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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | Proposal for managing IE IDs | |
| Date Submitted | 15 May 2013 | |
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| Re: | Propasal for response to ETSI TC ERM request for change regarding the management of the IE IDs. | |
| Abstract | : In March 2013 the SCMaint chair requested preparation and presentation of a proposed approach to address allocation of the IE ID space to allow for IEEE management of the ID assignments for external organizations. This contains a proposed approach.  Proposes minimal changes to manage the ID space currently defined as unmanaged in 802.15.4-2012, which provides compatibilty with current standard and accomodation of curerently deployed standard compliant devices. | |
| Purpose | Resolve comments so we can finish the standard without breaking anything. | |
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Proposed for 802.15.4-2013:

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| --- | --- | --- |
| ID Range | 802.15.4 Use | Notes |
| 0x00-0x19 | External Protocol, Managed by IEEE |  |
| 0x1a-0x26 | Defined by 802.15.4 |  |
| 0x21-0x3f | Reserved for 802.15.4 future use |  |
| 040-0x47 | External Protocol, Managed by IEEE | Request to TIA/ETSI |
| 0x48-0x7d | Reserved for 802.15.4 future use |  |
| Q0x7e | List Termination |  |
| 0x80 | Vendor Specific 2 |  |
| 0x81 | Vendor Specific 1 |  |
| 0x82 | External Protocol Specific |  |
| 0x83-0xff | Reserved |  |

Vendor Specific IE 1:

|  |  |  |
| --- | --- | --- |
| Octets: 2 | 3 | Variable |
| IE Descriptor | Vendor ID / OUI | Vendor Specific Content |

Vendor Specific IE 2 (based on TR-51)

|  |  |  |  |
| --- | --- | --- | --- |
| Octets: 2 |  | 3 | Variable |
| IE Descriptor | VS Control | Vendor ID / OUI | Vendor Specific Content |

Vendor Specific Control Field:

|  |  |
| --- | --- |
| Bits |  |
| 0:3 | Reserved |
| 4:7 | Precedence: Specifies how to order IEs in the IE list. If set to 15 then the IE will be placed after all other IEs in the IE list. If set to zero will be placed before defined IEs and all other VSIEs that have a precedence value greater than 0. VSIEs of the same precedence value may be placed in any order by the implementation. |

External Protocol Specific IE:

|  |  |  |
| --- | --- | --- |
| Octets: 2 | 2 | Variable |
| IE Descriptor | Protocol Identifier (Ethertype) | Protocol Specific Content |

|  |  |
| --- | --- |
| ID Range | Use |
| 0x0 | ESDU |
| 0x1 | MLME (Nested) |
| 0x2-0x9 | External Protocol (Managed by IEEE)  2 responses that use IDS in this range. |
| 0xa - 0xd | Reserved |
| 0xe | Vendor Specific Payload IE |
| 0xf | List termination |

Background: The 802.15.4 IE Story, complete as of 802.15.4k-2013 (as submitted to RevCom 4/13). NOTE: Current amendments underway define additional IEs which would be allocated from the “reserved” space.

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| Payload IE group ID allocations | | |
| Group ID value | Description | |
| 0x0 | Encapsulated Service Data Unit (ESDU) as described in 5.2.4.4 | |
| 0x1 | MLME (Nested) | |
| 0x2 | Unmanaged |  |
| TBD | Cisco (requested) 1 group ID |
| TBD | Wi-SUN (requested) 1 group ID |
| …0x9 |  |
| 0xa–0xe | Reserved | |
| 0xf | List termination | |

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| --- | --- | --- | --- | --- | --- |
| 802.15.4 IE ID Allocations | | | | | |
| Key: | | |  |  | | --- | --- | | Deyfined in 802.15.4e | Defined in 802.15.4j | | Defined in 802.15.4g | Defined in 802.15.4k | | Unmanaged | | | | | |
| Header IEs | | |  | MLME IEs | |
| ID | Use | |  | Sub-ID | Use |
| 0x00 | Unmanaged | |  | 0x00 | Reserved |
| … |  | … |
| 0x19 |  | 0x19 |
| 0x1a | LE CSL | |  | 0x1a | TSCH Synchronization |
| 0x1b | LE RIT | |  | 0x1b | TSCH Slotframe |
| 0x1c | DSME PAN Descriptor | |  | 0x1c | TSCH Timeslot |
| Q | RZ Time | |  | 0x1d | Hopping Timing |
| 0x1e | ACK/NACK Time Correction | |  | 0x1e | EB Filter |
| 0x1f | GACK | |  | 0x1f | MAC Metrics 1 |
| 0x20 | Low Latency Network info | |  | 0x20 | MAC Metrics 2 |
| 0x21 | Extended DSME PAN Descriptor | |  | 0x21 | Coexistence Specification |
| 0x22 | MPDU Frag Sequence Context | |  | 0x22 | SUN PHY Capabilities |
| 0x23 | Simplified SF Spec | |  | 0x23 | MR-FSK Gen PHY |
| 0x24 | implified GTS Spec | |  | 0x24 | IE that shall not be named |
| 0x25 | LECIM Capabilities | |  | 0x25 | PHY Parameter Change |
| 0x26 | TRLE Descriptor | |  | 0x26 | O-QPSK PHY Specific |
| 0x27 | Reserved | |  | 0x27 | PCA Info |
| … |  | |  | 0x28 | LECIM DSSS Op Mode Desc. |
|  |  | |  | 0x29 | LECIM FSK Op Mode Desc. |
|  |  | |  | 0x2a |  |
|  |  | |  | … | Reserved |
| … |  | |  | 0x3f |  |
|  |  | |  | 0x40 | Unmanaged |
| 0x7d | Reserved | |  | … |  |
| 0x7e | List Term 1 | |  | … |  |
| 0x7f | List Term 2 | |  | 0x7f |  |
| 0x80 | Reserved | |  |  |  |
| … |  |  |  |
| 0xff |  |  |  |