GOME-2 Full MetOp Orbit Test Data Set

The Full MetOp Orbit test data set consists of:

- a level 0 file, product format version 5 : 0
  md5sum 6a075a3c0e51cab4fed8e382baf9223b
  (GOME_xxx_00_M01_20051009082532Z_20051009100656Z_N_T_20040205150007Z)

- a level 1a file, product format version 5 : 0
  md5sum 343c1a374f62140c0238cf254cd0ff76
  (GOME_xxx_1A_M01_20051009082532Z_20051009100656Z_N_T_20040205150007Z)

- a level 1b file, product format version 5 : 0
  md5sum 9090f3ffbff0dcbf863bd317db18ec61
  (GOME_xxx_1B_M01_20051009082532Z_20051009100656Z_N_T_20040609112238Z)

- an input test data description document,

- and this "readme" note.

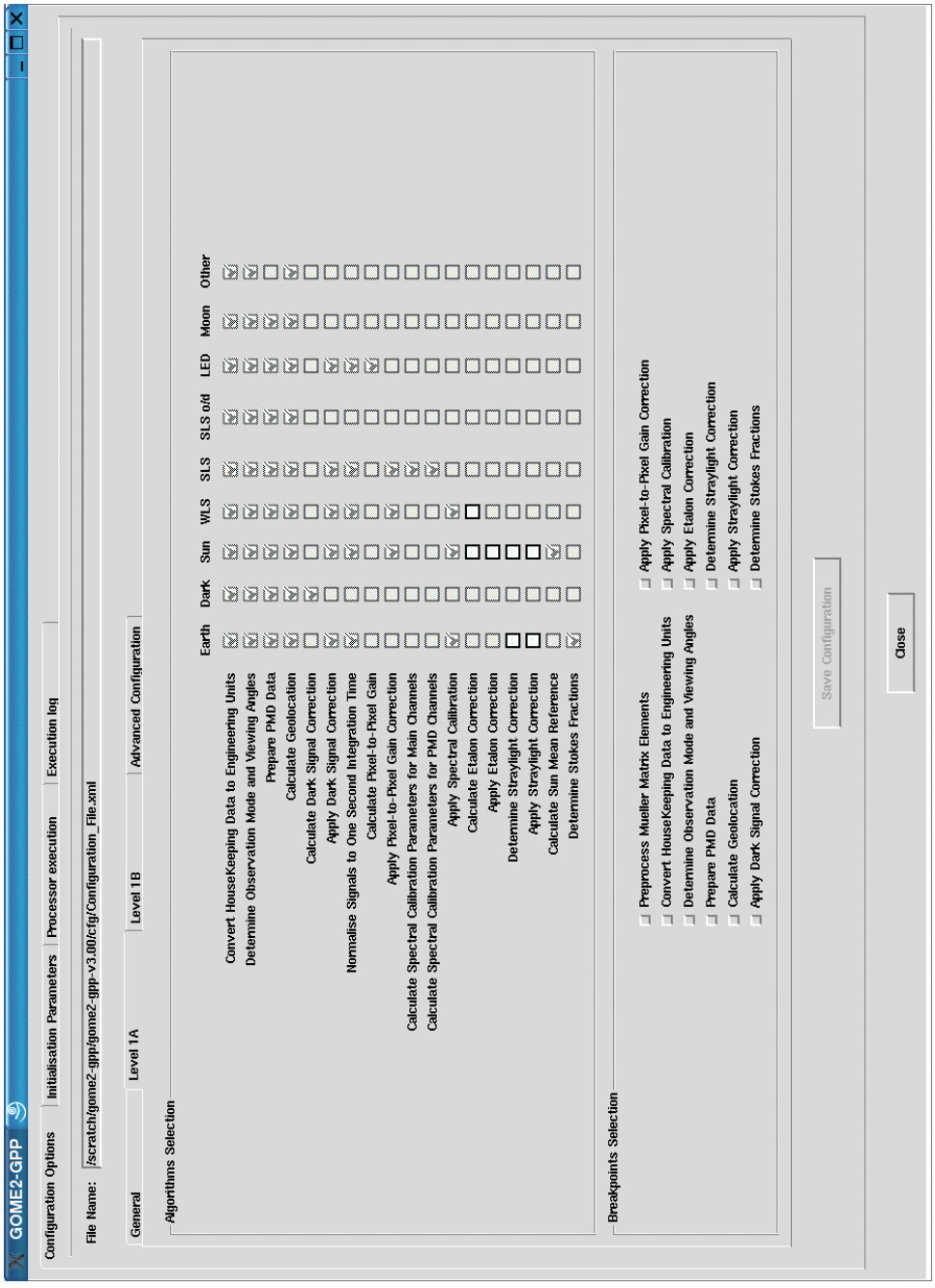
The data were generated using the GOME-2 Ground Processor Prototype Version 3.0 and are based on GOME-2 Ground Processor Prototype Test Data Set Version 3.0. The applicable calibration steps performed in both the level 0 to 1a and the level 1a to 1b processing are indicated in section 1 below. In particular earth and sun measurements are fully calibrated in the level 1b product. It should however be noted that these data are provided for familiarisation with the format, not to provide physically meaningful contents for 1-2 processing.

The data are formatted according to the EPS Generic Product Format Specification (EPS.GGS.SPE.96167) Issue 6 Revision 4 and the GOME-2 Product Format Specification (EPS.MIS.SPE.97232) Issue 7 Revision 0. Known problems and deficiencies in this Test Data Set including deviations from the format specifications are listed in section 2 below. These problems will be corrected in the next release of this sample test data set in the near future.

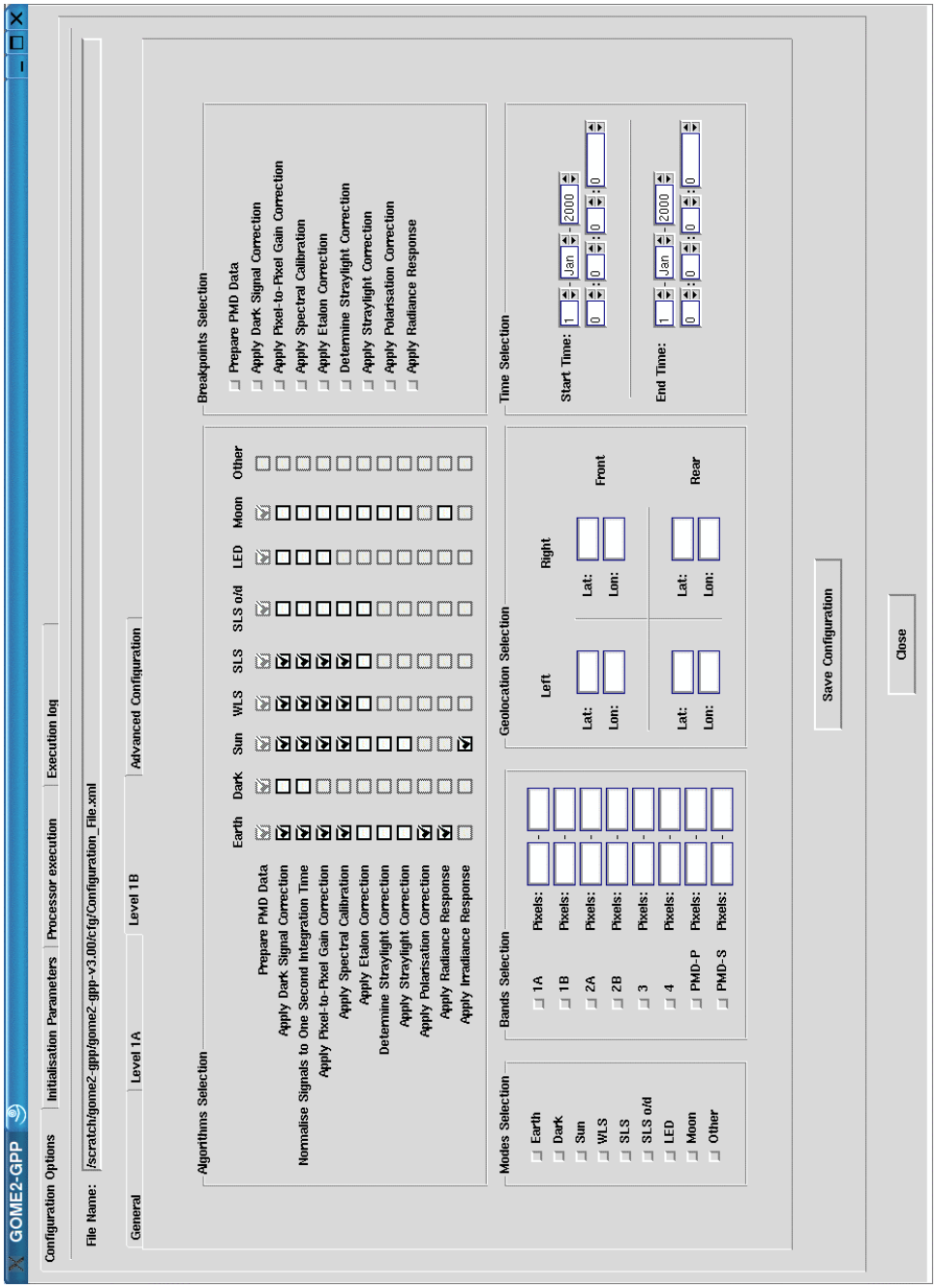
The associated Input Test Data Description document (selected pages from MO-TN-ESA-GO-0365) provides a detailed description of the level 0 file, including a description of the data used in the level 0 file generation, the orbit state vector, and the timeline used to generate the data. Note that this timeline is indicative of the solar calibration timeline.

APPLICABLE CALIBRATION STEPS

1.1 LEVEL 0 TO 1A PROCESSING



1.2 LEVEL 1A TO 1B PROCESSING



2 KNOWN PROBLEMS AND DEFICIENCIES IN THE TEST DATA SET

2.1 EXTRACTION OF PMD SHORT WAVELENGTH PIXELS IN THE LEVEL 1A PRODUCT

Affected fields are BAND_SWPP and BAND_SWPS. ISP size is 35 while block B length is 23 so that first 12 pixels are filled with dummy data in the ISP and must be skipped. This is performed when reading but not when writing the SW bands. So the first 12 pixels are wrong and the 13th pixel corresponds to the 'good' PMD SW pixel number 0, and therefore the last 12 PMD SW pixels are lost.

2.2 EXTRACTION OF PMD DATA FROM THE RESET PACKET IN THE LEVEL 1A PRODUCT

Extraction of PMD data from the reset packet in the level 1a product is wrong. If the reset packet is in 'raw' form (i.e. transfer is 'band + raw'), only the first 15 pixels are correctly extracted.

For “band + raw” transfer mode the correct layout of field BAND_PP and BAND_PS would be 15x304 words + 256 raw + 48 spare. (For the input test data used, where reset pixel is subset counter 15, last ISP in MDR, but note that the reset pixel can occur anywhere in the back scan.) By error the length of the ISP PMD readout has not been updated to be the raw length (i.e. 256) and uses the same as for the previous readouts, i.e. band mode 15 bands. So the rest: 241 + 48 = 249 words is dummy data, and thereby raw data in the reset pixel are incomplete.

2.3 VALUE OF ISP_HEAD.CRC

In level 1a products, the word of ISP_HEAD corresponding to the CRC (i.e. Packet Error Control) field is always set to zero, instead of copying the value from the input ISP.

2.4 NEGATIVE RADIANCE DATA IN THE LEVEL 1A AND 1B PRODUCTS

Negative radiance data are currently set artificially to zero in the level 1a and 1b products. This will be corrected in future deliveries.