RFC: Nagg extension for terrain corrected geolocation

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This document summarizes an extended functionality of the NPP aggregating and packaging tool nagg to allow aggregation of certain NPP data products with a terrain-corrected data product.

1 Introduction

Nagg (http://www.hdfgroup.org/projects/npoess/nagg_index.html) is a tool for aggregating NPP data granules from existing files into new files with a different number of granules per file or different combinations of compatible products than in the original files.

The current 1.4.0 and earlier versions of nagg define "compatible" NPP products as the products that have the same geolocation product[1]. The HDF Group developers received a request to extend nagg functionality to allow aggregation of appropriate NPP data products with a terrain-corrected geoproduct. This requested prompted The HDF Group to come up with formal definitions of the "compatible" NPP products that can be used in describing the extended functionality since none of the definitions found in the Control books could serve the purpose. The authors would be more than happy to use the Control Books' definitions if they exist but were overlooked by us.

[1] While Nagg documentation uses term "compatible", it never defines it (see for example, nagg's RM page http://www.hdfgroup.org/projects/npoess/documentation/nagg/nagg-RM.htm). With this RFC we hope to close the definition gap.

2 Definitions

This section introduces definitions that will be used to describe nagg's functionality in section 3.

2.1 Designated geolocation product

Definition: A geolocation product G_{DP} is a *designated* geolocation product for the NPP product DP if the geolocation product collection short name appears in the column "GEO CSN" in Tables A-2 – A-6 of the JPSS Common Data Format Control Book – External Volume I.

2.2 Equivalent geolocation products

Definition: Two geolocation products G_{DP_1} and G_{DP_2} are *equivalent* if the pair (G_{DP_1}, G_{DP_2}) or (G_{DP_2}, G_{DP_1}) can be found in one of the rows of Table 1:

GPID	TCPID
GATRO	GCRIO
GIMGO	GITCO
GMODO	GMTCO

Table 1: Geoproducts with the corresponding terrain-corrected geo products

2.3 Terrain-corrected geolocation product

Definition: A product listed in the second column of Table 1 is called a *terrain-corrected* geolocation product.

2.4 Compatible NPP products

Definition: Two NPP products DP_1 and DP_2 are *compatible* if the corresponding designated geoproducts G_{DP_1} and G_{DP_2} are the same or equivalent.

2.5 A list of compatible NPP products

Definition: The NPP products list $DP_1, DP_2, \ldots DP_N$ is a *list of compatible products* if any two products on the list are compatible.

3 Proposed extended nagg functionality

This section describes the changes in the nagg's functionality to accommodate the request for packaging NPP data products with the terrain-corrected data products.

3.1 Extension to the "–t" option

In the nagg release 1.5.0 the list of the NPP products specified by "-t" is a list of the compatible NPP products as defined in 2.4. The tool will fail if the specified list is not compatible.

3.2 Extensions to the "–g" option behavior

This section describes the effect of the "-g" option when a compatible list of the NPP products is specified by the "-t" option.

3.2.1 "-g" flag is not used

When no "-g" is specified on the command line for nagg, a designated geoproduct is used, unless a terrain-corrected geolocation product is found as a designated geolocation product for one of the data products on the list.

3.2.2 "-g no" is used

No aggregation and packaging of the geoproduct will be performed for the list of the compatible products specified by "-t".

3.2.3 "-g <geo_product_name>" is used

The data products specified by "-t" will be packaged with the geoproduct specified by "-g". The specified geoproduct should be a designated product or equivalent of a designated product for any DP_i found on the data product list, otherwise the tool will fail.

Revision History

February 18, 2013:	Version 1 circulated for comment within The HDF Group.
February 20, 2013	Version 2 updated according the comments and posted online.