GENIVI MapViewer API

Release 3.0.2
Status: Approved

30 June 2014

Accepted for release by:
This document has been accepted for the GENIVI Gemini Release by the Expert Group Location Based Services (EG-LBS).

Abstract:
This document describes the API of the MapViewer Abstract Component.

Keywords:
NavigationAPIs, MapViewer.

SPDX-License-Identifier: CC-BY-SA-4.0

Copyright (C) 2014, BMW Car IT GmbH, Continental Automotive GmbH, Elektrobit Automotive GmbH, Neusoft Technology Solutions GmbH, PCA Peugeot Citroën, TomTom International B.V., XS Embedded GmbH

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

To view a copy of this license, visit
http://creativecommons.org/licenses/by-sa/4.0/
or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.

Table of contents

1 Change History 4
2 Introduction 5
3 Terminology 6
4 Requirements 7
5 Architecture 8
5.1 Interfaces 8
5.2 Interaction with other Components 9
6 API 10
6.1 D-Bus 10
6.2 Git Repository 10
6.3 Naming Convention 10
6.4 Data Types Convention 11
6.5 Errors 12
6.6 Sequence Diagrams 13
6.6.1 navigation application browses map 13
6.6.2 navigation application creates map session 14
6.6.3 navigation application sets center 15
6.6.4 navigation application sets map zoom by delta 16
6.6.5 navigation application shows route 17
6.7 Interfaces 18

© 2014 GENIVI Alliance

1 Change History

Version	Date	Author	Change
0.1	27 Feb 2012	Marco Residori (XS Embedded)	Document Created
0.2	19 Mar 2012	Marco Residori (XS Embedded)	Updated sequence diagrams. Updated *Interfaces* chapter.
0.3	21 Mar 2012	Marco Residori (XS Embedded)	Updated *Interfaces* chapter.
1.0	22 Mar 2012	Marco Residori (XS Embedded)	System Architecture Team (SAT) approval.
2.0 (beta)	07 Jun 2013	Marco Residori (XS Embedded)	Updated API description. API Version 2.0.
2.0	17 Jun 2013	Marco Residori (XS Embedded)	Updated API description. API fixes: GT-2651. API Version 2.0 (*emini-final* tag)
3.0.0	21 Jan 2014	Marco Residori (XS Embedded)	Updated API description. API Version 3.0.0.
3.0.1	22 May 2014	Marco Residori (XS Embedded)	Updated copyright notes.
3.0.2	30 June 2014	Marco Residori (XS Embedded)	Updated contributors list.

2 Introduction

This document describes the MapViewer API.

3 Terminology

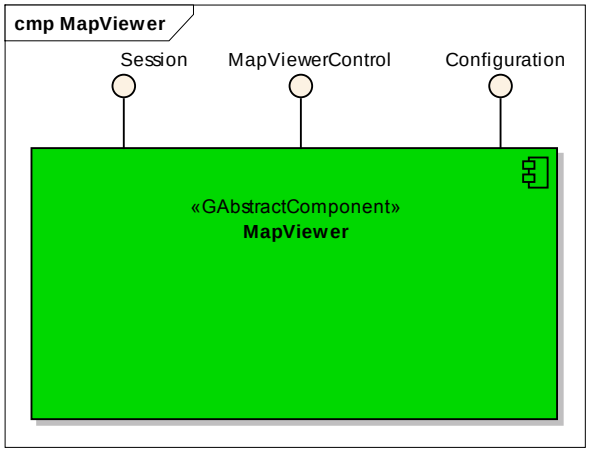
Term	*Description*
TargetPoint	Point the camera looks at. If the map viewer is set to follow the car position, it coincides with the vehicle position.

4 Requirements

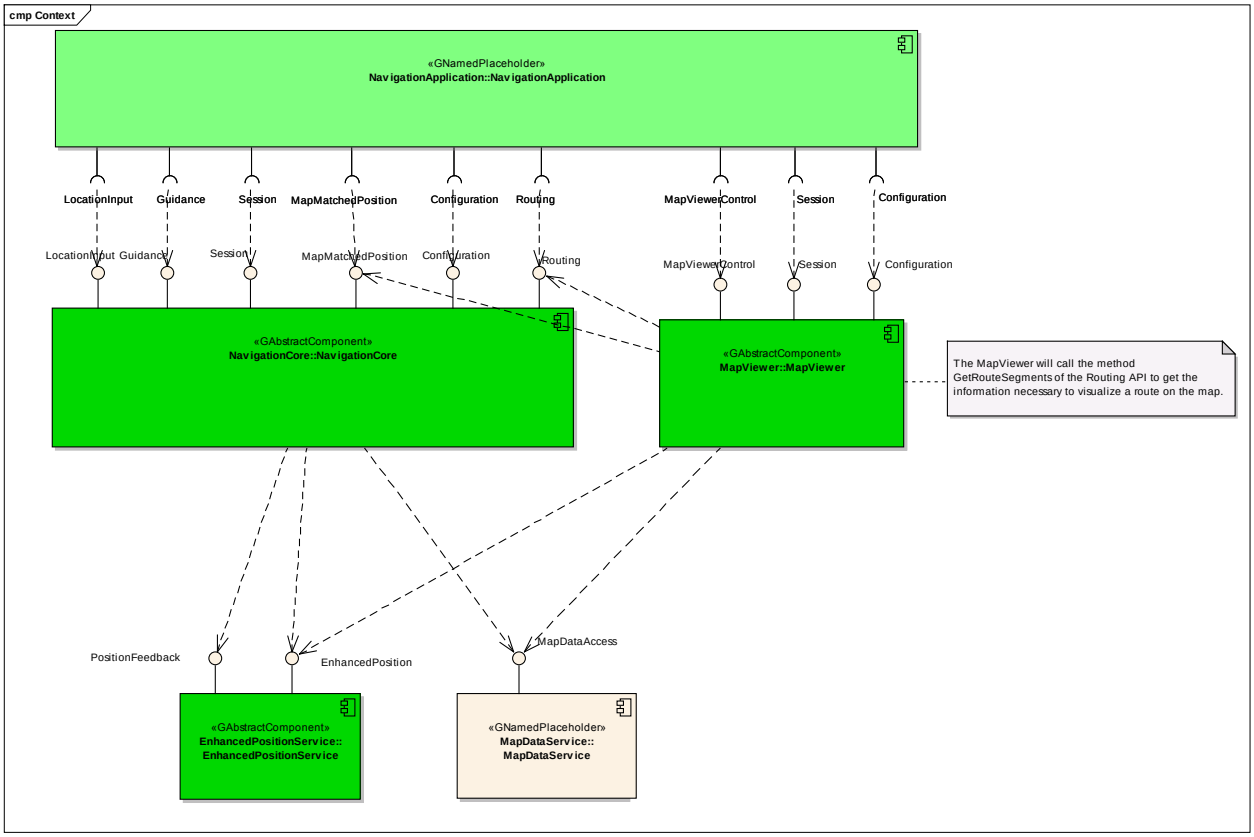
- Ease of Development
- Extensibility
- Multi-client Behavior
- Simplicity

5 Architecture

5.1 Interfaces



5.2 Interaction with other Components



6 API

6.1 D-Bus

The MapViewer interfaces are D-Bus interfaces. They are defined using the D-Bus introspection data format, which is nothing but an IDL expressed in XML format.

For more information about the D-Bus data types please refer to the following website:
http://dbus.freedesktop.org/doc/dbus-specification.html#message-protocol-signatures

For more information about the D-Bus introspection data format, please refer to the following website:
http://dbus.freedesktop.org/doc/dbus-specification.html#introspection-format

6.2 Git Repository

The MapViewer interfaces can be found in the GENIVI Git repository at:
https://git.genivi.org/git/gitweb.cgi?p=navigation;a=tree;f=MapViewer/api

6.3 Naming Convention

Element	Description	Example
Interface File	genivi.<component name in lowercase character>.<interface name in lowercase characters>	genivi.navigationcore.mapviewercontrol.xml
Methods/Signal/Properties	Camel case naming convention. First letter uppercase	CreateMapViewInstance
Arguments	Camel case naming convention. First letter lowercase	scaleID

6.4 Data Types Convention

D-bus types code are used. Please refer to the following webpage for more information:

http://dbus.freedesktop.org/doc/dbus-specification.html

Element	D-Bus Data Type Code	Example
Enumerators	q (uint16)	
Handles	y (uint8)	
Maps	a{qv}	Dictionary of tuples (key, value) The key is expressed as an enumerator

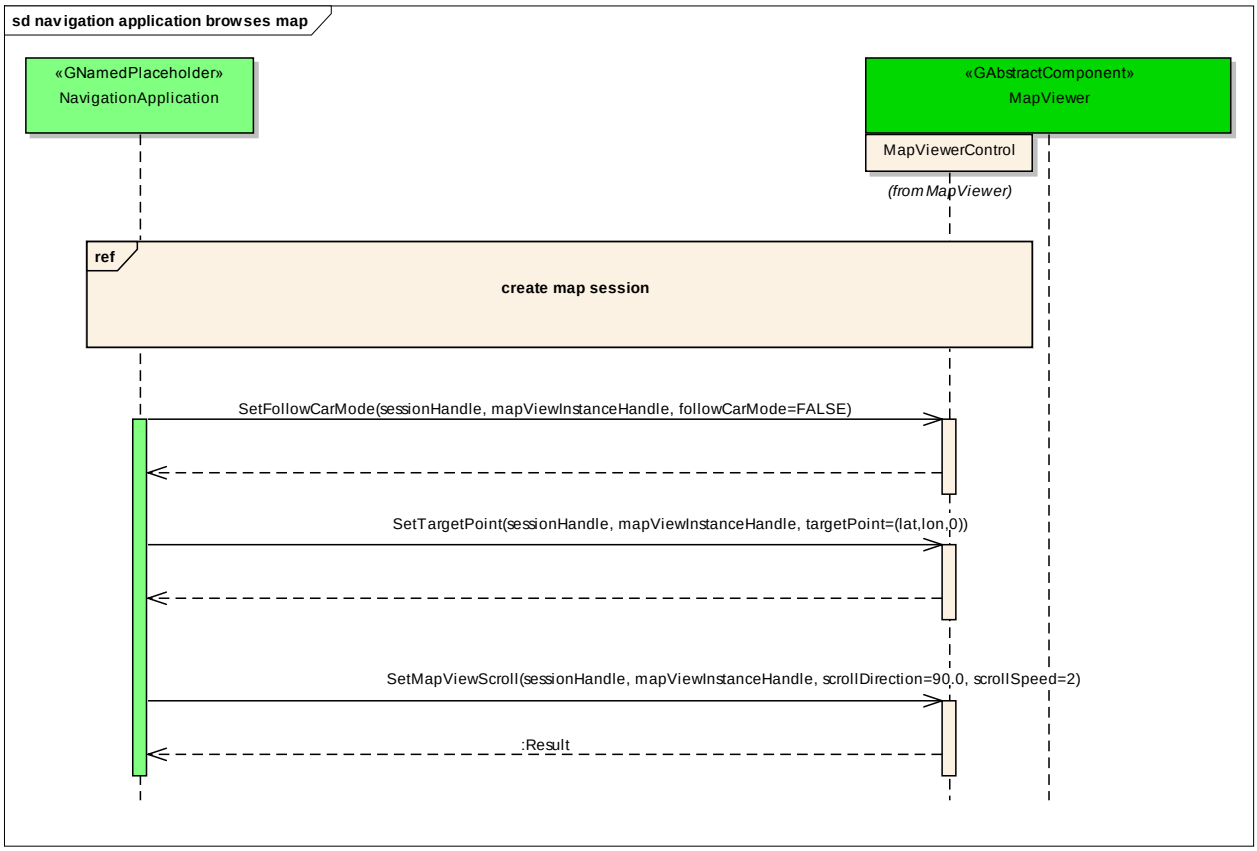
6.5 Errors

Error Type	Description	Example	Error Documentation	Note
User Error	Error caused by user actions	The user tries to start route guidance, although guidance is already running	Application specific error string documented in the XML file	Can occur in final product
Hardware Error	Error related to hardware/database related problems	No map data	Application specific error string documented in the XML file	Can occur in final product
Protocol Error	Error caused by wrong sequence of commands	Wrong sequence of commands to enter destination	Standard D-Bus error string	Should not occur in final product
Bus Error	D-Bus communication error	Bus busy	Standard D-Bus error string	Can occur in final product
Programming Error	Programming Error	Invalid parameters	Standard D-Bus error string and debug messages	Should not occur in production code

Only application-specific errors are documented directly in the interfaces (XML files). For all other errors, standard D-Bus strings are used. These kinds of strings are not documented in the interfaces. It is implicitly assumed that every method may return a standard D-Bus error string.

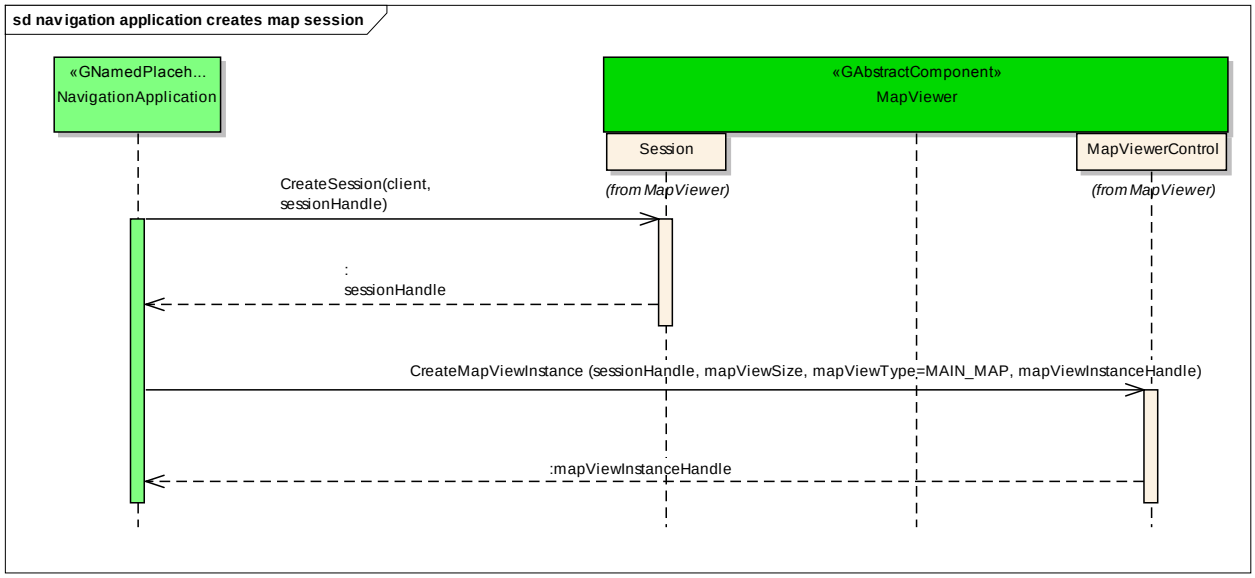
6.6 Sequence Diagrams

6.6.1 navigation application browses map

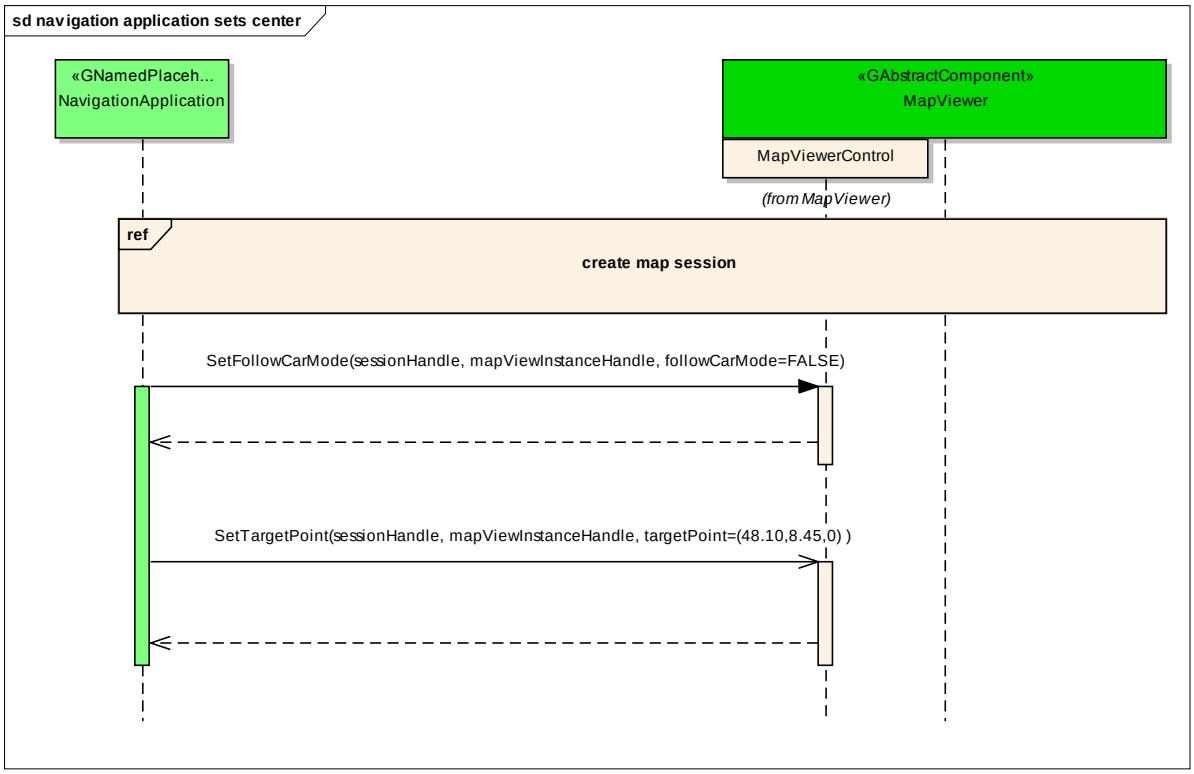


© 2014 GENIVI Alliance

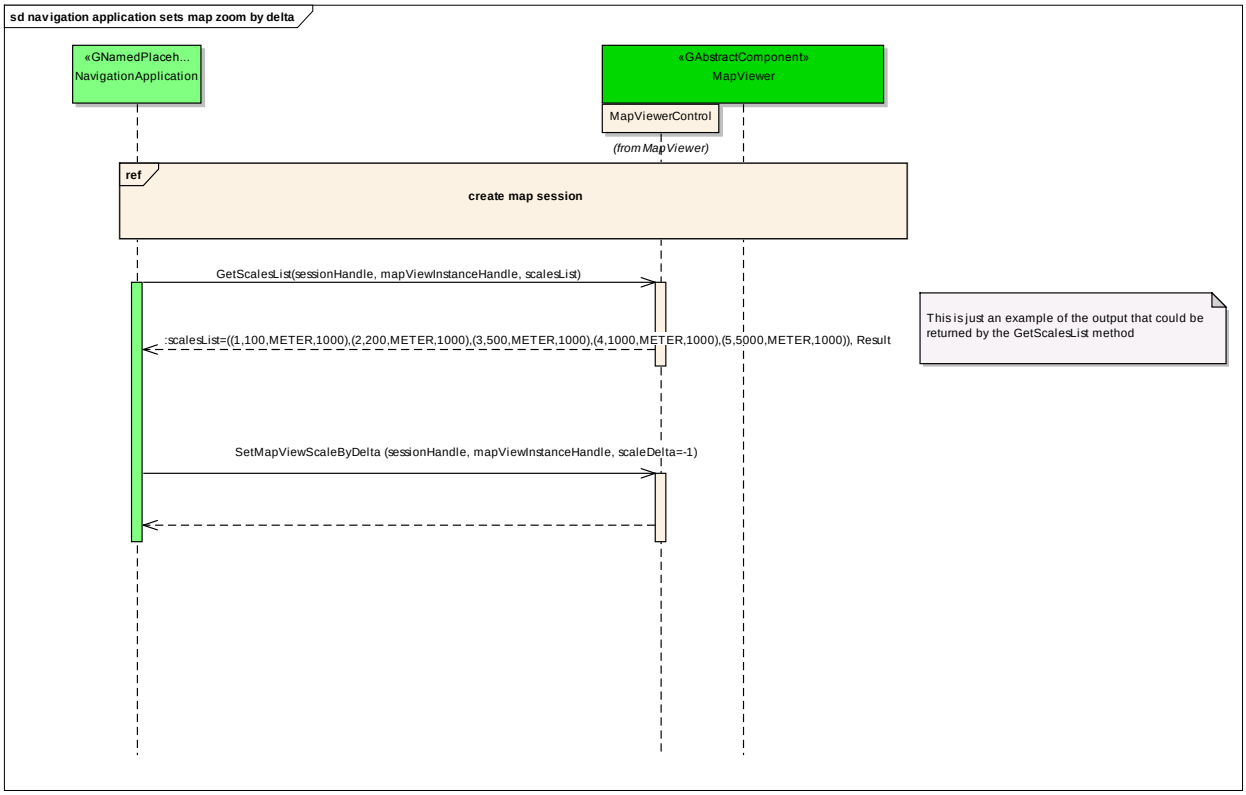
6.6.2 navigation application creates map session



6.6.3 navigation application sets center

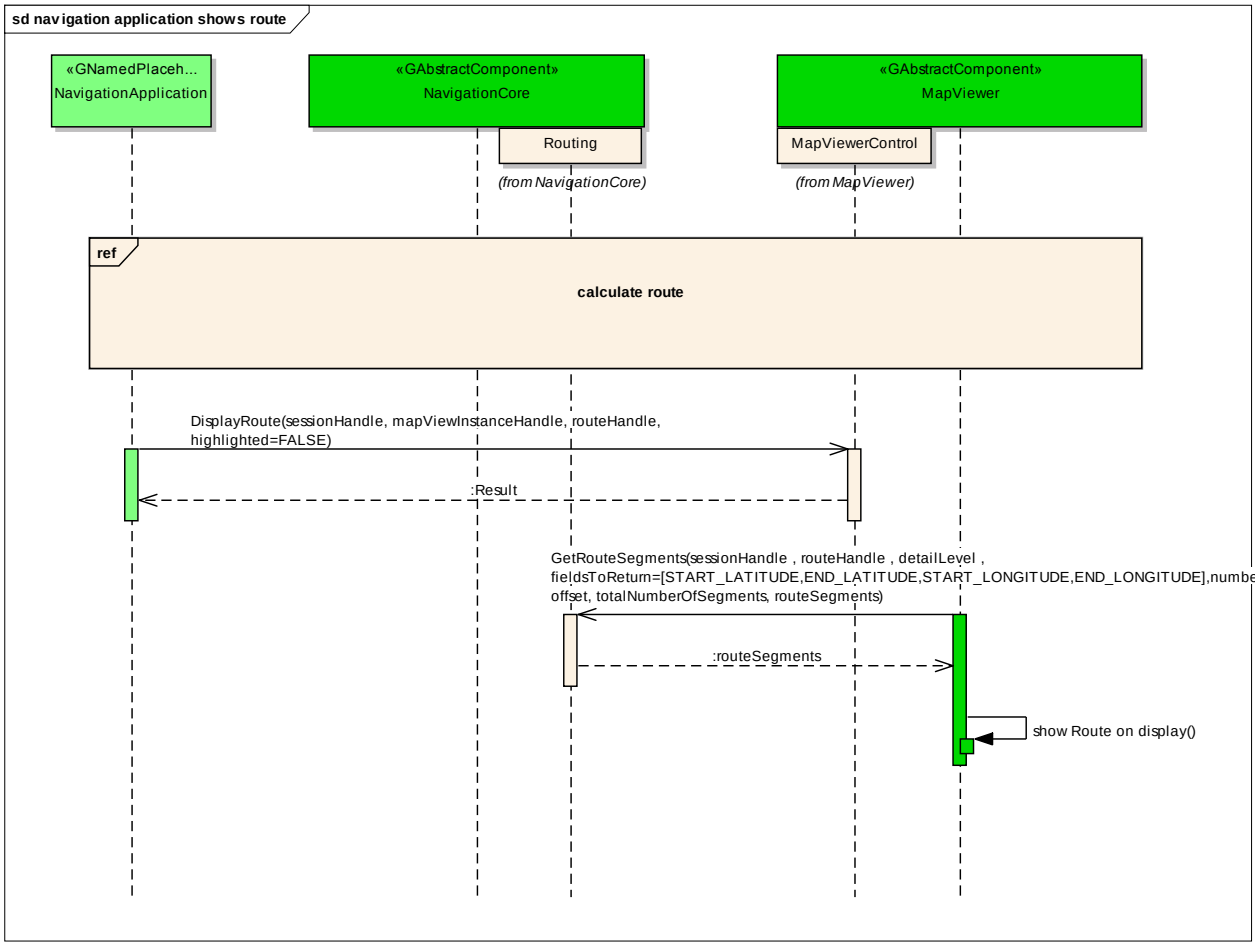


6.6.4 navigation application sets map zoom by delta



© 2014 GENIVI Alliance

6.6.5 navigation application shows route



6.7 Interfaces