

Use of the IEEE Assigned Ethertype with IEEE Std 802.3 Local and Metropolitan Area Networks

An Ethertype provides context (protocol identification) for interpretation of the data that follows within a frame. Well known protocols already have an assigned Ethertype.

The IEEE 802.3 standard defines a Length/Type field; this field has also been known as the Type field in the pre-standard IEEE 802.3 Ethernet specification and the Length field in early 802.3 standards. In all specifications, the type values contained within this field are simply known as Ethernets.

This field, as described in IEEE Std 802.3 Clause 3.2.6, is two-octets long and takes one of two meanings depending on its numeric value.

For numeric evaluation, the first octet is the most significant octet of this field. When the values of this field is greater than or equal to 1536 decimal (equal to 0600hexadecimal) the Length/Type field indicates the nature of the MAC client protocol (type interpretation). The length and type interpretations of this field are mutually exclusive.

Ethertype assignments are obtained from the IEEE Registration Authority. These assignments do not interfere with previous Ethertype assignments made by the registration authority.

Over the years, Ethertype as a protocol identifier has been adopted by standards other than IEEE Std 802.3, including other media access control methods. Some uses include encapsulation of Ethertype encoding within an IEEE Std 802.2 specified SNAP SAP, or encapsulation of Ethertype encoding within a different Ethertype contained within an Ethernet Length/Type field.

IEEE Std 802.1H-1995 specifies some uses of the Ethertype with other media access methods.

The Ethertype uses a very limited numeric space and therefore new assignments will be limited. It is incumbent upon your company administration to ensure that requests for Ethertype assignments be very limited and only on an as needed basis. Requests for multiple

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Ethertype assignments by the same applicant will not be granted unless the applicant certifies that they are for unrelated purposes. In particular, only one new Ethertype is necessary to limit reception of a new protocol or protocol family to the intended class of devices. New protocols and protocol families should have provision for a sub-type field within the new specification to handle different aspects of the application (e.g., control vs. data) and future upgrades.

The following should be considered before requesting a new Ethertype assignment:

- Use of an existing protocol with its currently allocated Ethertype.
- Use of further, as yet unexhausted, protocol identification capabilities (sub- types) within an existing protocol or protocol family.
- Specification of additional protocol identification types within a new protocol to allow similar or related uses without the need for more than one Ethertype Field assignment.

Each request for an Ethertype assignment sent to the IEEE Registration Authority will be forwarded to the IEEE RAC for review and approval upon receiving all information necessary to process the application. This review process will be completed in less than 90 days.

All information provided by the applicant will be kept confidential by the IEEE RA until the request is approved.