

# RFC: Product packaging enhancements for nagg

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VIIRS products are divided into two groups according to their association with geolocation product VIIRS-MOD-GEO (GMODO) or the related terrain corrected geolocation product VIIRS-MOD-GEO-TC (GMTCO). A nagg prototype user has informed us that the GMTCO product can be used with the products associated with the GMODO product. Closer examination of the [JPSS Common Data Format Control Book – External Volume I – Overview](#) appears to indicate that products from both groups are related. Enhancements to nagg are desirable to allow more flexible packaging of these products. The design of nagg does not allow packaging the 18 products associated with VIIRS-MOD-GEO with these 18 related products, although there is a defect in nagg that currently allows for a workaround.

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## Purpose

This RFC describes the barriers to using nagg to package VIIRS products having corresponding geolocation product VIIRS-MOD-GEO (GMODO) together with related VIIRS products that have a corresponding geolocation product VIIRS-MOD-GEO-TC (GMTCO) or with opting for the other of these geolocation products.

## Problem Description

- Nagg does not allow packaging of NPP sensor data products which have different corresponding geolocation products, as determined by its product table derived from the DPID and Geo CSN columns of Table A-2, “Sensor Data Record Identifiers and Data Mapping”, p 173 of [JPSS Common Data Format Control Book – External Volume I – Overview](#).
- A user reported that he has uses for packaging both GMODO and GMTCO geolocation products with the SVM01 – SVM16 VIIRS products, but that nagg by default will not package GMTCO with those products. The current nagg design does not allow packaging those products
- He also reported that he found a workaround using the “-g no” option and adding “GMTCO” to the -t product list.
- He later downloaded the corresponding GMODO granules and wanted to package them with the SVM01-SVM16 products, but nagg returned an error as the SVM01-SVM16 product files created by nagg with the -g no option do not have the N\_GEO\_Ref attribute used to identify the file containing the corresponding unpackaged geolocation granules.

- The same workaround, using the “-g no” option and adding “GMODO” to the product list allows packaging the corresponding GMODO granules with the SVM01-SVM16 product granules.
- The workaround succeeds because with “-g no” nagg omits the check for only compatible products in the -t product list. When the check is run, nagg will not proceed if all products in the list do not have the same corresponding geolocation product. This includes geolocation products since their corresponding geolocation product is null. If this omission is corrected, the workaround will no longer be available.
- From a repeat examination of Table A-2 in the Control Book it appears that certain products (or perhaps all products) associated with the geoproduct GMTCO are in fact compatible with the VIIRS products associated with the GMODO geoproduct, and that nagg should be capable of packaging them.

## Some possible solutions

- 1) Leave nagg as it is and document the workaround. The workaround is that “-g no” suspends checking of the -t product list and allows packaging any products that are specified. This has only been tried with products that probably should in fact be compatible. The output of products that aren’t compatible is unknown, although packaging products with differing times should produce fill granules where a product granule is not available to match an input granule.
- 2) Extend nagg’s product tables to allow for multiple corresponding geolocation products. We would need outside expertise to determine which additional associations should be allowed.
- 3) Extend nagg to allow -t <product list> and -g <geoproduct> in the same command invocation, which is not currently allowed. This would either need to be done in conjunction with option 2 and perhaps additional checking to see that the geolocation granules also correspond temporally to the product granules, or else as an advanced usage option that would allow the packaging of any one specified -g <geo product> with any specified -t <product list>.
- 4) Add an additional option that allows the user to combine any set of products that they choose to package, a sort of I-know-what-I’m-doing-so-don’t-check-it option.

## Recommendation

Option 1 should be kept available until a permanent solution is in place, but is not a permanent solution and diminishes the perceived quality of the tool. Option 4 is nearly the same as option 1, but has a better chance of conveying the risk of its use. Its largest advantage may be that it also may allow for useful package combinations that are unforeseen, although at the risk of unacceptable results that are also unforeseen.

Option 2 depends on outside information and probably involves the most additional work in the tool. If complete information is available regarding related products beyond the primary corresponding geolocation product that is currently known, option 2 combined with option 3 to allow later addition of correct geolocation should produce the most satisfactory.