23.6.6 UNT for notification of firmware updates

Receivers can use the OUI_hash field to quickly determine possible UNT sections intended for them. However receivers shall not rely solely on the OUI_hash field, since other manufacturers may have the same OUI_hash but a different OUI.

Receivers shall check that the full OUI within any UNT section matches the manufacturer OUI before processing the UNT section.

Receivers shall not assume that all sections of a UNT ~~sub-table will~~ have the same OUI. A UNT ~~sub-table~~ may contain sections from multiple different OUI but with the same OUI_hash. A UNT may also contain multiple UNT sub-tables for multiple OUI and OUI_hash.

UNT are MPEG private sections including a version number and hence the maximum length is 4 096 bytes. The stream_type 0x05 shall be used in the ES_info_loop of the PMT for UNT sections.

Target receivers may be further identified using the Compatibility Descriptor and may be identified by ~~either~~ one or more~~Hardware (~~ system hardware descriptor~~)~~ and/or ~~by Software~~one or more ~~(~~system software descriptor~~) or both~~. This is carried in the Update Notification Table as defined in section 9.4.2.2 of ~~DVB Bluebook A077~~TS 102 006 ~~TS 102 006~~ [17].

~~The action_type field of the UNT sections shall be set to 0x01.The OUI_hash field of the UNT sections shall be set to the manufacturers OUI_hash, which is formed by XORing all three bytes of the manufacturer's OUI together to form a single byte value (OUI_hash = OUI[23..16]^OUI[15..8]^OUI[7..0]).~~

~~The OUI field of the UNT sections shall be set to the OUI of the manufacturer of the receiver for which the UNT section is intended.~~

~~In order to indicate a notification of a firmware update a ssu_uri descriptor shall be present in either the common or operational loops of a UNT section.~~

~~A ssu_uri descriptor with a descriptor_length field set to 0x02 shall indicate a download is available from the receiver's (pre-stored) Internet portal location. A URI can be specified for downloads available from alternative Internet locations.~~

~~Manufacturers are strongly recommended to use a sufficiently random source to determine the holdoff time if the signalled max_holdoff_field is non-zero.~~

23.6.6.1 UK profiling of SSU UNT

The D-Book profiles the use of SSU UNT in order to keep the UNT sizes small and to simplify the operation of the UNT service.

The action_type field of the UNT sections shall be set to 0x01.

The OUI_hash field of the UNT sections shall be set to the manufacturer's OUI_hash, which is formed by XORing all three bytes of the manufacturer's OUI together to form a single byte value (OUI_hash = UI[23..16]^OUI[15..8]^OUI[7..0]).

The OUI field of the UNT sections shall be set to the OUI of the manufacturer of the receiver for which the UNT section is targeted.

UNT sub-table shall only comprise of a single section. Therefore, section_number and last_section_number shall be set to zero for all UNT sections. Consequently, the processing_order field shall be set to 0xFF in all UNT sections.

Manufacturers are recommended to keep their UNT sections as small as possible.

23.6.6.1.1 UK profiling of SSU UNT Compatibility Descriptor

The descriptorType field in the compatibility_descriptor field of the UNT has been restricted so only the descriptorType values specified in Table 23-12 are permitted.

descriptorType	Description
0x01	system hardware descriptor
0x02	system software descriptor

Table 23-12. descriptorTypes allowed within UNT compatibility_descriptor by UK profile

Therefore, user defined or other ISO13818-6 [39] compatibility descriptorType values shall not be present.

The use of sub-descriptors is allowed, however manufacturers are recommended to minimize their use and keep them as small as possible.

23.6.6.1.2 UK profiling of UNT descriptors

The use of descriptors within the UNT has been restricted to those defined in Table 23-13.

Descriptor	Tag value	Descriptor loops in which descriptor is allowed	Notes
message_descriptor	0x04	Common and/or operational	Optional
enhanced_message_descriptor	0x0C	Common and/or operational	Optional
ssu_uri_descriptor	0x0D	Common and/or operational	Mandatory (Annex C.3 of TS 102 006 [17])

Table 23-13. SSU UNT descriptors allowed by UK profile

Other descriptors shall not be present. Consequently, no descriptors are permitted in the target descriptor loop and therefore the target_descriptor_loop_length shall be set to zero in all UNT sections.

23.6.6.1.3 UK profiling of message and enhanced message descriptors

The use of the UNT message_descriptor and enhanced_message_descriptor is optional.

Manufacturers are recommended to use them sparingly due to their size.

Manufacturers are also recommended to pre-store messages in their receivers, to minimize the need to carry them in the UNT using a message_descriptor or an enhanced message descriptor.

Additionally, the UK profile mandates two restrictions:

- The ISO_639_language_code shall be set to “eng” for both descriptors.
- The total length of all strings in all message and enhanced message descriptors shall not exceed 200 bytes in any UNT sub-table.

23.6.6.1.4 UK profiling of SSU URI descriptor

In order to indicate a notification of a firmware update, an ssu_uri descriptor shall be present in either the common or operational loops of a UNT section.

An ssu_uri descriptor with a descriptor_length field set to 0x02 shall indicate a download is available from the receiver's (pre-stored) Internet portal location. A URI can be specified for downloads available from alternative Internet locations. Manufacturers are recommended to only signal the optional URI when absolutely necessary.

Manufacturers should take note of the security warning of this mechanism as detailed in TS 102 006 [17].