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**IANA Guidance for Managing the ULE Registry**  
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Abstract

This document proposes an update to [RFC 4326](#) to clarify and update the allocation rules for the Unidirectional Lightweight Encapsulation (ULE) next header registry. This registry is used by ULE and Generic Stream Encapsulation (GSE) to record the codepoints of extension headers and protocols supported by these encapsulation protocols.

Status of this Memo

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## **1. Introduction**

The Unidirectional Lightweight Encapsulation (ULE) [[RFC4326](#)] specifies an encapsulation for links that employ the MPEG-2 Transport Stream, with support over a wide variety of physical-layer bearers [[RFC4259](#)]. The encapsulation header includes a Type field that identifies payload types and extension headers (e.g. [[RFC5163](#)]). The ULE specification requested IANA to maintain the ULE next header registries to record the allocation of the values used to construct this Type field.

The Digital Video Broadcast (DVB) Project has published an encapsulation for second-generation DVB physical layers. This specifies the Generic Stream Encapsulation [[GSE](#)]. This encapsulation shares many of the network properties of ULE and uses a common format for the Type field [[RFC5163](#)]. The ULE Next Header registries are therefore also applicable to this encapsulation.

### **1.1. The ULE Next Header Registries**

The Mandatory Extension Headers registry allocates values in the range 0-255. These values are used to identify mandatory extension headers. The registered value corresponds to the 16-bit Type value for the mandatory extension header or the specified protocol.

The Optional Extension Headers registry allocates values in the range 256-512. These values are used to identify optional extension headers. The registered value corresponds to the 16-bit Type value that would be used for an optional extension header with a length (H-LEN) of 1.

## **2. Terminology**

This document assumes familiarity with the terminology of ULE [[RFC4326](#)] and [[RFC5163](#)].

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

## **3. Updated IANA guidance on allocation in the ULE Next Header Registry**

The rules for allocation are defined in [section 11 of RFC 4326](#). Requirements for the request of a registry entry are provided in [RFC 4326](#). This document updates these rules in the following way:



Allocations in the ULE Next Header Registry are to be assigned by IANA using the "Expert Review" policy defined in [[RFC5226](#)]. Applications for registration are expected to include a reference to a published specification of the extension in a standards document (e.g. such a reference to an RFC). The requirements for specification of the two types of extension header are in [section 11 of RFC 4326](#).

XXX An alternate approach to writing this section could be to include a complete replacement text, based on [RFC 4326](#) IANA considerations.  
XXX

### **[3.1.](#) Reservation of port values**

This document reserves the range decimal 144-159 (0x80-0x8F). These reserved values are presently not available for general assignment, and will not be allocated until the registry is exhausted.

## **[4.](#) Update to registry information**

This section requests IANA to record additional explanatory note in the registry:

"The Mandatory Extension Headers registry allocates values in the range 0-255. These values are used to identify mandatory extension headers. The registered value corresponds to the 16-bit Type value for the mandatory extension header or the specified protocol.

The Optional Extension Headers registry allocates values in the range 256-512. These values are used to identify optional extension headers. The registered value corresponds to the 16-bit Type value that would be used for an optional extension header with a length (H-LEN) of 1."

## **[5.](#) Security Considerations**

This document does not present new security considerations.

## **[6.](#) IANA Considerations**

[Section 3](#) specifies updated IANA allocation rules

[Section 4](#) requests IANA to update the registry information.



## **7. Acknowledgments**

The author acknowledges feedback from IANA, Alexander Adolf and Hans-Peter Lexow on usage of this registry.

## **8. Revision notes**

RFC-Editor: Please remove this section prior to publication

Draft 00

- o This contains the first draft for comment.

## **9. References**

### **9.1. Normative References**

- [GSE] European Telecommunication Standards, Institute (ETSI), "Digital Video Broadcasting (DVB); Generic Stream Encapsulation (GSE) Protocol", 2007.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [RFC4326] Fairhurst, G. and B. Collini-Nocker, "Unidirectional Lightweight Encapsulation (ULE) for Transmission of IP Datagrams over an MPEG-2 Transport Stream (TS)", [RFC 4326](#), December 2005.
- [RFC5163] Fairhurst, G. and B. Collini-Nocker, "Extension Formats for Unidirectional Lightweight Encapsulation (ULE) and the Generic Stream Encapsulation (GSE)", [RFC 5163](#), April 2008.
- [RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 5226](#), May 2008.

### **9.2. Informative References**

- [RFC4259] Montpetit, M., Fairhurst, G., Clausen, H., Collini-Nocker, B., and H. Linder, "A Framework for Transmission of IP Datagrams over MPEG-2 Networks", [RFC 4259](#), November 2005.





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