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E. Lear  
Cisco Systems GmbH  
H. Alvestrand  
Cisco Systems  
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**Getting rid of the cruft: an experiment to identify obsolete standards  
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Abstract

This memo documents an experiment to review and classify Proposed Standards as not reflecting documented practice within the world today. The results identify three classes of documents marked as Proposed Standards that should be considered for retirement in some way or another. We propose four options to move forward with further work in this area ranging from doing nothing to accepting the results

entirely.

## **1. Introduction and history**

[RFC 2026](#), and [RFC 1602](#) before it, specified time lines for review of immature (draft or proposed) standards. The purpose of such review was to determine whether such documents should be advanced, retired, or developed further.[\[1\]](#)

This procedure has never been followed in the history of the IETF. Since this procedure has not been followed, members of the community have suggested that the retiring of a document to Historic is a significant event, which should be justified carefully - leading to the production of documents such as [RFC 2556](#) (OSI connectionless transport services on top of UDP Applicability Statement for Historic Status) and [RFC 3166](#) (Request to Move [RFC 1433](#) to Historic Status).

Such documents require significant time and effort on the part of authors, area directors, and the RFC Editor.

## **2. Bulk Decommissioning Procedure**

From the Fall of 2004 through the Spring of 2005 the authors conducted an experiment to determine how many Proposed Standards could be considered obsolete. The experiment was operated as follows:

- o Identify with a group of documents that are standards.
- o Assume by default that each document will be retired.
- o Create a mailing list for discussion with a policy of open access.
- o Allow any document to be removed from the list of those to be retired for virtually any reason, so long as a reason is provided.
- o Present the list to the working group, IETF, and IESG for review.
- o Revise list based on comments.
- o Write up results.

While the initial intent of the authors was to present a list of documents to be reclassified as Historic, whether the actual classification is Historic is left to the NEWTRK working group, the IESG, and the IETF as a community. We will discuss this further below.

## **3. Input, Mailing list, Output, and Observations**

We started with our initial document set being all RFCs with numbers less than 2000 and a status of Proposed Standard. This includes 125 documents. The input we used, starting 25 Nov 2004 can be found in the Appendix. There were some 125 documents in all.



A mailing list, [old-standards@alvestrand.no](mailto:old-standards@alvestrand.no), was created to discuss and remove candidates from this list. A call for participation was issued to the IETF-Announce list on or around the 15 Nov 2004. There were 29 members of the mailing list. Approximately 244 messages were sent to the list. People were encouraged to consider the question of whether or not an implementor would either write a new implementation or maintain an existing one.

After some months the list of documents to be considered was reduced considerably. This list was then forwarded to the IETF discussion list on 16 Dec 04 and to the NEWTRK working group list for wider review.

Here are the results:

- [RFC1234](#) (Tunneling IPX traffic through IP networks)
- [RFC1239](#) (Reassignment of experimental MIBs to standard MIBs)
- [RFC1276](#) (Replication and Distributed Operations extensions to provide an Internet Directory using X.500)
- [RFC1285](#) (FDDI Management Information Base)
- [RFC1314](#) (A File Format for the Exchange of Images in the Internet)
- [RFC1328](#) (X.400 1988 to 1984 downgrading)
- [RFC1370](#) (Applicability Statement for OSPF)
- [RFC1378](#) (The PPP AppleTalk Control Protocol (ATCP))
- [RFC1381](#) (SNMP MIB Extension for X.25 LAPB)
- [RFC1382](#) (SNMP MIB Extension for the X.25 Packet Layer)
- [RFC1397](#) (Default Route Advertisement In BGP2 and BGP3 Version of The Border Gateway Protocol)
- [RFC1414](#) (Identification MIB)
- [RFC1415](#) (FTP-FTAM Gateway Specification)
- [RFC1418](#) (SNMP over OSI)
- [RFC1419](#) (SNMP over AppleTalk)
- [RFC1421](#) (Privacy Enhancement for Internet Electronic Mail: Part I: Message Encryption and Authentication Procedures)
- [RFC1422](#) (Privacy Enhancement for Internet Electronic Mail: Part II: Certificate-Based Key Management)
- [RFC1423](#) (Privacy Enhancement for Internet Electronic Mail: Part III: Algorithms, Modes, and Identifiers)
- [RFC1424](#) (Privacy Enhancement for Internet Electronic Mail: Part IV: Key Certification and Related Services)
- [RFC1461](#) (SNMP MIB extension for Multiprotocol Interconnect over X.25)
- [RFC1469](#) (IP Multicast over Token-Ring Local Area Networks)
- [RFC1471](#) (The Definitions of Managed Objects for the Link Control Protocol of the Point-to-Point Protocol)
- [RFC1472](#) (The Definitions of Managed Objects for the Security Protocols of the Point-to-Point Protocol)



[RFC1473](#) (The Definitions of Managed Objects for the IP Network Control Protocol of the Point-to-Point Protocol)  
[RFC1474](#) (The Definitions of Managed Objects for the Bridge Network Control Protocol of the Point-to-Point Protocol)  
[RFC1478](#) (An Architecture for Inter-Domain Policy Routing)  
[RFC1479](#) (Inter-Domain Policy Routing Protocol Specification: Version 1)  
[RFC1494](#) (Equivalences between 1988 X.400 and [RFC-822](#) Message Bodies)  
[RFC1496](#) (Rules for downgrading messages from X.400/88 to X.400/84) when MIME content-types are present in the messages  
[RFC1502](#) (X.400 Use of Extended Character Sets)  
[RFC1512](#) (FDDI Management Information Base)  
[RFC1513](#) (Token Ring Extensions to the Remote Network Monitoring MIB)  
[RFC1518](#) (An Architecture for IP Address Allocation with CIDR)  
[RFC1519](#) (Classless Inter-Domain Routing (CIDR): an Address Assignment and Aggregation Strategy)  
[RFC1525](#) (Definitions of Managed Objects for Source Routing Bridges)  
[RFC1552](#) (The PPP Internetworking Packet Exchange Control Protocol (IPXCP))  
[RFC1553](#) (Compressing IPX Headers Over WAN Media (CIPX))  
[RFC1582](#) (Extensions to RIP to Support Demand Circuits)  
[RFC1584](#) (Multicast Extensions to OSPF)  
[RFC1598](#) (PPP in X.25)  
[RFC1648](#) (Postmaster Convention for X.400 Operations)  
[RFC1666](#) (Definitions of Managed Objects for SNA NAUs using SMIV2)  
[RFC1692](#) (Transport Multiplexing Protocol (TMux))  
[RFC1696](#) (Modem Management Information Base (MIB) using SMIV2)  
[RFC1742](#) (AppleTalk Management Information Base II)  
[RFC1747](#) (Definitions of Managed Objects for SNA Data Link Control (SDLC) using SMIV2)  
[RFC1749](#) (IEEE 802.5 Station Source Routing MIB using SMIV2)  
[RFC1755](#) (ATM Signaling Support for IP over ATM)  
[RFC1763](#) (The PPP Banyan Vines Control Protocol (BVCP))  
[RFC1764](#) (The PPP XNS IDP Control Protocol (XNSCP))  
[RFC1828](#) (IP Authentication using Keyed MD5)  
[RFC1829](#) (The ESP DES-CBC Transform)  
[RFC1835](#) (Architecture of the WHOIS++ service)  
[RFC1848](#) (MIME Object Security Services)  
[RFC1913](#) (Architecture of the Whois++ Index Service)  
[RFC1914](#) (How to Interact with a Whois++ Mesh)

#### **4. Discussion**

As one peruses this list one sees several classes of documents:



- o Multiprotocol functions for protocols that are obsolete, such as Appletalk or X.400.
- o Protocols that were defined but not used, such as PEM or Whois++
- o Functions that require at the very least updated applicability statements, such as the ESP DES-CBC transform.

Of the set above it is clear that additional process for the later one is unnecessary, since a document should be written one way or another. It is the first two cases that are more interesting. In either case a judgment is necessary as to whether or not a protocol is both in use and likely to be supported. The parameters of our experiment were sufficiently conservative to avoid cases where protocols were likely to continue to be supported. That is, anyone could remove a document from the list for any reason. In fact, in some cases we may have been too conservative. Thus, It is also worth considering the categories of documents that were removed from the list:

- o specifications known to be in full use that should be considered for advancement
- o specifications that are currently under review within the IETF process
- o Specifications that were previously considered for deprecation and rejected.

The last category is exclusive to telnet options. Arguably such options should be reconsidered for deprecation. Realistically nobody is going to develop a new version of telnet that supports the TACACS option, for instance. Nevertheless, as a first cut we were still left with 61 documents that could be reclassified.

In at least one case discussion of deprecation has spurred work on documents. For instance, there is a CIDR update in progress.

## 5. Next Steps

As we mention in the introduction, the current process requires reconsideration of immature standards, and that this review currently does not occur. This experiment has been an attempt at a procedure that could ease that review. There are several potential next steps, based on these results:

1. Accept the results of this experiment, issue a last call, and deprecate standards that remain on the list past last call. This is an aggressive approach that would preserve the intent of [RFC 2026](#).
2. Do not accept the results of this experiment and update [RFC 2026](#) to indicate a new practice.





3. Revise the procedure based on the results of this experiment, based on feedback from the IESG. This option might take into account the different types of old standards as described above.
4. Do nothing. This would leave the IETF and the IESG practice inconsistent with documented practice.

It should be pointed out that we only looked at proposed standards and only those RFCs with numbers less than 2000. Should either the first or third of the above options be accepted, draft standards and those older than several years should be considered.

Finally, should NEWTRK deliver a new document classification system, these documents may provide a basis for one or more new categories of that.

## **6. Security Considerations**

Documents that have security problems may require special attention and individual documents to indicate what concerns exist, and when or in what ways an implementation can be deployed to alleviate concerns.

## **7. Acknowledgments**

This experiment would have been completely useless without participation of the members of the old-standards mailing list. Most notably, Pekka Savalo, Bob Braden, and John Klensin were very active contributors to the discussions.

## **8. Normative References**

- [1] Bradner, S., "The Internet Standards Process -- Revision 3", [BCP 9](#), [RFC 2026](#), October 1996.

## Authors' Addresses

Eliot Lear  
Cisco Systems GmbH  
Glatt-com  
Glattzentrum, ZH CH-8301  
Switzerland

Phone: +41 1 878 7525  
Email: [lear@cisco.com](mailto:lear@cisco.com)



Harald Tveit Alvestrand  
Cisco Systems  
Weidemanns vei 27  
Trondheim 7043  
NO

Email: harald@alvestrand.no

## **Appendix A. Input RFCs**

[RFC0698](#) (Telnet extended ASCII option)  
[RFC0726](#) (Remote Controlled Transmission and Echoing Telnet option)  
[RFC0727](#) (Telnet logout option)  
[RFC0735](#) (Revised Telnet byte macro option)  
[RFC0736](#) (Telnet SUPDUP option)  
[RFC0749](#) (Telnet SUPDUP-Output option)  
[RFC0779](#) (Telnet send-location option)  
[RFC0885](#) (Telnet end of record option)  
[RFC0927](#) (TACACS user identification Telnet option)  
[RFC0933](#) (Output marking Telnet option)  
[RFC0946](#) (Telnet terminal location number option)  
[RFC0977](#) (Network News Transfer Protocol)  
[RFC1041](#) (Telnet 3270 regime option)  
[RFC1043](#) (Telnet Data Entry Terminal option: DODIIS implementation)  
[RFC1053](#) (Telnet X.3 PAD option)  
[RFC1073](#) (Telnet window size option)  
[RFC1079](#) (Telnet terminal speed option)  
[RFC1091](#) (Telnet terminal-type option)  
[RFC1096](#) (Telnet X display location option)  
[RFC1144](#) (Compressing TCP/IP headers for low-speed serial links)  
[RFC1195](#) (Use of OSI IS-IS for routing in TCP/IP and dual)  
[RFC1234](#) (Tunneling IPX traffic through IP networks)  
[RFC1239](#) (Reassignment of experimental MIBs to standard MIBs)  
[RFC1256](#) (ICMP Router Discovery Messages)  
[RFC1269](#) (Definitions of Managed Objects for the Border Gateway Protocol: Version 3)  
[RFC1274](#) (The COSINE and Internet X.500 Schema)  
[RFC1276](#) (Replication and Distributed Operations extensions to provide an Internet Directory using X.500)  
[RFC1277](#) (Encoding Network Addresses to Support Operation over Non-OSI Lower Layers)  
[RFC1285](#) (FDDI Management Information Base)  
[RFC1314](#) (A File Format for the Exchange of Images in the Internet)  
[RFC1323](#) (TCP Extensions for High Performance)  
[RFC1328](#) (X.400 1988 to 1984 downgrading)  
[RFC1332](#) (The PPP Internet Protocol Control Protocol (IPCP))  
[RFC1370](#) (Applicability Statement for OSPF)



[RFC1372](#) (Telnet Remote Flow Control Option)  
[RFC1377](#) (The PPP OSI Network Layer Control Protocol (OSINLCP))  
[RFC1378](#) (The PPP AppleTalk Control Protocol (ATCP))  
[RFC1381](#) (SNMP MIB Extension for X.25 LAPB)  
[RFC1382](#) (SNMP MIB Extension for the X.25 Packet Layer)  
[RFC1397](#) (Default Route Advertisement In BGP2 and BGP3 Version of The Border Gateway Protocol)  
[RFC1413](#) (Identification Protocol)  
[RFC1414](#) (Identification MIB)  
[RFC1415](#) (FTP-FTAM Gateway Specification)  
[RFC1418](#) (SNMP over OSI)  
[RFC1419](#) (SNMP over AppleTalk)  
[RFC1420](#) (SNMP over IPX)  
[RFC1421](#) (Privacy Enhancement for Internet Electronic Mail: Part I: Message Encryption and Authentication Procedures)  
[RFC1422](#) (Privacy Enhancement for Internet Electronic Mail: Part II: Certificate-Based Key Management)  
[RFC1423](#) (Privacy Enhancement for Internet Electronic Mail: Part III: Algorithms, Modes, and Identifiers)  
[RFC1424](#) (Privacy Enhancement for Internet Electronic Mail: Part IV: Key Certification and Related Services)  
[RFC1461](#) (SNMP MIB extension for Multiprotocol Interconnect over X.25)  
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[RFC1479](#) (Inter-Domain Policy Routing Protocol Specification: Version 1)  
[RFC1494](#) (Equivalences between 1988 X.400 and [RFC-822](#) Message Bodies)  
[RFC1496](#) (Rules for downgrading messages from X.400/88 to X.400/84)  
[RFC1502](#) (X.400 Use of Extended Character Sets)  
[RFC1510](#) (The Kerberos Network Authentication Service (V5))  
[RFC1512](#) (FDDI Management Information Base)  
[RFC1513](#) (Token Ring Extensions to the Remote Network Monitoring MIB)  
[RFC1517](#) (Applicability Statement for the Implementation of Classless Inter-Domain Routing (CIDR))  
[RFC1518](#) (An Architecture for IP Address Allocation with CIDR)



[RFC1519](#) (Classless Inter-Domain Routing (CIDR): an Address Assignment and Aggregation Strategy)

[RFC1525](#) (Definitions of Managed Objects for Source Routing Bridges)

[RFC1552](#) (The PPP Internetworking Packet Exchange Control Protocol)

[RFC1553](#) (Compressing IPX Headers Over WAN Media (CIPX))

[RFC1570](#) (PPP LCP Extensions)

[RFC1572](#) (Telnet Environment Option)

[RFC1582](#) (Extensions to RIP to Support Demand Circuits)

[RFC1584](#) (Multicast Extensions to OSPF)

[RFC1598](#) (PPP in X.25)

[RFC1618](#) (PPP over ISDN)

[RFC1628](#) (UPS Management Information Base)

[RFC1648](#) (Postmaster Convention for X.400 Operations)

[RFC1663](#) (PPP Reliable Transmission)

[RFC1666](#) (Definitions of Managed Objects for SNA NAUs using SMIPv2)

[RFC1692](#) (Transport Multiplexing Protocol (TMux))

[RFC1696](#) (Modem Management Information Base (MIB) using SMIPv2)

[RFC1697](#) (Relational Database Management System (RDBMS) Management)

[RFC1731](#) (IMAP4 Authentication Mechanisms)

[RFC1734](#) (POP3 AUTHentication command)

[RFC1738](#) (Uniform Resource Locators (URL))

[RFC1740](#) (MIME Encapsulation of Macintosh Files - MacMIME)

[RFC1742](#) (AppleTalk Management Information Base II)

[RFC1747](#) (Definitions of Managed Objects for SNA Data Link Control)

[RFC1749](#) (IEEE 802.5 Station Source Routing MIB using SMIPv2)

[RFC1752](#) (The Recommendation for the IP Next Generation Protocol)

[RFC1755](#) (ATM Signaling Support for IP over ATM)

[RFC1763](#) (The PPP Banyan Vines Control Protocol (BVCP))

[RFC1764](#) (The PPP XNS IDP Control Protocol (XNSCP))

[RFC1767](#) (MIME Encapsulation of EDI Objects)

[RFC1793](#) (Extending OSPF to Support Demand Circuits)

[RFC1808](#) (Relative Uniform Resource Locators)

[RFC1812](#) (Requirements for IP Version 4 Routers)

[RFC1828](#) (IP Authentication using Keyed MD5)

[RFC1829](#) (The ESP DES-CBC Transform)

[RFC1831](#) (RPC: Remote Procedure Call Protocol Specification Version 2)

[RFC1833](#) (Binding Protocols for ONC RPC Version 2)

[RFC1835](#) (Architecture of the WHOIS++ service)

[RFC1847](#) (Security Multiparts for MIME: Multipart/Signed and Multipart/Encrypted)

[RFC1848](#) (MIME Object Security Services)

[RFC1913](#) (Architecture of the Whois++ Index Service)

[RFC1914](#) (How to Interact with a Whois++ Mesh)

[RFC1928](#) (SOCKS Protocol Version 5)





[RFC1929](#) (Username/Password Authentication for SOCKS V5)  
[RFC1961](#) (GSS-API Authentication Method for SOCKS Version 5)  
[RFC1962](#) (The PPP Compression Control Protocol (CCP))  
[RFC1964](#) (The Kerberos Version 5 GSS-API Mechanism)  
[RFC1968](#) (The PPP Encryption Control Protocol (ECP))  
[RFC1973](#) (PPP in Frame Relay)  
[RFC1982](#) (Serial Number Arithmetic)  
[RFC1985](#) (SMTP Service Extension for Remote Message Queue Starting)  
[RFC1995](#) (Incremental Zone Transfer in DNS)  
[RFC1996](#) (A Mechanism for Prompt Notification of Zone Changes (DNS NOTIFY))  
[RFC1997](#) (BGP Communities Attribute)



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