

OPEN NAVIGATION SURFACE WORKING GROUP

TELECONFERENCE SUMMARY

2009-07-10

Hosted by SAIC Teleconferences

DRAFT VERSION

2009-07-10

1 Introduction

This document details the result of the teleconference held at 1000EST on 2009-07-10 to continue development for a new release of the library. The meeting was kindly hosted by Shannon Byrne using the Science Applications International Corporation's teleconference facility. 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 5.

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 V1.2 of the library).

2 Summary of Discussion

2.1 Follow up on Shallow Survey 2008 Meeting

2.1.1 Use of EPSG Projection Strings

Paton has started development of the model for inclusion of EPSG projection strings in BAG. During discussion it became evident that there are greater implications for this change than previously thought, and in particular that this would require API changes to ensure that there was only one mechanism to set the geodetic and projection information associated with the BAG. (Currently, it is possible to set the information arbitrarily in the XML metadata string, or via the XML library being proposed for incorporation by NAVOCEANO.)

After some discussion, the proposed solution became:

1. Provide an interface in the API to allow the user-level code to specify either an EPSG code number (which contains all of the information to look up a projection string), or a well-known string that summarizes the projection (e.g., 'WGS84_UTM_Zone19_N'), and have the API translate either into the canonical EPSG description string. Reverse lookup would also be available on read.
2. Make the components of the XML library that handle geodetic and projection information private so that user-level code cannot use them to manipulate the XML string prior or subsequent to writing the BAG file.
3. Add an entity to the XML metadata string to allow for storage of the canonical string description of the projection information, and update the DTD to match.
4. Add functionality to the API so that the entities of the XML metadata related to geodetic and projection information are automatically populated from the canonical string description of the projection information during both read and write processes. (This ensures that the XML metadata is always consistent.)

Since these changes impact multiple areas of the library, and change the API, the group concluded that a proposal for how the changes would affect the project should be developed prior to the code being checked in to the repository (Action: **PATON**.) In order to support this, the group agreed that the XML library component should be added to the repository as soon as possible (ahead of any other changes) so that the impacts can be assessed (Action: **RUSSELL**). The assessment of this proposal is expected to take longer than previously expected; the group therefore agreed that it would be considered for RC2 of the current cycle rather than RC1; the action on this is continued.

2.1.2 Nominal Depth Layer in BAG

NAVOCEANO have now completed the API changes required to implement the nominal depth layer. They have also contributed a design for an optional layer to allow a BAG to have both elevation data in the default layer and a nominal depth in an optional layer. The optional layer design includes an indication of the type of data in the layer so that current application software will not be confused by the two situations.

These changes will be ready for RC1, and will include updated versions of `bagread.c` to illustrate the behavior of the new additions, and `bagwrite.c` to construct example data with the new optional layer. (Action: **RUSSELL**). The group discussed the need to ensure that the functionality of `bagread.c` to generate outputs in ASCII and ArcView grid form be maintained, and this will be addressed in the new versions. Since these changes will require that the optional layer be documented, changes will be required to the FSD before RC1 (Action: **WARNER**), which will then need to be updated on the website (Action: **CALDER**).

2.1.3 *Compression in HDF5*

Paton reports that this action has been completed, although some extra testing will probably be required to assess the performance penalty if any (initial indications are that this is likely to be very small). The group discussed how the API should be changed to arrange for the addition of compression, and concluded that it should probably be enabled by default, with an API call to turn it off if required. (Action: **PATON**).

2.2 **Release of New Library Version**

2.2.1 *Binary Builds for Release*

The group discussed the requirements for binary builds, and concluded that it might be necessary to have builds done with different versions of the Microsoft compilers. In particular, we might need a version compiled for Win32 in Visual Studio .NET 2003 for compatibility with other language bindings, particularly python (Action: **RILEY**), and a pair for Win32 and Win64 built in Visual Studio .NET 2005. (Action: **PATON**). Packaging will be done as previously discussed (Action: **CALDER**).

2.2.2 *Addition of XML Library to Distribution*

Warner and Russell report that this is available for distribution and will be checked in before RC1 in order to allow consideration of changes mandated by the EPSG additions (see 2.1.1) (Action: **WARNER, RUSSELL**).

2.2.3 *Use of HDF5 V1.8*

Russell and Nosalik brought forward a request that the project move to the use of V1.8 of the HDF5 library, as suggested by the HDF5 developers (support for V1.6.5 as currently used in BAG is being phased out). They have trialed this internally and report that the system is operational, but that BAGs written with V1.8 are not readable by any version of the library compiled against V1.6.5 (i.e., the canonical distribution of BAG would not be able to read newer BAGs). Although this is currently only an internal NAVOCEANO problem (distribution of their BAGs is limited), this is problematic in the long term and needs to be addressed. Since the current release is going to change some of the API and require a version step anyway, the group agreed that now might be the appropriate time to make the change.

Russell reported that the switch to V1.8 should be a compile-time managed solution, since the new version of the library has a compatibility mode that makes it export a version of the API that matches V1.6. Although this means that the newer components of the HDF5 API will not be available, the BAG code does not currently use them anyway, so there should be no loss. The group discussed this, and agreed that while we expect that the BAG API will eventually be modified to match the HDF5 V1.8 API, this is not required for the current release.

There was some concern that the backwards compatibility of HDF5 might not be complete, and the group requested that NAVOCEANO check their code against BAGs built using different software (e.g., data from NGDC for NOAA surveys, which typically use CARIS/HIPS), and report on any issues that are found (Action: **RUSSELL**). Pending this report, the build system changes and HDF5 implementation will be contributed by NAVOCEANO for RC1 or at worst RC2 (Action: **RUSSELL**). Byrne suggested that since this is going to change the API significantly, it would be appropriate to post notice on the project's website and sent a notification to the general e-mail distribution; the group agreed (Action: **CALDER**).

2.2.4 *Timescales*

The group discussed the provision of a revised timescale for the release given the changes considered during the meeting. After some discussion on availability, the group concluded that a two-stage release candidate would probably be more appropriate, and therefore set provisional dates of 2009-07-14 for RC1, fol-

lowed by further work and updates for RC2 on 2009-08-03. Byrne suggested that some extra time is probably appropriate for testing given the scale of the changes being considered, and the group agreed; the full release date was therefore set for 2009-09-21. Releases will be managed through the ONS website as before, and announced via the general e-mail distribution.

3 Summary of Action Items and Dates

The following actions and dates were agreed:

Person	Actions(s)	Section	Date
McDonald	Provide reminders of passcode and number for teleconf	4	2009-07-27
Calder	Add section to website to support "Related Products"	N/A	FR
	Update FSD on website after modifications for XML/Optional Layers by NAVOCEANO	2.1.2	RC2
	Package binary builds for full release	2.2.1	FR
	Provide notice on website/e-mail of proposed change to HDF5 V1.8	2.2.3	RC1
Paton	Remove references to GeoTrans	2.1.1	RC2
	Provide proposal for EPSG strings and API changes	2.1.1	RC2
	Turn on compression support in HDF5	2.1.3	RC1
	Provide binary builds of FR to Calder for packaging	2.2.1	FR
Riley	Provide builds for Visual Studio .NET 2003/Win32	2.2.1	RC1
Russell	Add XML library to repository	2.1.1	2009-07-10
	Add API support for Nominal Depth layers	2.1.2	RC1
	Test HDF5 V1.8 library support for current generation BAGs	2.2.3	RC1
	Provide HDF5 V.1.8 build modifications and library	2.2.3	RC1/2
Warner	Update FSD with XML library and optional layer information	2.1.2	RC1

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

- Release Candidate 1: 2009-07-14
- Release Candidate 2: 2009-08-03
- Full: 2009-09-21

4 Next Meeting

The next meeting of the group will be held by teleconference on 2009-07-30 at 1000EST, in order to formalize the release of RC1. Details of connection number and passcode are to be arranged and distributed by e-mail to the development list. (Action: **BYRNE.**)

5 Participants

Shannon Byrne (SAIC Newport)
 Brian Calder (CCOM/JHC)
 Webb McDonald (SAIC Newport)
 Steve Nosalik (NAVOCEANO)
 Mark Paton (IVS Ltd)
 Jack Riley (NOAA)
 Michelle Russell (NAVOCEANO)
 Elizabeth Warner (NAVOCEANO)