

OPEN NAVIGATION SURFACE WORKING GROUP

# MEETING SUMMARY

2013-04-04

Teleconference/GoToMeeting

DRAFT VERSION

2013-04-16

## 1 Introduction

This document details the result of the meeting held at 1530EDT on 2013-04-04 to continue development for a new release of the library. The meeting was held via GoToMeeting and teleconference, hosted by CCOM/JHC. The summary of all meetings and teleconferences of the Open Navigation Surface Working Group (ONSWG) can be obtained from the project's web-site, <http://www.opennavsurf.org>. For a list of participants, see section 4.

In the following, names of people with action items are shown in **BOLD SMALL CAPS**; expected deadline release dates are shown **in red**. Sizes of variables are indicated by 'U' for unsigned, 'S' for signed, 'F' for floating-point, and a size in bits (e.g., U8 is an eight bit unsigned integer, F64 is a 64-bit (double precision) floating-point number). Data sizes are given in bytes (B) with the usual convention that the SI multipliers are taken to mean multiples of  $2^{10}$ B (i.e., 1kB =  $2^{10}$ B = 1024B). The acronym 'CR' means 'Candidate Release' (i.e., a release of the library for comments) and 'FR' means 'Full Release' (i.e., release V1.6 of the library).

## 2 Summary of Discussion

### 2.1 Versioning and Resources for the Library

The group discussed the issue of versioning of the library, and the associated problem of resources (particularly the required XML schema files). The difficulty is primarily that having multiple versions of the library on the same machine can require multiple versions of the resources, but the library relies on a single environment variable to find them, making swapping versions difficult. A secondary problem is in ensuring that different versions of the library can be used within the same program so that older versions can be written (and read) by newer libraries and vice versa. (This is primarily a problem as people move to a new version of the library, which often happens in a staggered fashion.)

The group agreed that the former problem could be solved if there was an API call to provide the library with the location of the resources to use (rather than defaulting to the environment variable), therefore giving the programmer the choice (**ACTION: VAN DUZEE**). The group also agreed that the second problem could be resolved if the library was build as a DLL (or shared object), at which point the code could programmatically choose the appropriate version, if required. Since this is going to be resolved through the adoption of the new build system in 1.5.2, no further action is required.

### 2.2 Updates for Release 1.5.2

#### 2.2.1 Build System

Divergence of the build system for the current code base has meant that it is difficult to build the code, and the method is quite different on different systems. A new build system has been trialed by **Van Duzee** through a branch of the source code, which uses Cmake to unify the build preparation on multiple platforms. A proposal was made to adopt this system for the next release, 1.5.2.

There was general agreement for this, although it was noted that testing on Mac OS X, Linux and MinGW were still required to ensure that the process was smooth on all platforms currently in use with the developers. (**ACTION: PATON/BOGGAN [MAC OS X, LINUX], BYRNE/MCDONALD [MINGW]**.) The most significant problem, however, is that the current branch uses Xerces 2.8 for that section of the build, which has significant API changes compared with the current version; these changes would be problematic to absorb into current XML handling code in the NAVO-provided metadata parsing library. **Lamey** noted, however, that there was no requirement to have a particular version of Xerces for the build except that it had to be one that built straight from the distribution, and a simpler option than trying to update all of the XML code would be to pull back to a version of Xerces before the incompatible changes, and revert the changes to the code in the branch back to the old API. The group agreed that this was a simpler solution, although there needs to be confirmation that this is possible. (**ACTION: VAN DUZEE, RUSSELL**.)

### 2.2.2 *Updates to Uncertainty Enumerations*

Ladner indicated that NAVO would like to add two new uncertainty types to the enumeration in the XML schema document so that they can include uncertainties being calculated in their models as output structures in BAG files. This is expected to be a simple change to the schema files to allow the enumerated values, with corresponding changes in the documentation to describe them. The addition was therefore adopted for the 1.5.2 release. (**ACTION: RUSSELL.**)

### 2.2.3 *FSD Documentation Changes*

As an outstanding issue from the last release, better documentation of the current configuration of the library is required, particularly the File Specification Document. Given the difficulty of merging multiple Word documents, the group agreed to have this done centrally. (**ACTION: CALDER.**)

### 2.2.4 *Example Files and Binary Builds*

The project has had a long-standing action item to provide example files that demonstrate the capabilities and complexities of the BAG data format, and to provide binary builds of the library for various architectures to ease adoption. The group agreed that this was still a priority, and that these could be hosted on the project website at any time; the files should be transferred to CCOM's FTP server (ftp://ftp.ccom.unh.edu) for inclusion. (**ACTION: CALDER.**)

### 2.2.5 *Schedule*

The group agreed that the next minor release (1.5.2) of the library should be 2013-06-03, using the normal format of a candidate release followed by a two-week consultation period, modifications if required, and then a full release.

## 2.3 **Updates for the Next Release**

### 2.3.1 *Schema Updates for S-102 Compatibility*

The current definition of S-102 has some changes to the metadata schema that require some attention if the BAG file format as currently defined is going to be, by default, S-102 compliant; many of the group agree that this is a priority since it would be painful to have multiple versions. Ladner noted, however, that by the defining document, S-102 should be compatible with BAG (rather than the other way round) and therefore agreed to determine what the best course of action should be to make these changes. (**ACTION: LADNER, LAMEY.**)

### 2.3.2 *Potential Removal of Xerces*

The use of the Xerces library to parse the XML metadata strings has been a problem for a number of versions of the library, primarily due to the difficulty of integration and use. Lamey indicates that libXML, which is significantly simpler to use, is now capable of parsing the metadata and doing schema validation. It might therefore be possible to completely remove Xerces from the build system for the next version of the library; Lamey agreed to investigate with particular attention to any API changes that this would require, along with modifications to current code. (**ACTION: LAMEY, VAN DUZEE.**)

### 2.3.3 *GDAL Compatibility*

The group discussed the merits of supporting a GDAL interface to BAG directly, rather than relying on third-party or community implementations (which may, or may not, correctly honour the interfaces defined in the API and therefore may be fragile to future changes). The group agreed that this was a worthwhile task, although it was not immediately clear the level of effort involved. Riley agreed to investigate. (**ACTION: RILEY.**)

### 2.3.4 *Schedule*

The group agreed that a plausible release schedule would be fall/winter of 2013, to be revised after 1.5.2.

### 3 Summary of Action Items and Dates

The following actions and dates were agreed:

Person	Actions(s)	Section	Date
Bogan	Test build of 1.5.2 with CMake on Linux and MacOS	2.2.1	2013-06-03
Calder	Add example files/binary builds to website as available	2.2.4	2013-06-03
	Integrate FSD modifications	2.2.3	2013-06-03
Ladner	Update to schema for BAG compatibility with S-102	2.3.1	2013-10
Lamey	Updates to schema for S-102 compatibility with BAG	2.3.1	2013-10
McDonald	Test build of 1.5.2 with CMake on Win/MinGW	2.2.1	2013-06-03
Riley	Investigate GDAL compatibility and support issues	2.3.3	2013-10
Russell	Test build of XML metadata API with earlier Xerces version	2.2.1	2013-06-03
	Add new uncertainty enumerates to the metadata schema	2.2.2	2013-06-03
Van Duzee	Add API to set configuration directory	2.1	2013-06-03
	Test build of XML metadata API with earlier Xerces version	2.2.1	2013-06-03
	Removal of Xerces with adjustments to API/code	2.3.2	2013-10

Dates above in red are those which would result in a significant impact on other activities were they to slip, and are therefore critical.

### 4 Participants

Jeff Bogan (QPS)  
 Shannon Byrne (SAIC Newport)  
 Brian Calder (CCOM/JHC)  
 Marcus Cole (NOAA)  
 David Fabre (NAVO)  
 Wade Ladner (NAVO)  
 Webb McDonald (SAIC Newport)  
 Steve Nosalik (NAVO)  
 Mark Paton (QPS)  
 Jack Riley (NOAA)  
 Michelle Russell (Lockheed Martin/NAVO)  
 Mike Van Duzee (CARIS)