Paper for Consideration by the Transfer Standard Maintenance and Applications Development Working Group (TSMAD)

Clarification Required For Use of directional Lights and Sector Attributes

Submitted by:	Canada
Executive Summary:	Within the UOC3.1 there exists some circular logic associated with the coding of a directional sector light. For any Sector light, SECTR1 &2 are mandatory, yet within the description of the directional light there is a provision of encoding without using the SECTR1 &2 attributes
Related Documents:	UOC3.1, S58
Related Projects:	

Introduction / Background

Clarification is required on the coding of Directional lights within UOC3.1, specifically section 12.8.6 and it's sub sections related to sector lights and lights not visible all around.

Within the section "12.8.6.1 Sector lights" it states the following:
"Limits of sectors must be encoded using attributes SECTR1 and SECTR2."

Hence, attributes SECTR1 and SECTR2 are considered mandatory for all sector lights.

Yet when coding a Directional light it states within Section 12.8.6.6:
"The mandatory attribute ORIENT must only be encoded to indicate the orientation, measured from seaward, of the leading line of the directional light when the attributes SECTR1 and SECTR2 are not populated, and there is no **RECTRC** or **NAVLNE** object associated with the directional light. Where the **LIGHTS** has attributes SECTR1 and SECTR2 populated, and/or there is an associated **RECTRC** and/or **NAVLNE** encoded, ORIENT for the **LIGHTS** must be populated with and empty (null) value."

This implies that SECTR1 and SECTR2 are not mandatory for directional lights and that an optional encoding is possible with the use of the ORIENT attribute.

Yet if SECTR1 and SECTR2 are mandatory for all sector lights including directional lights, then ORIENT would never be populated.

This leads to confusion as to whether the SECTR1 and SECTR2 attributes are mandatory for all types of sector lights or if they are mandatory for all sector lights excluding directional lights.

CHS has been coding SECTR1 and SECTR2 attributes for bearing lights (CATLIT=18). These are referenced in section 12.8.6.1, however it is not clear that the SECTR1 and SECTR2 attribution is mandatory for a bearing light, and the Mandatory attribution check in S58 only indicates a mandatory nature for Directional and Moire lights. This could lead to missing mandatory attribution as it is not reported in the mandatory attribute check for sector lights.

Analysis/Discussion/Conclusions
Test data was put together to determine if the S58 tests matched the interpretation of the UOC as listed herein. The results of those tests were as follows:

Test 1- coding of a bearing light with and without the SECTR1 and SECTR2 attributes

This test never reported errors for missing mandatory attribution

Test 2 – coding of a directional light using the Orient attribute instead of SECTR1 and SECTR2 as indicated in section 12.8.6.6, which states "The mandatory attribute ORIENT must only be encoded to indicate the orientation, measured from seaward, of the leading line of the directional light when the attributes SECTR1 and SECTR2 are not populated, and there is no **RECTRC** or **NAVLNE** object associated with the directional light"

Directional Light (CATLIT=1) + ORIENT + NO (SECTR1, SECTR2)

Warning Level: WARNING
Message: Check for lights having ORIENT encoded with an explicit value, that :
 - SECTR1 and SECTR2 are not populated, or
 - It is not aggregated to a RECTRC or a NAVLNE in a collection object C_AGGR.
Reference: S-58 Test 1790. Conformity to Encoding Bulletin EB9
Number of Objects: 1
 (Select All)

CA 0000028690 50000 LIGHTS

This test reports a warning though there was no associated RECTRC or NAVLNE object. This is Incorrect reporting of a warning based upon the wording in section 12.8.6.6.

Recommendations

1) It is recommended that the lead for the UOC maintenance clarify what category of lights constitutes a sector light. This will clarify for which light objects SECTR1 and SECTR2 attributes are considered mandatory.

2) It is recommended that the lead for S58 update the corresponding mandatory attribution checks for lights corresponding to the clarification provided by the UOC lead in response to recommendation 1.

3) It is recommended that the lead for the UOC maintenance provide clarification for directional lights. The lead must clarify whether directional lights can "have mandatory SECTR1 and SECTR2 attribution" or "mandatory ORIENT attribution".

4) It is recommended that the lead for S58 update check 1790 based upon the clarification provided by the UOC lead for recommendation 3.

Justification and Impacts
Clarification is required.

Action Required of TSMAD
TSMAD is invited to endorse this proposal