

## List of Pre-Existing and Third Party Software

### Pre-Existing Software

Only the GEO Cloud and Convection products and the PPS Precipitation product include pre-existing software.

MF-CMS (Centre de Météorologie Spatiale, Météo France) Cloud Products (GEO) preexisting SW:

tropopause.c in mfcms\_prep\_pge03.c in MSG v2012 and v2013

No pre-existing SW included in GEO v2016 and future releases

SMHI Precipitation Product (PPS) preexisting SW:

The following modules have the Ralf Bennartz, University of Wisconsin, Madison, Wisconsin, USA copyright:

Convolution routines for AMSU data:

- Backus Gilbert Convolution of AMSU-B to AMSU-A
- Convolution of land/sea mask to AMSU

MF-PI (Direction des Opérations pour la Prévision/Prévision Immédiate, Météo France) Convection Products (GEO) preexisting SW:

The following modules in MSG v2012 and v2013 have a MF copyright:

pge11\_correlation (.c .h)

pge11\_fin\_episode (.c .h)

pge11\_seuillage (.c .h)

pge11\_structure (.c .h)

Following modules in MSG v2012 and v2013 adapted within IOP/CDOP from pre-existing software have a MF copyright:

pge11\_arbre (.c .h)

pge11\_caracterisation (.c .h)  
pge11\_foudre (.c .h)  
pge11\_ini (.c .h)  
pge11\_main.c  
pge11\_sorties\_fic (.c .h)  
pge11\_suivi (.c .h)  
pge11\_app\_types.h  
pge11\_globals.h  
pge11\_nwp.c

Following modules in GEO v2016 and future releases, adapted from pre-existing software, have a MF copyright:

mft\_arbre.c  
mft\_caracterisation.c  
mft\_correlation.c  
mft\_fin\_episode.c  
mft\_sorties\_fic.c  
mft\_structure.c  
mft\_suivi.c  
mft\_app\_types.h  
mft\_globals.h

## Third Party Software

In addition, the NWC SAF Software uses third party software.

Among them:

- RTTOV Software as delivered by the SAF on Numerical Weather Prediction (NWP SAF)
- BUFRDC and GRIB API software packages freely provided by ECMWF
- Python
- NetCDF, HDF5