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                      The IEEE 802/IETF Relationship

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Abstract

   Since the late 1980s, IEEE 802 and IETF have cooperated in the
   development of Simple Network Management Protocol (SNMP) MIBs and
   Authentication, Authorization, and Accounting (AAA) applications.
   This document describes the policies and procedures that have
   developed in order to coordinate between the two organizations, as
   well as some of the relationship history.

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1. Introduction

   Since the late 1980s, participants in IEEE 802 and the IETF have
   cooperated in the development of Management Information Bases (MIBs)
   and Authentication, Authorization, and Accounting (AAA) applications
   relating to IEEE standards. This has included the Bridge MIB
   [RFC1493] [RFC4188], the multicast filtering and VLAN extension MIB
   [RFC2674] [RFC4363], the Hub MIB [RFC2108], the Ethernet-like
   Interfaces MIB [RFC3635], the MAU MIB [RFC3636], the WAN Interfaces
   Sublayer MIB [RFC3637], the Power Ethernet MIB [RFC3621], IEEE 802.1X
   RADIUS usage guidelines [RFC3580], the revised Extensible
   Authentication Protocol (EAP) specification [RFC3748], RADIUS/EAP
   [RFC3579], and the EAP State Machine specification [RFC4137]. This
   document describes the policies and procedures that have been put in
   place to encourage cooperation between the IETF and IEEE 802.
   Details of the relationship history are included in Appendix A.

   In order to improve communications between the IETF and IEEE 802,
   members of the Internet Engineering Steering Group (IESG) and
   Internet Architecture Board (IAB) (including Bert Wijnen, James
   Kempf, and Bernard Aboba) met with the IEEE 802 Executive Committee
   in Vancouver, Canada, in January 2004. At that meeting, a number of
   issues were discussed and new procedures were put in place.

1.1. Liaison Communications

   IETF Working Groups are organized into areas, which have one or more
   Area Directors. The Area Directors, plus the IETF Chair, comprise
   the Internet Engineering Steering Group (IESG). IEEE 802 Working
   Groups have one or more Task Groups. The IEEE 802 Working Group
   Chairs, plus the IEEE 802 Chair, comprise the IEEE 802 Executive
   Committee (ExComm).

   Participants in the IETF are appointed as liaisons to other
   organizations by the IAB or IESG as appropriate. This includes a
   liaison to IEEE 802 as well as liaisons to specific IEEE 802 Working
   Groups. The IETF liaison web page includes a list of IETF liaisons,
   as well as a pointer to the archive of liaison statements received by
   the IETF [Liaison-Page]. IETF processes for management of liaison
   relationships are described in [BCP102]; procedures for handling of
   incoming liaison statements are described in [BCP103]. In order to
   ensure that liaison statements from IEEE 802 to the IETF are archived
   and responded to, IEEE 802 liaisons to IETF should utilize the IETF
   liaison management tool to submit liaison communications. A username
   and password suitable for use with the tool can be obtained by
   sending mail to iesg-secretary@ietf.org. If a liaison management
   account is not available, liaison communications can be sent to the
   IETF liaison(s) to IEEE 802 and copied to statements@ietf.org.

However, in this case substantially greater processing delays will
occur due to the need for manual handling by the IETF Secretariat
staff.

Liaison requests from the IETF to IEEE 802 should be sent to the
Chair(s) of the IEEE 802 WG to which the request pertains, with a
copy sent to the IEEE 802 Chair and the IEEE 802 liaison(s) to IETF.
IEEE 802 procedures for communicating with other standards bodies are
described in Section 14.1 of [Policy]. Liaison communications to
IEEE 802 WGs are archived by the individual WGs.

1.2. Access to IEEE 802 Archives

Access to IEEE 802 standards more than six months old is provided
free of charge on the IEEE 802 website via the Get IEEE 802 Program
[GetIEEE-802]. Access to IEEE 802 work-in-progress has frequently
arisen as an issue in cooperation between IETF and IEEE 802. While
in the past IETF Working Groups (WGs) have successfully negotiated
access to IEEE 802 work-in-progress, each instance has been handled
separately and took significant time and effort to complete. In
order to more easily enable document access for IETF WGs
collaborating with IEEE 802, a liaison statement was sent to the IETF
in July 2004 by Paul Nikolich, Chair of IEEE 802 [IEEE-802Liaison],
describing the process by which IETF WGs can obtain access to IEEE
802 work-in-progress. IEEE 802 WG Chairs have the authority to grant
membership in their WGs, and can use this authority to grant
membership to an IETF WG chair upon request. The IETF WG chair will
be provided with access to the username/password for the IEEE 802 WG
archives, and is permitted to share that information with
participants in the IETF WG. Since it is possible to participate in
IETF without attending meetings, or even joining a mailing list, IETF
WG chairs will provide the information to anyone who requests it.
However, since IEEE 802 work-in-progress is copyrighted,
incorporating material into IETF documents or posting the
username/password on mailing lists or websites is not permitted.

1.3. New Work Review

In order to enable IEEE 802 review of proposed IETF WG charters, as
well as to enable IETF review of proposed IEEE 802 Project
Authorization Requests (PARs), the New Work mailing list is used.
The IEEE 802 Executive Committee is subscribed to the list, so that
it can receive proposed IETF WG Charters. Proposed IEEE 802 PARs are
posted to the New Work list as well. Where a New Work announcement
is of particular interest, it is also (manually) forwarded to the
relevant IETF and IEEE 802 mailing lists.

However, by the time an IETF WG Charter or IEEE 802 PAR appears on
New Work, a IETF BOF or IEEE 802 "Call for Interest" has already
occurred, interest has been demonstrated and considerable work has
gone into development of the Charter or PAR. If problems are found
at that point, it is often too late in the process to make major
changes. Therefore, where a potential work item is likely to be
controversial, discussions between IETF and IEEE 802 are encouraged
to occur earlier in the process.

1.4. MIB Review

With travel budgets under pressure, it has become increasingly
difficult for companies to fund employees to attend both IEEE 802 and
IETF meetings. As a result, an alternative is needed to past
arrangements that involved chartering MIB work items within an IETF
WG. In order to encourage wider review of MIBs developed by IEEE 802
WGs, it is recommended that Simple Network Management Protocol (SNMP)
MIBs developed in IEEE 802 follow the MIB guidelines [RFC4181] and be
reviewed as part of the IETF SNMP quality control process ('MIB
Doctors'). An IEEE 802 group may request assignment of a 'MIB
Doctor' to assist in a MIB review by contacting the IETF Operations
and Management Area Director.

By standardizing IEEE 802 MIBs only within IEEE 802 while utilizing
the SNMP quality control process, the IETF and IEEE 802 seek to
ensure quality while decreasing overhead. A trial run of this
process has taken place in IEEE 802.1 where a MIB Doctor (David
Harrington) has agreed to review IEEE 802.1 MIBs. Currently,
discussion is under way on how change control of selected IEEE 802.1
MIB documents published as RFCs can be transferred to IEEE 802.1
[MIB-TRANSFER].

1.5. EAP Review

Several IEEE 802 standards, including [IEEE-802.1X-2004],
[IEEE-802.11i], and [IEEE-802.16e], depend on EAP [RFC3748] and EAP
key management, described in [KEYFRAME]. Rather than developing
their own EAP methods, or extensions for EAP key management, IEEE 802
working groups should send a liaison letter to the IETF, outlining
the required functionality or requesting a review of draft text.
Most recently, a security review of IEEE 802.16e D8 [EAPREVIEW] has
been carried out by the EAP WG, at the request of the IEEE 802.16
Chair, Roger Marks [IEEE-802.16-Liaison1] [IEEE-802.16-Liaison2].

1.6. AAA Review

   IEEE 802 WGs requiring new AAA applications should send a liaison
   request to the IETF. Where new attributes are required rather than a
   new application, an Internet-Draft can be submitted and review can
   be requested from AAA-related WGs such as the AAA or RADEXT WGs. For
   attributes of general utility, and particularly those useful in
   multiple potential applications, allocation from the IETF standard
   attribute space is preferred to creation of IEEE 802 Vendor-Specific
   Attributes (VSAs). As noted in [RFC3575]:

   RADIUS defines a mechanism for Vendor-Specific extensions (Attribute
   26) and the use of that should be encouraged instead of allocation of
   global attribute types, for functions specific only to one vendor's
   implementation of RADIUS, where no interoperability is deemed useful.

   Where allocation of VSAs are required, it is recommended that IEEE
   802 create a uniform format for all of IEEE 802, rather than having
   each IEEE 802 group create their own VSA format. The VSA format
   defined in [IEEE-802.11F] is inappropriate for this, since the Type
   field is only a single octet, allowing for only 255 attributes.
   Recently, the AAA Doctors list has been created within the IETF
   Operations and Management Area Directorate, serving a similar
   function to the MIB Doctors. While the AAA Doctors have not yet been
   called upon to assist with and review AAA work outside of the IETF,
   this group could potentially be of assistance to IEEE 802 working
   groups requiring help with AAA.

1.7. Document Review

   With the areas of cooperation between IEEE 802 and IETF increasing,
   the document review process has extended beyond the traditional
   subjects of SNMP MIBs and AAA. For example, as part of the IETF
   CAPWAP WG charter, IEEE 802.11 was asked to review the CAPWAP
   Taxonomy Document [RFC4118]; Dorothy Stanley organized an ad hoc
   group for this purpose. IEEE 802.11 has also reviewed [IDSEL] and
   [IABLINK]. Within IETF, IEEE 802 comments are resolved using normal
   WG and IETF processes.

   IETF participants can comment as part of the IEEE 802 ballot process,
   regardless of their voting status within IEEE 802. Comments must be
   composed in the format specified for the ballot, and submitted by the
   ballot deadline.

1.8. EtherType Allocation

   The EtherType field is very limited, so that allocations are made
   solely on an "as needed" basis. For related uses, a single EtherType
   should be requested, with additional fields serving as sub-protocol
   identifiers, rather than applying for multiple EtherTypes. EtherType
   allocation policy is described in [TYPE-TUT].

   While a fee is normally charged by IEEE 802 for the allocation of an
   EtherType, IEEE 802 will consider waiving the fee for allocations
   relating to an IETF standards track document, based on a request from
   the IESG.

2. Security Considerations

   As IEEE 802 becomes increasingly involved in the specification of
   standards for link-layer security, experience has shown that it is
   helpful to obtain outside review of work-in-progress prior to
   publication. This has proven somewhat challenging since access to
   IEEE 802 work-in-progress documents is often tightly controlled. For
   example, special permission had to be obtained for IEEE 802.11i to be
   able to circulate a version of its security standard-in-progress for
   review. A liaison between an IEEE 802 group and an IETF WG can help
   in obtaining the necessary level of review.

   Experience has also shown that IETF standards may not be written to
   the level of clarity required by the IEEE 802 standards process. In
   the case of EAP [RFC3748], the process of developing the EAP state
   machine specification [RFC4137] proved useful in uncovering aspects
   requiring clarification, and the joint review process exposed IEEE
   802 and IETF documents-in-progress to wider review than might
   otherwise have been possible.

   Similarly, the development of [IEEE-802.11i], [RFC3748], [KEYFRAME],
   and [RFC4017] led to a deeper understanding of the limitations and
   security vulnerabilities of the EAP/AAA system. As described in
   [Housley], it is not advisable to develop new AAA key management
   applications without completing a security analysis, such as the
   analysis provided in [KEYFRAME].

   Due to weaknesses in the RADIUS specification [RFC2865], it is
   relatively easy for protocol extensions to introduce serious security
   vulnerabilities. As a result, IETF review of IEEE 802 RADIUS
   extensions is advisable, and the RADIUS IANA Considerations [RFC3575]
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Appendix A. Relationship History

A.1. MIB Development

A.1.1. Bridge MIB

   The relationship between IETF and IEEE 802 began in the late 1980s
   with SNMP MIBs developed for the original IEEE 802.1D standard.
   Because the IEEE specification [IEEE-802.1D] contained only a
   functional definition of the counters and operations, the IETF's
   Bridge MIB WG took on the role of defining the Bridge MIB [RFC1493],
   which was published as an RFC. Fred Baker and later Keith McCloghrie
   served as chairs of the Bridge WG.

   The Bridge MIB combined the work of Keith McCloghrie, Eric Decker,
   and Paul Langille, with spanning tree expertise provided by Anil
   Rijsinghani. Mick Seaman (author of 802.1D) and Floyd Backes (who
   had written the code for Digital Equipment's spanning tree
   implementation) were the main contacts within IEEE 802.1. Since
   Mick, Floyd, Anil, and Paul all worked for Digital Equipment
   Corporation at the time, much of the coordination between IEEE 802.1
   and the Bridge MIB WG took place in the hallways at Digital, rather
   than within official channels.

A.1.2. MAU and Hub MIBs

   In the early 1990s when IEEE 802.3 was completing the first Ethernet
   standards, SNMP was not yet the dominant network management protocol.
   As a result, a 'protocol independent' MIB is included in Clause 30 of
   the IEEE 802.3 standard [IEEE-802.3], which is updated each time the
   Ethernet standard is enhanced to support higher speeds. In parallel,
   IEEE 802 participants interested in network management were active in
   the formation of the IETF HUBMIB WG, which took on the task of
   transforming IEEE 802 definitions into SNMP MIBs documented as
   Standards Track RFCs. This included Dan Romascanu, Chair of the IETF
   HUBMIB WG since 1996.

   The Charter of the HUBMIB WG explicitly mentions that the IEEE 802.3
   standard is the starting point for the Ethernet MIB, but at the same
   time reserves the right to deviate from the IEEE model -- either to
   cover only part of the capabilities offered by the standard or to add
   MIB objects that are not directly derived from the IEEE model (mostly
   implemented in software). If management needs lead to requirements
   for hardware support, the IETF HUBMIB WG is to provide this input to
   IEEE 802.3 in a timely manner.

Cooperation between the IETF HUBMIB WG and IEEE 802.3 has continued
for more than a decade until today, mostly based on the work of a few
editors supported by their companies, who are taking the IEEE
standards and mapping them into a management data model and MIBs.
Work items include:

- The Hub MIB [RFC2108], which has gone through three iterations,
  and is probably ending its evolution, as repeaters are less used
  in Ethernets.
- The MAU MIB, which has been updated each time a new Ethernet speed
  is developed, with [RFC3636] accommodating 10-Gbps Ethernet.
- The Ethernet-like Interfaces MIB was not originally a work item
  of the HUBMIB WG, but the WG took responsibility for a revision,
  published as [RFC3635].
- The WAN Interface Sublayer MIB [RFC3637] and the Power Ethernet MIB
  [RFC3621] were developed in IEEE 802.3 and the IETF HUBMIB WG.

In 2000, an official liaison was established between IEEE 802.3 and
the IETF HUBMIB WG, and Dan Romascanu was appointed IETF liaison.
The conditions of the liaison agreement allows editors and other
participants in the IETF HUBMIB WG access to work-in-progress drafts
in IEEE 802.3 on a personal basis, for the purpose of working on MIBs
before the release of the standard. However, the username and
password for IEEE 802.3 document access are not for publication on
any IETF website or mailing list.

A.1.3. 802.1p/Q MIB

In 1996 as the 802.1p and 802.1Q [IEEE-802.1Q] standards were being
completed, a need was perceived for development of an SNMP MIB, based
on the management clauses of those standards. IEEE 802 management
clauses are written in a manner that was independent of any protocol
that may be used to implement them.

At that time, there were a number of proprietary VLAN management MIBs
that were both inadequate and difficult to understand. As a result,
there was a need for a more comprehensive, simpler model for VLAN
management, along with the priority and multicast filtering
management also defined by these standards.

A small group of participants from the 802.1 WG began working on the
problem independently, then combined their work. The original
authors of the Bridge MIB, on which some of the work was based,
reviewed the initial work.

By the end of 1997, the work was ready for review by a larger
audience. Andrew Smith worked with Keith McCloghrie, chair of the
Bridge MIB WG (dormant at the time), to obtain a meeting slot at the
March 1998 IETF meeting. After this, review and development of the
MIB continued on the IETF standards track.

During the development of [RFC2674], there was no official inter-
working between the IETF Bridge MIB and IEEE 802.1 groups.
Development of this MIB was successful, because the main developers
(Andrew Smith and Les Bell) were involved in both the IEEE 802.1 and
the IETF Bridge MIB WGs.

A.1.4. 802.3ad and 802.1X MIBs

As part of the IEEE 802.3ad and IEEE 802.1X standards work, it was
decided that it would be better to develop a MIB as part of the
standards, rather than wait until an IETF WG was formed, and develop
the MIBs separately, so as to avoid a significant time lag in their
development.

As Les Bell was the participant in IEEE 802.3ad and IEEE 802.1 most
familiar with SNMP MIB development, he put together the initial MIBs
based on the management framework the groups had come up with.
Additional assistance was then received for both MIBs from within the
IEEE 802.3ad and IEEE 802.1X groups. Tony Jeffree, editor of both
standards, acted as editor of the MIBs as well.

The problem with IEEE 802 developing these MIBs without IETF
involvement was the lack of review. IEEE 802 members are generally
not familiar with MIBs, and very few comments were received as part
of the balloting process for either MIB.

In the case of the IEEE 802.3ad MIB, this meant that basic errors
were not discovered until just before publication. Unfortunately, by
then it was too late, and the corrections submitted to the IEEE
802.3ad chair and document editor did not get applied to the
published version.

Subsequent to the publication of [IEEE-802.1X], the IEEE 802.1X MIB
was reviewed within the Bridge WG, and several syntax errors were
found. These have been corrected in the version of the MIB module
that was developed as part of [IEEE-802.1X-2004]. However, while
[IEEE-802.1X-MIB] was originally published as a work in progress
within the Bridge WG, there was not sufficient interest to complete
its publication as an RFC. As a result, the draft has now expired.

A.1.5. 802.1t, 802.1u, 802.1v, and 802.1w MIBs

   802.1t and 802.1u were minor amendments to the 802.1D and 802.1Q
   standards, requiring some additions to the MIB published in
   [RFC2674]. 802.1v was a new feature extending the VLAN
   classification schemes of 802.1Q, also requiring extensions to
   [RFC2674]. 802.1w was a new version of Spanning Tree, requiring
   rewriting of part of [RFC1493].

   When Les Bell took on the role of Chair of the IETF Bridge MIB WG in
   2001, these issues were raised as new work items and two volunteers
   were found to become editors of the Internet-Drafts. A work item was
   also included to publish the IEEE 802.1X MIB as an Informational RFC.

   This approach worked well for a while, but it then became difficult
   for the participants, including the editors and the Chair, to sustain
   a level of interest sufficient to overcome the difficulties
   introduced by budget cutbacks. As a result, the drafts have now
   expired, although there are no significant technical issues
   outstanding.

A.2. AAA/EAP

   Since the late 1990s, IEEE 802.1 has been involved in work relating
   to authentication and authorization [IEEE-802.1X], which led to
   discovery of issues in several IETF specifications, including
   [RFC2284] and [RFC2869]. Similarly, IETF participants have uncovered
   issues in early versions of the RADIUS usage specifications such as
   [RFC3580], as well as the IEEE 802.1X state machine [Mishra].

   In order to address these issues and ensure synchronization between
   IEEE 802.1 and the IETF EAP and AAA WGs, a liaison arrangement was
   utilized during the development of [IEEE-802.1X] and
   [IEEE-802.1X-2004].

   IEEE 802.11 groups such as IEEE 802.11i and IEEE 802.11F have also
   become dependent on EAP and AAA work. This relationship was more
   challenging since IEEE 802.11 required development of EAP methods and
   the EAP Key Management Framework, which represented substantial new
   IETF work, as opposed to the clarifications and updates required by
   IEEE 802.1.

A.2.1. IEEE 802.1X

   IEEE 802.1X-2001 [IEEE-802.1X] defined the encapsulation of EAP
   [RFC2284] over IEEE 802, as well as a state machine for the joint
   operation of IEEE 802.1X and EAP.

During the development of IEEE 802.1X-2001, several problems were
discovered in the specification for RADIUS/EAP [RFC2869], and as a
result, work was begun on a revision [RFC3579]. In addition,
clarifications were required on how RADIUS attributes defined in
[RFC2865], [RFC2866], [RFC2867], [RFC2868], [RFC2869], and [RFC3162]
would be interpreted by IEEE 802.1X implementations. To address
this, a non-normative RADIUS usage appendix was added to
[IEEE-802.1X], and published as [RFC3580].

Subsequent to the publication of [IEEE-802.1X], a formal analysis of
the IEEE 802.1X state machine by the University of Maryland disclosed
several security issues [Mishra]. Discussion within IEEE 802.1
pointed to lack of clarity in [RFC2284], which resulted from the
absence of a specification for the EAP state machine specification.

At that time, EAP was handled within the IETF PPPEXT WG, which was
largely inactive. In order to undertake work on a revised EAP
specification as well as the specification of the EAP state machine,
the IETF EAP WG was formed in July 2002. Bernard Aboba, a
participant in IEEE 802.1 as well as PPPEXT, was named co-chair.

Work on the EAP state machine [RFC4137] and revised EAP specification
[RFC3748] proceeded in parallel within the EAP WG, with issues or
changes in one document requiring changes to the other document, as
well as revisions to [IEEE-802.1X-2004]. The revised RADIUS/EAP
specification [RFC3579] was also reviewed within the EAP WG, since at
that time the RADEXT WG had not yet been formed.

The revision to IEEE 802.1X [IEEE-802.1X-2004] included the
following:

- a revised RADIUS usage appendix based on [RFC3580]
- clarifications based on [RFC3579]
- a revised IEEE 802.1X state machine, based on [RFC3748] and
  [RFC4137]

Due to the deep dependencies between [IEEE-802.1X-2004], [RFC3748],
and [RFC4137], a liaison was established between IEEE 802.1X-REV and
the IETF EAP WG in August 2002. This enabled participants in the
IETF EAP WG to obtain access to the IEEE 802.1X revision in progress.

IEEE 802 groups are duty bound to consider all comments received,
regardless of their origin. This allows IETF participants to comment
as part of the IEEE 802 ballot process, regardless of their voting
status within IEEE 802. Where there is active cooperation, IETF WGs
may be made aware that IEEE 802 ballots are occurring and that their

comments are welcome. IEEE 802.1X-REV and IEEE 802.11i ballots were
announced on the EAP WG mailing list, as are IEEE 802 interim meeting
arrangements.

Similarly, during the IEEE 802.1X-REV ballot process, comments were
received relating to [RFC3748], [RFC4137], and [RFC3579]. These
comments were tracked on the EAP WG Issues List, and were
subsequently addressed in the documents.

In April 2003, [RFC3580] was approved by the IESG for publication as
an RFC, and in May 2003, [RFC3579] was approved for publication as an
RFC. The review process for both drafts involved bringing the
documents to IETF last call, and then reposting the IETF last-call
announcement on the IEEE 802.1 mailing list. While ballot comments
on IEEE 802.1X-REV were also reflected in changes to both documents,
it was necessary for both documents to be approved for publication as
RFCs well in advance of Sponsor Ballot, in order to ensure that RFC
numbers would be assigned in time, so as to avoid delaying
publication.

Overall, despite the complex inter-dependencies between
[IEEE-802.1X-2004], [RFC3748], and [RFC4137], the documents were
produced without undue delay. This was largely due to the work of
joint participants in IEEE 802.1 and IETF EAP WG.

A.2.2. IEEE 802.11i

IEEE 802.11i was chartered to specify security enhancements to
[IEEE-802.11]. Since [IEEE-802.11i] utilized IEEE 802.1X, it
depended on [IEEE-802.1X-2004]. As a result, IEEE 802.11i and IEEE
802.1 held joint meetings at IEEE 802 plenaries and established a
liaison arrangement that permitted members of either group (as well
as EAP WG participants) access to IEEE 802.11i work-in-progress.

Since [IEEE-802.11i] depended on [IEEE-802.1X-2004], it inherited the
dependencies of [IEEE-802.1X-2004], including work on EAP, EAP
methods, and AAA support for EAP. In addition, since IEEE 802.11i
utilized EAP for key management whereas [IEEE-802.1X] does not,
additional security requirements arose with respect to EAP methods.

In February 2002, IEEE 802.11 sent a liaison letter to the IESG
[IEEE-80211Liaison1] requesting additional work on EAP, EAP methods,
and EAP key management. This letter was presented at the second EAP
BOF at IETF 53, and was used as input to the EAP WG charter. In
March 2003, another liaison letter was presented, providing further
clarifications on requirements for EAP method work
[IEEE-80211Liaison2]. This included a request from IEEE 802.11i for

the EAP WG to consider changing the mandatory-to-implement EAP method
within [RFC3748], so as to provide a method meeting the security
requirements of IEEE 802.11i.

During IETF 56, the request for changing the mandatory-to-implement
method was considered by the EAP WG. A recommendation was made by
the Internet Area Director Erik Nordmark that the IEEE 802.11i
requirements be documented in an RFC and that the EAP WG consider the
security requirements for EAP methods in various situations. It was
recommended not to change the mandatory-to-implement method, since
the EAP WG was not chartered to do work on methods. However, it was
decided to produce a document describing the EAP method requirements
for WLAN usage. This document was subsequently published as
[RFC4017].

Most recently, IEEE 802.11r has been involved in discussions relating
to fast handoff, which may potentially require AAA extensions as well
as changes to the EAP key hierarchy. However, the direction of this
work has not yet been determined so that no liaison request has been
formulated yet.

In April 2003, Dorothy Stanley was appointed liaison from IEEE 802.11
to the IETF, in order to help coordinate between IEEE 802.11 and IETF
WGs, including AAA, BMWG, CAPWAP, and EAP.

A.2.3. IEEE 802.11F

   IEEE 802.11F was chartered with development of a recommended practice
   for Inter-Access Point Communications. As part of development of an
   Inter-Access Point Protocol (IAPP), it was necessary to secure
   communications between the access points, as well as to support the
   reverse resolution of the MAC address of the previous access point to
   its IP address, so as to allow the two access points to communicate
   via IAPP. Since the two access points might not be on the same link,
   Inverse ARP [RFC2390] was not considered sufficient in all cases.

   IEEE 802.11F elected to extend the RADIUS protocol [RFC2865] to
   provide inverse address resolution as well as IPsec key management.
   This was accomplished via use of Vendor-Specific Attributes (VSAs),
   as well as new RADIUS commands, added through definition of
   additional values for the RADIUS Service-Type attribute. As a
   result, IETF review was not required under the IANA considerations
   included in [RFC2865]. Subsequently, the RADIUS IANA considerations
   [RFC3575] were revised so as to require IETF review in most cases.

No liaison arrangement was developed between IEEE 802.11F and IETF
WGs such as AAA WG or SEAMOBY WG, so as to allow IETF participants
access to the IEEE 802.11F specifications prior to publication. Once
IEEE 802.11F entered into Recirculation ballot, only comments
relating to changes in the specification could be considered. As a
result, issues raised relating to the IEEE 802.11F RADIUS extensions
were rejected.

IEEE 802.11F was a Trial Use Recommended Practice. The IEEE 802
Executive Committee approved its withdrawal on November 18, 2005. As
a result, the RADIUS parameters allocated for use by IEEE 802.11F are
available to be reclaimed.

Appendix B. IAB Members at the Time of This Writing

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