Car Connectivity Consortium

MirrorLink®

GPS Data Service Test Specification

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VERSION HISTORY

Version	Date	Comment
1.1	31 March 2012	Approved Version
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LEGAL NOTICE

TABLE OF CONTENTS

TERMS AND ABBREVIATIONS

GPS	Global Positioning System

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1 ABOUT

This document specifies test specification for MirrorLink GPS Data Service [1].

The specification lists a series of requirements, either explicitly or within the text, which are mandatory elements for a compliant solutions. Recommendations are given, to ensure optimal usage and to provide suitable performance. All recommendations are optional.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are following the notation as described in RFC 2119 [2].

1. MUST: This word, or the terms "REQUIRED" or "SHALL", mean that the definition is an absolute requirement of the specification.
2. MUST NOT: This phrase, or the phrase "SHALL NOT", mean that the definition is an absolute prohibition of the specification.
3. SHOULD: This word, or the adjective "RECOMMENDED", mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
4. SHOULD NOT: This phrase, or the phrase "NOT RECOMMENDED" mean that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
5. MAY: This word, or the adjective "OPTIONAL", means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option MUST be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option MUST be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides.)

2 GENERAL TEST REQUIREMENTS

For the server tested, there SHOULD be a mechanism to emulate GPS to provide valid data to client.

For the client testing, there SHOULD be a mechanism like UI to allow triggering each test case.

2.1 Execution of Test Cases

Every test case is uniquely identified by an identifier.

- A MirrorLink Server MUST pass all test cases, starting with SC, if it implements a GPS Source endpoint.
- A MirrorLink Server MUST pass all test cases, starting with SK, if it implements a GPS Sink endpoint
- A MirrorLink Client MUST pass all test cases, starting with SC, if it implements a GPS Source endpoint,
- A MirrorLink Client MUST pass all test cases, starting with SK, if it implements a GPS Sink endpoint

Every test case description includes an entry, whether the test cases is considered mandatory or not.

- Test cases marked as MANDATORY, MUST be executed.
- Test cases marked as CONDITIONAL, MUST be executed if the given condition is met.
- Test cases marked as CONDITIONAL, MUST NOT be executed if the given condition is not met.
- Test cases marked as NONE, MUST NOT be executed

2.2 Test Case Dependencies

A MirrorLink Server and Client, implementing Locate Data Service functionality MUST execute all Common Data Bus and Simple Service Protocol test cases, related to the implemented Data Service functionality, as given below:

- A MirrorLink Server MUST pass all Server related CDB test cases
- A MirrorLink Client MUST pass all Client related CDB test cases
- A MirrorLink Server and Client MUST pass all CDB and SBP Source test cases, if it implements a Data Service Source endpoint
- A MirrorLink Server and Client MUST pass all CDB and SBP Sink test cases, if it implements a Data Service Sink endpoint

3 SINK TEST CASES

3.1 SK/GPS/INIT

Requirement: MANDATORY

Condition: None

3.1.1 Preparation Steps

Step	*Name*	*Description*	*Expected result*
1	*Send CDB Service Request*	Query available services supported by SBP Source that are available for communication/subscription.	*The test passes if* • *CDB Sink Endpoint sends correct service request from CDB Source Endpoint* • *CDB Source Endpoint returns a list of supported services including GPS service*

3.1.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
2	*Start GPS Service Command*	SBP Sink triggers a service that was declared as supported by the SBP Source.	*The test passes if* • SBP Source receives a StartService request for a supported service • *SBP Source responds OK*

3.1.3 Post Steps

None

3.2 SK/GPS/GET_NMEA_DESCRIPTION

Requirement: MANDATORY

Condition: None

3.2.1 Preparation Steps

CL/GPS/INIT succeeded.

3.2.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
3	*GET NMEA_DESCRIPTION*	SBP Sink sends Get command for NMEA_description object	*The test passes if* • SBP Source receives a valid command

			• *SBP Source responds OK with valid NMEA_description object*

3.2.3 Post Steps

None

3.3 SK/GPS/GET_NMEA

Requirement: MANDATORY

Condition: None

3.3.1 Preparation Steps

CL/GPS/GET_NMEA_DESCRIPTION succeeded.

3.3.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
3	*GET NMEA*	SBP Sink sends Get command for NMEA object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds OK with valid NMEA object*

3.3.3 Post Steps

None

3.4 SK/GPS/SUBSCRIBE_NMEA

Requirement: MANDATORY

Condition: None

3.4.1 Preparation Steps

CL/GPS/GET_NMEA_DESCRIPTION succeeded.

3.4.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
3	*Subscribe NMEA*	SBP Sink sends Subscribe command for NMEA object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds OK*
4	*NMEA data notification*	SBP Source sends notification for subscription	*The test passes if* • SBP Source sends valid NMEA data • Sink maintains subscription without problem

3.4.3 Post Steps

None

3.5 SK/GPS/CANCEL_NMEA

Requirement: MANDATORY

Condition: None

3.5.1 Preparation Steps

CL/GPS/SUBSCRIBE_NMEA succeeded.

3.5.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
5	*Cancel Subscription of NMEA*	SBP Sink sends Cancel Subscribe command for NMEA object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds successfully*

3.5.3 Post Steps

None

4 SOURCE TEST CASES

4.1 SC/GPS/INIT

Requirement: MANDATORY

Condition: None

4.1.1 Preparation Steps

Step	*Name*	*Description*	*Expected result*
1	*Respond to CDB Services Request*	Respond with available services supported by SBP Source that are available for communication/subscription.	*The test pass if* • *SBP Source responds with all available services including GPS service*

4.1.2 Objective Step

Step	*Name*	*Description*	*Expected result*
2	*Start GPS Service*	*SBP Source successfully responds to a valid Service Start command*	*The test passes if* • *The service requested is started* • *The SBP Source responds OK to the StartService command*

4.1.3 Post Steps

None

4.2 *SC/GPS/*GET_NMEA_DESCRIPTION

Requirement: MANDATORY

Condition: None

4.2.1 Preparation Steps

SR/GPS/INIT succeeded.

4.2.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
3	*GET NMEA_DESCRIPTION*	SBP Sink sends Get command for NMEA_description object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds OK with valid NMEA_description object*

4.2.3 Post Steps

None

4.3 SC/GPS/GET_NMEA

Requirement: MANDATORY

Condition: None

4.3.1 Preparation Steps

SR/GPS/GET_NMEA_DESCRIPTION succeeded.

4.3.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
3	*GET NMEA*	SBP Sink sends Get command for NMEA object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds OK with valid NMEA object*

4.3.3 Post Steps

None

4.4 SC/GPS/SUBSCRIBE_NMEA

Requirement: MANDATORY

Condition: None

4.4.1 Preparation Steps

SR/GPS/GET_NMEA_DESCRIPTION succeeded.

4.4.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
3	*Subscribe NMEA*	SBP Sink sends Subscribe command for NMEA object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds OK*
4	*NMEA data notification*	SBP Source sends notification for subscription	*The test passes if* • SBP Source sends valid NMEA data with NMEA sentences listed in NMEA_description object • *SBP Source provides data in time; for interval subscription, allow for an extension of +10% (at least 100 ms)*

4.4.3 Post Steps

None

4.5 SC/GPS/CANCEL_NMEA

Requirement: MANDATORY

Condition: None

4.5.1 Preparation Steps

SR/GPS/SUBSCRIBE_NMEA succeeded.

4.5.2 Objective Steps

Step	*Name*	*Description*	*Expected result*
5	*Cancel Subscription of NMEA*	SBP Sink sends Cancel Subscribe command for NMEA object	*The test passes if* • SBP Source receives a valid command • *SBP Source responds successfully with valid error code* • *SBP Source stops sending Response*

4.5.3 Post Steps

None

5 REFERENCES

[1] Car Connectivity Consortium, "MirrorLink 1.1 – GPS Data Service", Version 1.1; CCC-TS-020

[2] IETF, RFC 2119, Keys words for use in RFCs to Indicate Requirement Levels, March 1997. http://www.ietf.org/rfc/rfc2119.txt