

RFC 7042bis

IANA Considerations and IETF Protocol and
Documentation Usage for IEEE 802 Parameters

draft-eastlake-rfc7042bis-08.txt

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- This draft is the next in a series of Best Current Practice RFCs that try to gather in one place information on:
 - The use of IEEE 802 parameters in IETF protocols.
 - Information on the IANA Considerations for IEEE 802 parameters that are
 - Under the IANA OUI or
 - From other blocks allocated to IANA by IEEE.
 - Other closely related information.

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- This document includes and updates specification of the following:
 - Assignment under the IANA OUI (Organization Unique Identifier) 00-00-5E of
 - 48 and 64-bit MAC address addresses
 - Unicast: 00-00-5E-xx-xx-xx, 00-00-5E-xx-xx-xx-xx-xx
 - Multicast: 01-00-5E-xx-xx-xx, 01-00-5E-xx-xx-xx-xx-xx
 - (64-bit MAC addresses are used by IEEE Std. 802.15.4 (ZigBee), IEEE Std. 1394 (FireWire/i.Link), and Infiniband)
 - (IEEE can also assign longer prefixes for those needing fewer MACs.)
 - IANA assignment of OUI Extended Ethertypes 88-B7-00-00-5E-xx-xx
 - Address Family Numbers (AFNs) and DNS RR Types for MAC addresses.

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- And it adds specification of CBOR tags for MAC addresses and Ethernet protocol identifiers.
- It adds information as follows:
 - The IEEE 802 Structured Local Address Plan (SLAP) and Company IDs (CIDs)
 - Pointers to specification of IANA Considerations for
 - The blocks of IEEE 802.1Q Continuity Fault Management (CFM) code points allocated to IANA (RFC 7319)
 - The registry set up for “vendor specific” Link Layer Discovery Protocol codepoint under the IANA OUI (RFC 8520, draft-acee-idr-lldp-peer-discovery)
 - IESG Statement on requesting Ethertypes from the IEEE Registration Authority

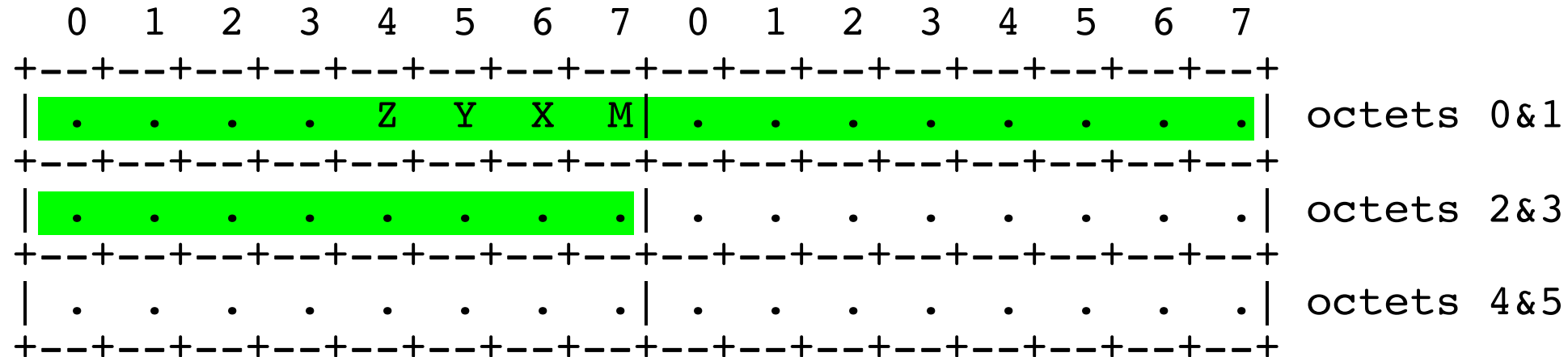
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- Because it can make sense to allocate large blocks of MAC addresses to a single use (1/2 of IANA multicast MACs allocated to IPv4 multicast and 1/8 to MPLS multicast), there is a special assignment procedure. “Small-Medium” blocks are decided by Expert. “Large” blocks can be refused by expert or can be approved (or punted) by Expert with IESG making final decision.

Type	Small-Medium Block	Large Block
48-bit MAC	1 to 2**16	2**17 to 2**24
64-bit MAC	1 to 2**28	2**29 to 2**40

IEEE 802 Structured Local Address Plan (SLAP)

- 48-bit MAC Address



- M = Multicast/Broadcast bit
- X = Former "Local" bit

IEEE 802 Structured Local Address Plan (SLAP)

- SLAP optionally divides the former Local MAC address space into four quadrants as follows:

Z	Y	X	SLAP Use
0	0	1	Administratively Assigned — Equivalent to former Local
0	1	1	Extended Local — Assigned to CID holder
1	0	1	Reserved
1	1	1	Standard Assigned — Assigned via a local protocol (IEEE 802.1CQ, RFCs 8947 & 8948)

- Companies indicated by 24-bit identifier with the M bit zero
 - OUI (Organizational Unique Identifier) X = 0, Z & Y are part of the Identifier
 - Includes 2^{24} unicast and 2^{24} multicast MAC addresses
 - CID (Company ID) X = 1, Y = 1, Z = 0, include MAC addresses if SLAP is in use on local network
 - Like IETF deprecated “CF” series (RFC 2153) of “CID”s with M=X=Y=Z=1 for use in PPP.
- IPv6 multicast uses MACs with top byte 0x33 (Administratively Assigned) Z=Y=0, X=M=1.

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- Includes the specification of reserved documentation/example codepoints. (RFC 2606, RFC 5737)
- Assorted clarifications and minor changes.

RFC 7042bis — Next Step

- I suggest either
 - Acceptance and processing by INTAREA or
 - AD sponsorship.

END

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