Checking the OpenLCB Function Description Information Standard

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1 Introduction

This note documents the procedure for checking an OpenLCB implementation against the Function Definition Information Standard.

The checks are traceable to specific sections of the Standard.

The checking assumes that the Device Being Checked (DBC) is being exercised by other nodes on the message network, e.g. is responding to enquiries from other parts of the message network.

2 Function Description Information Procedure

This plan assumes that the Datagram Transport Protocol and the Memory Configuration Protocol have been separately checked. It uses those, but does not do any detailed checking of them.

2.1 FDI Memory Present checking

This section checks that the FDI memory defined in the Function Definition Information Standard is present.

The Get Address Space Information Command from the Memory Configuration Protocol is used to validate that space 0xFA is present and read-only.

2.2 Validation checking

This section checks the content of the FDI against the XML Schema defined in Section 5 of the Standard to make sure that it is valid XML.

This check reads the information from the 0xFA memory space until it encounters a null character.

1. If the space is not available, or there are no bytes of content in it, the check fails.
2. If the read sequence terminates early, without ending in a null character, the check fails.

The check then compares the first two lines of the content against the definition in section 5. Any XML Schema version up to and including the present one is permitted.

The check then validates the content against the 1.0 FDI XML Schema which is stored in a local "fdi.xsd" file. (This should pull the CDI from the web) (This has to handle various versions of the schema)

The check then compares the length of the 0xFA memory space as specified by the Memory Configuration Protocol Standard sections 4.15 and 4.16 vs. the actual length of the retrieved FDI. If they do not agree, the check fails.