

SOP 5: Waypoints (KM_I Creation)

Version 1.0

Revision History Log:

Previous Version #	Revision Date	Author	Changes Made	Reason for Change	New Version #
	November 2012	S. Hoekman, W. Johnson, B. Moynahan, C. Sergeant	Initial version		1.0

Summary

In the course of the annual field work, one hand-held GPS unit records waypoints for two purposes. First, it is pre-loaded with waypoints marking the beginning and ending location of each transect segment to be covered that season. These are used as emergency backup should the main navigation equipment fail. Second, field crew records waypoints to mark the location of exceptions encountered during surveys. Exceptions include pausing along a transect, encountering physical obstacles, and taking manual observations after automated recording systems fail among others.

At the end of season, a comma-delimited ASCII text file of the exception waypoints is downloaded from the GPS unit into NPS network storage. The text file is submitted through the validation / quality assurance iterations until certified. It is stored in the repository and disseminated over the web.

The detailed steps, below, have been tested using Garmin GPS 76s equipment and DNRGarmin 5.4.1 software. Different gear may require adaptations to the steps.

SOP 5 requires users to work in the internal NPS network under valid Active Directory accounts. Access questions should be directed to the Data Manager.

Detailed Steps

A. Project Leader (or delegate) Tasks

1. Connect the field GPS unit using a serial cable to a computer that is logged into the NPS network and then power up the GPS.
2. Start the DNRGarmin application on the computer – if the GPS is not automatically found, use the GPS menu item to set proper serial port and/or speed.
3. Use the FILE / SET PROJECTION menu item to set UTM zone 8N.
4. Under the WAYPOINT menu item, select DOWNLOAD and wait for the file to be fully read.
5. Select those rows on the DNRGarmin table that refer to KIMU exception waypoints taken during the field season.

6. Under the FILE menu item select SAVE TO and then FILE... Use the destination location \\inpglbafs03\data\SEAN_Data\Work_Zone\KM\Data\KM_I \yyyy where yyyy is the survey year covered, e.g., 2011. Name the file "KM_I_yyyy.TXT", once again substituting the year for yyyy. Be sure the Save Type is "Text File (Comma Delimited)."
7. When the save is complete, use Windows Explorer to rename the file's extension to ".CSV". (Attempting to save the file using DNRGarmin with an explicit CSV extension alters the format of the file.)
8. Verify the file transfer was successful and standardize certain names.
 - a. Open the file in an ASCII text editor such as Notepad – do not use a word processor or other software that could reformat the file.
 - b. Observe that the first header line contains column names.
 - c. Observe there are subsequent lines of data and their content appears consistent with the column names.
 - d. Observe that only KIMU field-taken waypoints are in the file. Other waypoints, such as any backup transect endpoints or waypoints left over from other projects, must not appear in this file.
 - e. Because different GPS units format waypoint records differently, the column names in the first line usually must be edited to exact standard titles that subsequent automated processing are expecting to find and interpret. Waypoint files typically contain the basic data we require plus additional columns: ignore the extra data and work with the following four attributes only.
 - i. The column containing the unique waypoint id should have its heading set to WAYPOINT_ID.
 - ii. The column containing the latitude should have the heading LATITUDE.
 - iii. The column containing the longitude should have the heading LONGITUDE.
 - iv. The column containing the date followed by time should have the heading TIMESTAMP.
 - f. Close the editor, saving changes if they were made.
9. Request validation by sending a notification email to the Data Manager, specifying in the message body that deliverable KM_I, for year yyyy is ready; the Data Manager will know to work with the file named "KM_I_yyyy.CSV".

B. Data Manager Tasks

1. On receipt of the submission, assign the next formal Submission Number to this file, as found in the master Submission_Log table.
 - a. Use the "Update Submission Log" web tool at http://165.83.57.239/0_submission_update.aspx.
 - b. Complete Submission_Log details up through the Submission_Date column.

2. Copy the file into the staging area for validation at a subdirectory named with the submission number in [\\inpglbafs03\data\SEAN_Data\Staging\KM\KM_I](#).
3. Validate the submission according to current criteria.
 - a. If the file name does not fit the form defined above, that is grounds for immediate failure.
 - i. Do not attempt to further validate it.
 - ii. Mark the submission status as failed using the web tool.
 - iii. Return a failure email as described below.
 - b. Otherwise, invoke validation of the CSV file according to current criteria by using the web program at http://165.83.57.239/KM_DM_validate_KMI.aspx (See also Appendix H).
 - i. Validation summary results automatically are recorded in the Submission_Log.
4. If submission fails mandatory criteria, reply with a “failure email” that includes:
 - a. The submission number assigned
 - b. The deliverable ID
 - c. The protocol ID
 - d. Documentation listing all the criteria failed
5. If submission passes mandatory criteria, reply with a “success email” that includes:
 - a. The submission number assigned
 - b. The deliverable ID
 - c. The protocol ID
 - d. Documentation listing any specific optional criteria failed
 - e. Request to certify deliverable as complete

C. Project Leader Tasks

1. On receipt of a failure email:
 - a. Rename the invalid file in the work area by prefixing a dollar sign (\$) to its name. If multiple iterations uncover multiple bad files, prepend additional \$ so all file versions are uniquely named and saved in the work area.
 - b. Review the validation report and remedy the errors.
 - i. Be aware that certain column headings are required and have exact spellings, as specified in Appendix H.
 - ii. If the error manifests itself as corrupt values in a row, delete the row using Excel and save the resulting file as type CSV.
 - iii. Save the corrected file using the correct name in the work area.
 - iv. Initiate a new submission with the Data Manager.
 - c. If failure is so egregious that it cannot be resolved, email the Data Manager that the submission is withdrawn. In this case, it will not be possible to have a KM_I product for the year.
2. On receipt of a success email, review any failed optional criteria:
 - a. The following tasks are the responsibility of the Project Leader and may not be delegated.

- b. If the criteria review indicates the validated data are acceptable:
 - i. Reply with a "certification email" stating the deliverable is certified and may be disseminated.
- c. If the validated data are unacceptable:
 - i. Reply with a "withdrawal email", stating the deliverable is withdrawn.
 - ii. Take remedial action to obtain and resubmit a corrected deliverable, if possible.

D. Data Manager Tasks

- 1. On receipt of a withdrawal email:
 - a. Mark the withdrawal in the Submission_Log's Status column using the web tool.
 - b. Terminate the process.
- 2. On receipt of a certification email:
 - a. Verify no sensitive information is in the deliverable. Products containing sensitive information cannot be disseminated. (Sensitivity is highly unlikely for this deliverable.) If sensitive:
 - i. Mark the sensitive designation in the submission status column using the web tool.
 - ii. Notify the submitter of the situation.
 - iii. Complete the deliverable tracking spreadsheet cells referring to dissemination with the word SENSITIVE.
 - iv. Do not attempt to install the sensitive item in the auxiliary repository.
 - b. Copy the submitted file to test environment at AUXREP\KM\KM_I.
 - c. Create an appropriate web link accessible from the KM main page.
 - d. Test accessibility until successful then propagate from test to production environment.
 - e. Verify deliverable is accessible from production web site.
 - f. Mark the certification in the Status column in Submission_Log using the web tool.
 - g. Update the deliverable tracking spreadsheet milestones with the date of completion for KM_I.
- 3. Update the scope of the formal metadata so it includes this new date range.