligned figure format as shown in 11-09/1034r11.

* Donald: I’ll fix the formatting of my figures and check for any changes in updating to a more recent baseline but I have not yet changed things like font type and size.

**2.1.1.1 Optional Fields (0)**

# No findings.

**2.1.2 Naming Frames (15)**

# viii.14: replace “group addressed data GLK frames” with “group addressed Data GLK frames”.

# 6.36: replace “GLK transmissions of data frames” with “GLK transmissions of Data frames”.

# 7.38: replace “a copy of the data frame” with “a copy of the Data frame”.

# 15.3: replace “Within data frames” with “Within Data frames”.

# 15.5: replace “Within data frames” with “Within Data frames”.

# 57.12: replace “data frames” with “Data frames”.

# 57.16: replace “data frames” with “Data frames”.

* Above implemented.

# 60.9: replace “GLK Action frame details” with “GLK frame details”. It is because unless “Action” is part of the name of the frame, it should not be included.

# 60.12: replace “the GLK Action frame formats” with “the GLK frame formats”. It is because unless “Action” is part of the name of the frame, it should not be included.

* “GLK Action frame” specifies/describes a **category** of action frames, not a specific action frame. Above changes not made.

# 60.21: replace “The GLK Groupcast Mode Change Notification frame is a GLK Action frame used to indicate a change to the GLK groupcast transmission policy” with “The GLK Groupcast Mode Change Notification frame is another Action frame format that is defined to support GLK functionality. It is used to indicate a change to the GLK groupcast transmission policy”. It is because unless “Action” is part of the name of the frame, it should not be included.

# 60.25: replace “GLK Groupcast Mode Change Notification action frame format” with “GLK Groupcast Mode Change Notification frame format”. It is because unless “Action” is part of the name of the frame, it should not be included.

# 65.24: replace “GLK Groupcast Mode Change Notification action frame” with “GLK Groupcast Mode Change Notification frame”. It is because unless “Action” is part of the name of the frame, it should not be included.

* Above changes OK and have been implemented.

# 73.19: replace “data frames” with “Data frames”.

# 87.15: replace “data frame” with “Data frame”.

# 87.30: replace “data frame” with “Data frame”.

* Agree with above capitalization of “data” in “data frame(s)”.

**2.2 Case of true/false (1)**

# No findings but the way the pseudo-code is written in C.3 is not aligned with the typical format. For example, in 84.28, it says “False for GLK capable STA that does not support GLK-GCR or for a STA that is not GLK capable”. It should be better to rewrite as “When false, this attribute indicates GLK capable STA that does not support GLK-GCR or for a STA that is not GLK capable”.

* Changed wording of example as indicated and changed the wording in four other cases in a similar fashion.

**2.3 “Is set to” (7)**

# 44.6: “is set to 0” is not appropriate because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

# 44.15: “is set to 0” is not appropriate because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

# 46.12: “is set to 0” is not appropriate because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

# 57.8: replace “is set to 1” with “is 1” because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

# 57.11: replace “is set to 1” with “is 1” because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

# 57.15: replace “is set to 1” with “is 1” because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

# 84.12: replace “is set to 256” with “is 256” because the verb “set” should only be used when describing how a field obtains a value. Where the value of the field is read, “is set to” shall not be used.

* Above fixed.

**2.4 Information Elements/Subelements**

**2.4.1 Naming (41)**

* 7.14: replace “in the Capability Information, DMG STA Capability Information, and Relay Capabilities fields” with “in the Capability Information field, DMG STA Capability Information field, and Relay Capabilities element”. It is because “Relay Capabilities” is an element, not a field.
* 29.21: replace “GLK Capabilities field” with “GLK Capabilities element”.
* Above changes implemented.
* 29.21: What is a “GLK-GCR field”?
* 35.1: What is a “GLK-GCR field”?
* I have a query out on this to the author of that text.
* 30.40: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 32.7: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 33.25: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 34.43: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 36.13: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 37.36: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 39.4: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 41.7: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 41.25: replace “GLK Capabilities field” with “GLK Capabilities element”.
* 43.5: replace “To DS and From DS fields” with “To DS and From DS subfields”.
* 45.15: replace “GCR Mode field” with “GCR Mode subfield”.
* 45.16: replace “GCR Mode field” with “GCR Mode subfield”.
* Above changes implemented.
* 47.12: replace “Subtype field” with “Subtype subfield”.
* 47.17: replace “Subtype field” with “Subtype subfield”.
* 47.18: replace “Subtype field” with “Subtype subfield”.
* 47.20: replace “Subtype field” with “Subtype subfield”.
* 47.22: replace “Subtype field” with “Subtype subfield”.
* 47.27: replace “Subtype field” with “Subtype subfield”.
* Above changes implemented.
* 48.16: replace “To DS and From DS fields” with “To DS and From DS subfields”.
* OK
* 49.3: Is “SYNRA structure” a field? If so, please use an appropriate name, e.g., SYNRA field, and ***do the global change throughout the draft amendment***.
* This is an interesting question. A SYNRA is only used in the RA and you can tell from context whether the RA has a MAC in it or a SYNRA in it. We don’t ever refer to a MAC address as a “field” or the MAC field but there are many references to the “RA field”. We just call a “MAC” a “MAC”.
* 49.5: Since “SYNRA Type” is a subfield, “SYNRA Control” should also be a subfield. Replace “the format of the SYNRA Control field” with “the format of the SYNRA Control subfield”.
* 49.8: Since “SYNRA Type” is a subfield, “SYNRA Control” should also be a subfield. Replace “The SYNRA Control field format” with “The SYNRA Control subfield format”.
* 49.16: Following the comments for 49.8, “Basic SYNRA Control” is a subfield, not a field. ***Do the global change***.
* OK
* 54.9: replace “Capabilities Information field” with “Capability Information field”.
* 56.7: replace “DMG STA Capabilities Information field” with “DMG STA Capability Information field”.
* OK
* 56.13: replace “Associate Request” with “Association Request”.
* 57.19: replace “describes the GLK-GCR bits in the GLK Capabilities Flags field” with “describes the bits of the GLK-GCR subfield of the GLK Capabilities Flags field”. Please modify the table caption of Table 9-262aa accordingly.
* 58.8: replace “GLK-GCR Retransmission Policy field” with “GLK-GCR Retransmission Policy subfield”.
* 58.11: replace “GLK-GCR Retransmission Policy field” with “GLK-GCR Retransmission Policy subfield”.
* 65.21: replace “Buffer Size field” with “Buffer Size subfield”.
* 65.22: replace “GLK-GCR Parameter Set element frame” with “GLK-GCR Parameter Set element”.
* 65.31: replace “Block Ack Starting Sequence Number subfield” with “Starting Sequence Number subfield”.
* 72.18: replace “GLK Capabilities Flags field” with “GLK Capability Flags field”.
* 73.32: replace “GLK-GCR Parameter Set subelement” with “GLK-GCR Parameter Set element”.
* 74.29: replace “GLK Capabilities information element” with “GLK Capabilities element”.
* 74.33: replace “The Supported Rates and BSS Membership Selectors or Extended Supported Rates and BSS Membership Selectors IEs” with “The Supported Rates and BSS Membership Selectors or Extended Supported Rates and BSS Membership Selectors elements”.
* 76.30: replace “The Supported Rates and BSS Membership Selectors or Extended Supported Rates and BSS Membership Selectors IEs” with “The Supported Rates and BSS Membership Selectors or Extended Supported Rates and BSS Membership Selectors elements”.
* OK.

**2.4.2 Definition Conventions (0)**

* No findings.

**2.5 Naming of MIB Variables (9)**

* 85.4: replace “Unsigned 32” with “Unsigned32”.
* 85.14: replace “Unsigned 32” with “Unsigned32”.
* 85.24: replace “Unsigned 32” with “Unsigned32”.
* 85.34: replace “Unsigned 32” with “Unsigned32”.
* 85.44: replace “Unsigned 32” with “Unsigned32”.
* 85.54: replace “Unsigned 32” with “Unsigned32”.
* 86.16: replace “dot11GeneralLinkImplemented” with “dot11GLKImplemented”.
* 86.17: replace “dot11GeneralLinkRequired” with “dot11GLKRequired”.
* 86.27: replace “dot11GeneralLinkGCRImplemented” with “dot11GLKGCRImplemented”.
* Above changes implemented.

**2.6 Removal of functions and features (0)**

* No findings.

**2.7 Capitalization (27)**

* 6.33: replace “DMG Relay” with “DMG relay”.
* 6.34: replace “SIG Relay” with “SIG relay”.
* 6.34: replace “SIG Relays” with “SIG relays”.
* 8.10: replace “ADDBA Request/Response exchange” with “ADDBA Request/Response frame exchange”.
* 8.12: replace “DMS Response” with “DMS Response frame”.
* 8.13: replace “Concealment Address” with “Concealment address”.
* 48.1: replace “NOTE 1—Address 1 field of a frame with To DS equal to 0 and From DS equal to 1” with “NOTE 1—Address 1 field of a frame with To DS subfield equal to 0 and From DS subfield equal to 1”.
* 48.1: replace “NOTE 2—Address 2 field of a frame with To DS equal to 1 and From DS equal to 0” with “NOTE 1—Address 2 field of a frame with To DS subfield equal to 1 and From DS subfield equal to 0”.
* 49.5: replace “The SYNRA Types and” with “The SYNRA types and”.
* 49.8: replace “for each SYNRA Type” with “for each SYNRA type”.
* 51.10: replace “frame body field” with “Frame Body field”.
* 52.5: replace “corresponding GLK-GCR BlockAckReqs” with “corresponding GLK-GCR BlockAckReq frames”.
* 52.15: replace “corresponding GLK-GCR BlockAckReqs” with “corresponding GLK-GCR BlockAckReq frames”.
* 58.14: replace “If the GLK-GCR Retransmission Policy is” with “If the GLK-GCR Retransmission Policy subfield is”.
* 58.19: replace “In an Association Request or Reassociation Request” with “In an Association Request or Reassociation Request frame”.
* 58.24: replace “In an Association Response or Reassociation Response” with “In an Association Response or Reassociation Response frame”.
* 58.17: replace “If the GLK-GCR Retransmission Policy indicates” with “If the GLK-GCR retransmission policy indicates”.
* 60.18: replace “GLK Groupcast Mode Change Notification” with “GLK groupcast mode change notification”.
* 63.39: replace “a Basic BlockAckReq frame” with “a basic BlockAckReq frame”.
* 65.9: replace “Association/Reassociation Request” with “Association/Reassociation Request frame”.
* 65.33: replace “in the GLK-GCR Groupcast Mode Change Notification” with “in the GLK-GCR Groupcast Mode Change Notification frame”.
* 67.2: replace “a Beacon” with “a Beacon frame”.
* 67.36: replace “a supported SYNRA Type” with “a supported SYNRA type”.
* 76.27: replace “set the EPD subfield in the Capability Information and DMG Capability information to one” with “set the EPD subfield in the Capability Information field and DMG STA Capability field information to one”.
* 87.13: replace “length/type field” with “Length/Type field”.
* 88.10: replace “length/type field” with “Length/Type field”.
* 88.17: replace “length field” with “Length field”. There are two appearances in this line.
* Fixed except where it was already fixed or the text had been eliminated in Draft 3.1.

**2.8 Terminology (0)**

* No findings.

**2.9 Use of verbs & problematic words (23)**

* 7.3: replace “SYNRA addressing is only used in GLK AP transmissions” with “SYNRA addressing is used in GLK AP transmission only”. “Only” is a constraint, which should apply to a condition, not to a verb.
* 7.10: “may” is a normative verb that shall not be appeared in clause 4.
* 7.23: “must” is deprecated by the IEEE (e.g., “must”, “will”) and it should not be used except that it is used in some boilerplate reproduced from the IEEE-SA style guide.
* 7.40: “will” can only be used when stating future fact.
* 7.43: replace “because SYNRA addressing is only used by APs” with “because SYNRA addressing is used by APs only”.
* 8.1: “may” is a normative verb that shall not be appeared in clause 4.
* 14.19: “will” can only be used when stating future fact.
* 18.11: replace “for non-GLK non-AP STA” with “for a non-GLK non-AP STA”.
* 19.8: replace “for non-GLK AP” with “for a non-GLK AP”.
* 20.3: replace “for GLK STA” with “for a GLK STA”.
* 20.8: “must” is deprecated by the IEEE (e.g., “must”, “will”) and it should not be used except that it is used in some boilerplate reproduced from the IEEE-SA style guide.
* Above fixed.
* 48.1: replace “Address 1 field” with “The Address 1 field”.
* 48.1: replace “Address 2 field” with “The Address 2 field”.
* These NOTEs have gone away in the baseline so I have just deleted them.
* 54.14: replace “STA is not” with “The STA is not”.
* 66.46: replace “may only be sent by a GLK AP” with “may be sent only by a GLK AP”.
* 71.15: “ensure” should be avoided.
* 77.4: replace “Mesh STA with” with “A mesh STA with”.
* 84.15: “must” is deprecated by the IEEE (e.g., “must”, “will”) and it should not be used except that it is used in some boilerplate reproduced from the IEEE-SA style guide.
* 87.23: “must” is deprecated by the IEEE (e.g., “must”, “will”) and it should not be used except that it is used in some boilerplate reproduced from the IEEE-SA style guide.
* 87.26: “must” is deprecated by the IEEE (e.g., “must”, “will”) and it should not be used except that it is used in some boilerplate reproduced from the IEEE-SA style guide.
* 87.31: “must” is deprecated by the IEEE (e.g., “must”, “will”) and it should not be used except that it is used in some boilerplate reproduced from the IEEE-SA style guide.
* 94.9: “should” is a normative verb that shall not be appeared in an informative annex.
* 94.26: “should” is a normative verb that shall not be appeared in an informative annex.
* Above changes implemented.

**2.10 Numbers (2)**

* 88.1: replace “two-octet” with “2-octet”.
* 89.12: replace “two-octet” with “2-octet”.
* Above changes implemented.

**2.11 Maths operators and relations (0)**

* No findings.

**2.12 Hyphenation (9)**

* viii.23: replace “set-up” with “setup”.
* 6.39: replace “three address frame format” with “three-address frame format”.
* 65.9: replace “GLK-STA” with “GLK STA”.
* 67.18: replace “three address frame” with “three-address frame”.
* 71.10: replace “non-buffered” with “nonbuffered”.
* 73.18: replace “sub-clauses” with “subclauses”.
* 87.10: replace “sub-frames” with “subframes”.
* 88.5: replace “sub-frames” with “subframes”.
* 88.13: replace “sub-frame” with “subframe”.
* In the 2016 base standard, “frame with the three-address MAC header format” is used everywhere except Clause 4. In Clause 4, “three address frame format”, with no hyphen, is used. Therefore, I am leaving the instance at 6.39 unhyphenated and changing the wording at 67.18. Other hyphenation changes implemented as suggested.

**2.13 References to SAP primitives (0)**

* No findings.

**2.14 References to the contents of a field/subfield (0)**

* No findings.

**2.15 References to MIB variables/attributes (0)**

* No findings.

**2.16 Hanging Paragraphs**

* 73.18: There is a hanging paragraph between 11.24.16.4 and 11.24.16.4.1.
* Fixed.
	1. **Abbreviations (4)**
* 4.31: Don’t create abbreviations for terms used only a handful of times. DNSB is only used twice. No need to create this abbreviation.
* 4.32: Don’t create abbreviations for terms used only a handful of times. DNSM is only used twice. No need to create this abbreviation.
* 4.33: Don’t create abbreviations for terms used only a handful of times. DNSU is only used twice. No need to create this abbreviation.
* 4.35: Don’t create abbreviations for terms used only a handful of times. MMRP is only used twice. No need to create this abbreviation.
* It is anticipated that text will be added at the upcoming Vancouver meeting that will use these abbreviations.
* 65.8: replace “GK-GCR” with “GLK-GCR”.
* Fixed.
	1. **Format for code/pseudocode (0)**
* No findings.

**Others (4) Total 153**

* 7.19: replace “group address RA” with “group addressed RA”.
* 7.36: replace “group address RA” with “group addressed RA”.
* 57.12: replace ‘individual address DA” with “individually addressed DA”.
* 57.16: replace “group address DA” with “group addressed DA”.
* Above implemented.

# Individual clauses

***Findings from Edward Au***

## Definitions (Clause 3)

Definitions specific to IEEE 802.11 are OK.

Some abbreviations are questionable. Please refer to my comments in section 2.17. See my response.

## General Description (Clause 4)

There are a number of normative verbs being used in clause 4. Please refer to my comments in section 2.9. Other than that, the clause is written in declarative language. I believe these have all been fixed.

## Frame formats (Clause 9)

Clause 9 is reserved for describing structure (apart from statements in 9.1). Statements that describe the actions of a STA in order to determine a value for a field and any other behavioural specification should not be present in Clause 9. The following sentences in 45.16 may contain behavioural description: “The GCR Mode field is set to 10 when the 16 BlockAck frame is sent in response to a GCR BlockAckReq frame, set to 01 when the BlockAck 17 frame is sent in response to a GLK-GCR BlockAckReq, and set to 00 otherwise”. I’m referring this to the author of that text to see what he wants to do.

## SAP Interfaces (Clause 6)

* In 29.22, the description for the GLK-GCR Parameter Set element is not complete. Please include a condition or conditions about when the parameter is present.
* In 32.8, the description for the GLK-GCR Parameter Set element is not complete. Please include a condition or conditions about when the parameter is present.
* In 35.1, the description for the GLK-GCR Parameter Set element is not complete. Please include a condition or conditions about when the parameter is present.
* In 37.37, the description for the GLK-GCR Parameter Set element is not complete. Please include a condition or conditions about when the parameter is present.
* I’m referring this to the author of that text to see what he recommends.

Other than that, the consistency requirements and the primitive patterns are fine. Note that there is no status code.

## Annexes

The ordering is OK.

## Annex A – Bibliography

Checked. It is ok.

## Annex B – PICS

Checked. It looks ok.

## Annex C – MIB

# The MIBs written in C.3 is not aligned with the typical format. For example, in 84.28, it says “False for GLK capable STA that does not support GLK-GCR or for a STA that is not GLK capable”. It should be better to rewrite as “When false, this attribute indicates GLK capable STA that does not support GLK-GCR or for a STA that is not GLK capable”.

* Fixed as noted above.

# ANA

***TGak editor, please perform actions shown below in “actions arising”***

| **Resources by Doc1Subclause for MDR** |
| --- |
| **RefDoc1Subclause** | **ResourceName** | **Status** |
| 8.2.4.1.2 | ProtocolVersions | N/A |
| 8.2.4.1.3 | FrameTypes | N/A |
| 8.2.4.1.3 | DataSubTypes | N/A |
| 8.2.4.1.3 | ExtendedSubTypes | N/A |
| 8.2.4.1.3 | ExtendedControlSubTypes | N/A |
| 8.2.4.1.3 | ControlSubTypes | N/A |
| 8.2.4.1.3 | ManagementSubTypes | N/A |
| 8.2.6 | TLV encodings | N/A |
| 8.4.1.1 | AuthenticationAlgorithmNumbers | N/A |
| 8.4.1.11 | Categories | Action 2 |
| 8.4.1.4 | Capabilities | Action 9 |
| 8.4.1.7 | ReasonCodes | Action 1 |
| 8.4.1.9 | StatusCodes | N/A |
| 8.4.2.1 | ElementIDs | Action 3 |
| 8.4.2.1 | Element ID Extension 1 | Action 4 |
| 8.4.2.100.2 | Active Path Selection Protocol | N/A |
| 8.4.2.27.2 | CipherSuiteSelectors | N/A |
| 8.4.2.27.3 | AKMSuiteSelectors | N/A |
| 8.4.2.27.4 | RSNCapabilities | N/A |
| 8.4.2.29 | ExtendedCapabilities | N/A |
| 8.4.2.50 | FastBSSTransitionSubElementIDs | N/A |
| 8.4.4 | Info IDs | N/A |
| 8.5.14.28 | WNM-Notification types | N/A |
| 8.5.2.1 | SpectrumManagementActionFrames | N/A |
| 8.5.8.1 | PublicActionFrames | N/A |
| 8.8.3 | ShortFrameTypes | N/A |
| 8.8.4 | ShortControlFrameSubTypes | N/A |
| 8.8.5 | ShortManagementFrameSubTypes | N/A |
| annex C | dot11mac | N/A |
| C.3 | dot11Groups | Action 7 |
| C.3 | dot11OperationEntry | N/A |
| C.3 | dot11phy | N/A |
| C.3 | dot11smt | Action 6 |
| C.3 | dot11StationConfigEntry | Action 5 |
| C.3 | ieee802dot11 | N/A |
| C.3 | dot11Compliances | Action 8 |
| D.1 | BehaviorLimits | N/A |
| E.1 | OperatingClassesInJapan | N/A |
| E.1 | OperatingClassesInEurope | N/A |
| E.1 | OperatingClassesGlobal | N/A |
| E.1 | OperatingClassesInUSA | N/A |
| None | MAC addresses | N/A |
| Notes:NP – Not presentOK – Present and values are correct |

Action 1: Submit ANA allocation request on Reason Code for GLK\_NOT\_AUTHORIZED in Table 9-45

Action 2: Submit ANA allocation request on Category for GLK in Table 9-47

Action 3: An ANA allocation request on Element ID for GLK Capabilities requires working group approval due to resource scarcity. It is recommended that the TG convert the element to an extension element and submit an ANA request for that instead (does not require WG approval).

Action 4: Submit ANA allocation request for Element ID Extension for GLK-GCR Parameter Set element in Table 9-77

Action 5: Submit ANA allocation request on dot11StationConfigEntry for objects dot11GLKImplemented, dot11GLKRequired, dot11EPDImplemented, dot11EPDRequired, dot11GLKLinkRateSamples, dot11GLKLinkRateWindowSize, dot11GLKLinkRateWmin, dot11GLKLinkRateWavg, dot11GLKLinkRateWgeo, dot11GLKLinkRateScaling, dot11GLKLinkRateHysteresis and dot11GLKGCRImplemented.

Action 6: Submit ANA allocation request on dot11smt for object dot11GLKLinkMetricsTable

Action 7: Submit ANA allocation request on dot11Groups for object dot11GLKComplianceGroup

Action 8: Submit ANA allocation request on dot11Compliances for object dot11GLKCompliance

Action 9: Submit ANA rename request on Capabilities for EPD in Figure 9-68. The ANA database lists B13 with name “GLK”

Request for the above has been sent and fulfilled. On the Element ID, I am requesting an extension element for both elements.

# MIB

Updates to “<ANA>” below done.

|  |
| --- |
| *Editing Instruction: TGak Editor revises Annex C as follows* **Comment:**Before applying the below <ANA> updates in Annex C, TGak shall first request the allocation of <ANA> to Robert. The below <ANA> updates are arbitrarily proposed only for the MIB compiling.dot11GLKImplemented OBJECT-TYPE SYNTAX TruthValue MAX-ACCESS read-onlySTATUS current DESCRIPTION "True for a GLK capable STA. False for a non-GLKcapable STA. This is a capability variable."::= { dot11StationConfigEntry ~~<ANA>~~169 }dot11GLKRequired OBJECT-TYPE SYNTAX TruthValue MAX-ACCESS read-writeSTATUS current DESCRIPTION "True for a STA that will not accept associations orpeer with a non-GLK capable STA. False for a STA thatwill peer or accept associations with a non-GLKcapable STA. This is a control variable. It iswritten by an external management entity. Changestake effect as soon as practical in the implementation."::= { dot11StationConfigEntry ~~<ANA>~~170 }dot11EPDImplemented OBJECT-TYPE SYNTAX TruthValue MAX-ACCESS read-onlySTATUS current DESCRIPTION "True for a STA that supports the receipt andtransmission of EPD MSDUs. False if the STA doesnot support EPD. This is a capability variable."~~"~~::= { dot11StationConfigEntry ~~<ANA>~~171 }dot11EPDRequired OBJECT-TYPE SYNTAX TruthValue MAX-ACCESS read-writeSTATUS current DESCRIPTION "True for a STA that will only associate, direct link,or peer with a STA supporting EPD. False for a STAthat will associate or peer with a STA that does notsupport EPD. This is a control variable. It is writtenby an external management entity. Changes take effectas soon as practical in the implementation."::= { dot11StationConfigEntry ~~<ANA>~~172 }dot11GLKLinkRateSamples OBJECT-TYPE SYNTAX Unsigned32 (2..257)MAX-ACCESS read-onlySTATUS current DESCRIPTION "This is the number of data bit rate sample windowsin the array of such values used in the determinationof the data rate metrics for general links. This is acontrol variable. It is written by an externalmanagement entity. Changes take effect as soon aspractical in the implementation." DEFVAL { 8 }::= { dot11StationConfigEntry ~~<ANA>~~173 }dot11GLKLinkRateWindowSize OBJECT-TYPE SYNTAX Unsigned32 (1..256)MAX-ACCESS read-onlySTATUS current DESCRIPTION "The size of the data bit rate sample window durationin units of 16 TUs. This is a control variable. It iswritten by an external management entity. Changes takeeffect as soon as practical in the implementation." DEFVAL { 8 }::= { dot11StationConfigEntry ~~<ANA>~~174 }dot11GLKLinkRateWmin OBJECT-TYPE SYNTAX Unsigned32 (0..255)MAX-ACCESS read-onlySTATUS current DESCRIPTION "This value is the relative weight given to theminimum bit rate observed in the data rate samplewindows on a general link or peering. A larger valuemeans more weight or influence for the minimumobserved bit rate. This is a control variable.It is written by an external management entity.Changes take effect as soon as practical in theimplementation.It is used in the determination of the data ratemetrics for general links."  DEFVAL { 50 }::= { dot11StationConfigEntry ~~<ANA>~~175 }dot11GLKLinkRateWavg OBJECT-TYPE SYNTAX Unsigned32 (0..255)MAX-ACCESS read-onlySTATUS current DESCRIPTION "This value is the relative weight given to thearithmetic mean bit rate observed in the data rate samplewindows on a general link or peering. A larger value meansmore weight or influence for the arithmetic meanobserved bit rate. This is a control variable. Itis written by an external management entity. Changestake effect as soon as practical in the implementation.It is used in the determination of the data ratemetrics for general links."  DEFVAL { 50 }::= { dot11StationConfigEntry ~~<ANA>~~176 }dot11GLKLinkRateWgeo OBJECT-TYPE SYNTAX Unsigned32 (0..255)MAX-ACCESS read-onlySTATUS current DESCRIPTION "This value is the relative weight given to thegeometric mean of the bit rates observed in the datarate sample windows on a general link or peering. A largervalue means more weight or influence for the geometricmean of the observed bit rates. This is a controlvariable. It is written by an external managemententity. Changes take effect as soon as practical inthe implementation.It is used in the determination of the data ratemetrics for general links."  DEFVAL { 50 }::= { dot11StationConfigEntry ~~<ANA>~~177 }dot11GLKLinkRateScaling OBJECT-TYPE SYNTAX Unsigned32 (1..256)MAX-ACCESS read-onlySTATUS current DESCRIPTION "This value is used to scale the data rate reportedappropriately depending on the use of that rate and how pessimistically data rates are being determined. A scaling of 16 would produce a data rate suitablefor use in IEEE Std 802.1Q protocols with no pessimism.This is a control variable. It is written by anexternal management entity. Changes take effect assoon as practical in the implementation." DEFVAL { 10 }::= { dot11StationConfigEntry ~~<ANA>~~178 }dot11GLKLinkRateHysteresis OBJECT-TYPE SYNTAX Unsigned32 (1..256)MAX-ACCESS read-onlySTATUS current DESCRIPTION "This value is used to apply hysteresis to the datarate reported for a general link. If it is set to 256,then any change in rate is immediatelyreported. The smaller its value, the larger thechange that must occur before that change is report.This is a control variable. It is written by anexternal management entity. Changes take effect assoon as practical in the implementation." DEFVAL { 200 }::= { dot11StationConfigEntry ~~<ANA>~~179 }dot11GLKGCRImplemented OBJECT-TYPE SYNTAX TruthValue MAX-ACCESS read-onlySTATUS current DESCRIPTION "True for a GLK capable STA that supports GLK-GCR.False for GLK capable STA that does not supportGLK-GCR or for a STA that is not GLK capable. Thisis a capability variable."::= { dot11StationConfigEntry ~~<ANA>~~180 }Insert the following at the end of the GROUPS in dot11smt: -- dot11GLKLinkMetricsTable ::= ~~(~~{ dot11smt ~~<ANA>~~41 ~~)~~}Insert the following just before the beginning of the Compliance Information section: -- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*-- \* dot11GLKLinkMetrics TABLE-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*dot11GLKLinkMetricsTable OBJECT-TYPE SYNTAX SEQUENCE OF ~~d~~Dot11GLKLinkMetricsEntry MAX-ACCESS ~~read-only~~not-accessible STATUS current DESCRIPTION "Table of GLK Link metrics information. One entry per association or peering." ::= { dot11smt ~~<ANA>~~41 }**Comment:****Because dot11GLKLinkPeerAddress is not defined, the MIB can’t be compiled. The suggestion is to replace it with ifIndex. But, if the TGak wants to use a different interface index such as dot11GLKLinkPeerAddress(?), please first define it in the below Dot11GLKLinkMetircsEntry.**Donald: Changed to use ifIndex as suggested.dot11GLKLinkMetricsEntry OBJECT-TYPE SYNTAX Dot11GLKLinkMetricsEntry MAX-ACCESS not-accessible STATUS current DESCRIPTION "An entry in the dot11GLKLinkMetricsTable" INDEX { ~~dot11GLKLinkPeerAddress~~ifIndex } ::= { ~~dot11RMNeighborReportTable1~~ dot11GLKLinkMetricsTable 1 }Dot11GLKLinkMetricsEntry ::=  SEQUENCE {  dot11GLKLinkRawRate Unsigned32, dot11GLKLinkMinRate Unsigned32, dot11GLKLinkAvgRate Unsigned32, dot11GLKLinkGeoRate Unsigned32, dot11GLKLinkSTDRate Unsigned32, dot11GLKLinkRateReported Unsigned32 } dot11GLKLinkRawRate OBJECT-TYPE SYNTAX Unsigned32MAX-ACCESS read-onlySTATUS current DESCRIPTION "The maximum achievable data rate given the enabled STA features in units of 100 kbit/s. This is a status variable."::= { dot11GLKLinkMetricsEntry 1 }dot11GLKLinkMinRate OBJECT-TYPE SYNTAX Unsigned32MAX-ACCESS read-onlySTATUS current DESCRIPTION "The minimum data rate seen in the window of samples in units of 100 kbit/s. This is a status variable."::= { dot11GLKLinkMetricsEntry 2 }dot11GLKLinkAvgRate OBJECT-TYPE SYNTAX Unsigned32MAX-ACCESS read-onlySTATUS current DESCRIPTION "The arithmetic mean data rate seen across the window of samples in units of 100 kbit/s. This is a status variable."::= { dot11GLKLinkMetricsEntry 3 }dot11GLKLinkGeoRate OBJECT-TYPE SYNTAX Unsigned32MAX-ACCESS read-onlySTATUS current DESCRIPTION "The geometric mean of the data rates seen across the window of samples in units of 100 kbit/s. This is a status variable."::= { dot11GLKLinkMetricsEntry 4 }dot11GLKLinkSTDRate OBJECT-TYPE SYNTAX Unsigned32MAX-ACCESS read-onlySTATUS current DESCRIPTION "The standard deviation of the data rates seen across the window of samples in units of 100 kbit/s. This is a status variable."::= { dot11GLKLinkMetricsEntry 5 }dot11GLKLinkRateReported OBJECT-TYPE SYNTAX Unsigned32MAX-ACCESS read-onlySTATUS current DESCRIPTION "The reported link data rate in units of 100 kbit/s.This is a status variable."::= { dot11GLKLinkMetricsEntry 6 }-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*-- \* End of dot11GLKLinkMetrics TABLE-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\****Add the following at the end of the Compliance Information section:***-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*-- \* Compliance Statements - GLK-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*dot11GLKComplianceGroup OBJECT-GROUP OBJECTS { dot11~~GeneralLink~~GLKImplemented, dot11~~GeneralLink~~GLKRequired, dot11EPDImplemented, dot11EPDRequired, dot11GLKLinkRateSamples, dot11GLKLinkRateWindowSize, dot11GLKLinkRateWmin, dot11GLKLinkRateWavg, dot11GLKLinkRateWgeo, dot11GLKLinkRateScaling, dot11GLKLinkRateHysteresis, dot11~~GeneralLink~~GLKGCRImplemented } STATUS current DESCRIPTION "This object group provides the objects from the IEEE 802.11 MIB required to manage General Link functionality." ::= { dot11Groups ~~<ANA>~~99 }dot11GLKCompliance MODULE-COMPLIANCE STATUS current DESCRIPTION "This object class provides the objects from the IEEE 802.11 MIB required to manage General Link functionality." MODULE -- this module MANDATORY-GROUPS { dot11GLKComplianceGroup } ::= { dot11Compliances ~~<ANA>~~21 } |

# IEEE-SA MEC

## The MEC comments

Hello Robert,

Please let this email serve as the MEC for P802.11ak-2016. Below is my comment:

"This draft meets all editorial requirements."

--

Michelle Turner
Managing Editor, Content Production and Management

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## The response to the MEC comments