siamgen

November 4, 2014

Abstract

siamgen generates the Star Tracker / Instrument Alignment Matrices (SIAMs) for the instruments EMOS1, EMOS2, EPN, RGS1, RGS2, and OM as specified in the Interface Control Document[2]

1 Instruments/Modes

Instrument	Mode
all except ERM	all

2 Use

pipeline processing	no
interactive analysis	no
CCF maintenance	yes

3 Description

siamgen generates the SIAM matrices as specified in the Interface Control Document[2] for the six instruments EMOS1, EMOS2, EPN, RGS1, RGS2, OM from the contents of the CCF Boresight constituent. For each instrument the **cal** is inquired for the corresponding matrix on which **siamgen** performs a basic ICD-compliance check (see Sect. 5). If that checks succeeds the matrix elements are written to *stdout* preceded by a header record containing the instrument ID and time when the boresight calibration for this instrument was performed.

In order to provide the SIAM matrices to FDS according to the Interface Control Document[2] the output of **siamgen** should be redirected into a file and wrapped into a suitable XFTS wrapper[1].

siamgen has no mandatory parameters. For the list of optional parameters see Sect. 4.

4 Parameters

This section documents the parameters recognized by this task (if any).

Parameter	Mand	Type	Default	Constraints
comment	no	string	"SOC generated SIAM matrix"	length <= 35

comment string to go into the SIAM header record (see ICD form details)

withcaltime*xxx*	no	boolean	false	true—false

possible values of *xxx* are: *emos1*, *emos2*, *epn*, *rgs1*, *rgs2*, *om*; boolean switch to determine whether the value given in parameter `caltime`***xxx*** is applicable or not.

caltime*xxx*	no	string	""	format: `yyyy-mm-dd[Thh:mm:ss]`

possible values of *xxx* are: *emos1*, *emos2*, *epn*, *rgs1*, *rgs2*, *om*; the time to put in the first line of the corresponding SIAM block as time of the boresight calibration of the instrument; if `withcaltime`***xxx*** is set to *false* the current time will be used;

5 Errors

This section documents warnings and errors generated by this task (if any). Note that warnings and errors can also be generated in the SAS infrastructure libraries, in which case they would not be documented here. Refer to the index of all errors and warnings available in the HTML version of the SAS documentation.

WrongSIAMMatrix *(error)*
A SIAM matrix retrieved from the CAL is not compliant with the requirements of the SIAM Interface Control Document[2].

6 Input Files

none

7 Output Files

none - SIAM matrices are printed on *stdout*; redirect to file if necessary

8 Algorithm

```
subroutine siamgen

 write SIAM header record
 for instrument <inst> in (list of instruments)
    get boresight matrix for instrument <inst>
    validity check of matrix
    write SIAM matrix for <inst>
 endfor

end subroutine siamgen
```

9 Comments

- The XFTS wrapper needed to send the SIAM file to FDS is *not* generated by **siamgen**.

10 Future developments

None anticipated.

References

[1] ESA. XMM interface control document top level file transfer system (FTS). Technical Report XMM-SOC-ICD-0007-DPD Issue A5, ESA/DPD, Sept 1997.

[2] R. Mugellesi et al. Star Tracker / Instrument Alignment Calibration - Interface Control Document. Technical Report XMM-MOC-ICD-0025-OAD Issue 1.2, ESA/TOS/GFO, November 1999. Found at the URL: `ftp://astro.estec.esa.nl/pub/XMM/documents/siam_icd.pdf`.