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OPS CONFIGURATION FILES AND DATABASE FORMAT SPECIFICATION

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BORDEREAU D'INDEXATION

CONFIDENTIALITE : NC

MOTS CLES : configuration, IASI, TEC

TITRE : OPS configuration files and database format specification

AUTEURS : R. Moreno

RESUME :

Ce document décrit le format des données échangées entre la TEC et l'OPS, à l'exception du produit données technologiques.

REFERENCE ORIGINE (secrétariat) : DTS/MPI/PS/TD/02.50

VOLUME : 1	PAGE : 26	PLANCHES :	FIGURES : 1	LANGUES : Anglais
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CONTRAT :

SYSTEME HOTE : Word 97 – Compaq Deskpro


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Page : 4 of : ~~26~~26**MODIFICATION DU DOCUMENT**

ISSUE	REV	DATE	Total pages	DESCRIPTION DES MODIFICATIONS
1	0	01/03/02	19	Création
1	1	18/04/02	20	Prise en compte d'une nouvelle version de "Definition of data content exchanged between TEC and OPS" (Ed. 3 Rév. 0)
1	2	07/05/02	20	<p>Prise en compte d'une nouvelle version de "Definition of data content exchanged between TEC and OPS" (Ed. 4 Rév. 0)</p> <p>Ajout de paramètres dans le fichier de configuration stable pour prendre en compte la correspondance AVHRR <-> IASI</p> <p>Ajout d'un numéro de version d'ICD dans le fichier de configuration autre : IDefIssueIcd : permet au logiciel de savoir a priori s'il sait lire ce type de fichier</p>
1	3	04/07/02	22	<p>Les paramètres de d'indentification de la configuration sont remontés en début de fichier</p> <p>Les fonctions de calibration spectrales sont passées sous 64 bits</p> <p>Ajout des paramètres de codages des images et spectres</p> <p>Les dates sont codées sur 2*4 octets et non plus sous 2 octets+4</p>


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1	4	28/10/02	25	<p>Révision 1.3 non signée, non diffusée; les barres dans la marge sont relatives à la 1.2</p> <p>“Definition of data contents exchanged between OPS and TEC” cesse d’exister et n’est plus applicable</p> <p>IDefIssueIcd, présent au début du fichier ‘other’ est ajouté au début des autres fichiers de configuration.</p> <p>IDefRevisionIcd est ajouté à tous les fichiers</p> <p>IDefCcsChannelNoise : dim passe de 20 à 6</p> <p>Typo : IDefS1BSigS => IDefS1bSigS</p> <p>Typo IDefNsFirst et IDefNsLast deviennent IDefNsfirst et IDefNsLast</p> <p>Ajout de IDefCovarMatEigenVal1b, IDefCovarMatEigenVal1c, et de ICtcNsegfirstNsfirst dans le fichier ‘other’</p> <p>Ajout de IDefCovarEigenValCalRad, IDefCovarEigenValSpect dans le fichier stable <u>autre</u></p> <p>Suppression de ISmaRNs et de IDefIISsrNs du fichier stable</p> <p>Ajout de IDefMETOPNumber dans les fichiers de configuration</p> <p>Ajout de IDefCcsMode IDefCcsChannelWgt (modif algo 41_CCS) dans other</p> <p>Les indices de qualité TEC IDefSysTEC* sont u-integer4</p> <p>Dans fichier other, IDefSpectNsfirst1b est remplacé par IDefNsfirst1b ; idem pour last</p> <p>Nom : ICtcNsegfirstNsfirst ->IDefNSegNsFirst</p> <p>Ajout IDefCcsImgClLinMax, IDefCcsImgClColMax</p>
1	5	09/04/03	25	<p>Ajout dans le fichier de configuration stable de:</p> <ul style="list-style-type: none">- IDefAvhrrSubGridDl et Dc : facteurs de sous-échantillonnage des appels aux fonctions METOP pour la geolocalisation de IIS via AVHRR


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				<ul style="list-style-type: none">- IDefIacAvhrrChannel : numéro du canal AVHRR utilisé pour la coregistration IIS/AVHRR- IDefScaleSond*1a : informations nécessaires pour le codage des spectres 1A- IDefCcsImgCILinMax était dupliqué : remplacé par Col- Les colonnes description étaient décalées pour les champs IDefDuBandMiss, IDefDurBBTMiss, IDefDurImgEWMiss- Correction de la colonne 'TypeSize' du champ IDefMETOPNumber : 4- IDefQisAvgRadNoise : 'units' = Kelvin et modification de la description- 'Cloud Analysis' est remplacé par 'Radiance Analysis' dans les paramètres d'entrées du 41_CCS. <p>Ajout, à la fin du §4 d'un paragraphe explicitant les conventions d'ordre de stockage des données liées à la grille de l'axe interférométrique.</p>
<u>1</u>	<u>6</u>	<u>18/06/03</u>	<u>26</u>	<u>-Renommage (ajout du suffixe 1b1c) des variables liées au codage des spectres 1B et 1C</u>

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REFERENCE DOCUMENT

- | | |
|-----|--|
| DR1 | Spécifications Techniques de Besoin du logiciel opérationnel IASI
IA-SB-2100-9472-CNE |
| DR2 | Product Processing Software to product Generation IRD
EPS/SYS/IRD/98055 |
| DR3 | Dossier de définition des algorithmes IASI
IA-DF-0000-2006-CNE |
| DR4 | EPS Ground Segment : EPS Generic Product Format Specification
EPS/GGS/SPE/96167 |
| DR5 | EPS Product Convention Document
EPS/SYS/TEN/990007 |

APPLICABLE DOCUMENT

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GLOSSARY

BB	Black Body target
CCD	Corner Cube Direction : the calibration characteristics are not the same when the mirror (corner cube) moves to the left or moves to the right
CS	Cold Space target
DPS	Data Processing Subsystem (on-board processing subsystem)
FOV	Field Of View
Granule	The sample of IASI data that OPS can process once
IIS	IASI Imager (Integrated Imager Subsystem)
LN	Line Number : composed of 37 Step Numbers. In nominal mode, the 30 first step numbers are dedicated to earth measurement, and the others are dedicated to mirror moving and calibration
OPS	Operational Software, corresponds to PPS in EUMETSAT terminology
PGE	Product Generation Element
PN	Pixel Number : IASI sounder is composed of PN=4 pixels
PPS	Product processing Software
SB	Spectral Band
SN	Step Number : during one Step, each of the PN sounder pixels produces one interferogram and the IASI imager produces one image
SNOT	Step Number of Observational Target, without BB and CS
SP	Scan Position : design the position of the scan mirror (sighting the target : earth, calibration body, ...)
TEC	Technical Expertise Centre

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1. PURPOSE AND SCOPE

This document is the format description of the internal data exchanged between TEC and OPS.

This document has been written by CNES for internal purposes:

- Test data sets generation by NOVELTIS
- OPS design and coding by THALES IS

Nevertheless, other people (e.g. HRPT) may potentially use this document. CNES has no responsibilities vis-à-vis these external users.

The data contained in tables in appendix are ordered in alphabetical order. This is TBC (order of the data) : as a matter of fact, TEC can require to gather data according topics.

As it is for internal use and as this does not describe a product, the generic product format specification ([DR4]) and the products convention [DR5] are only considered as reference documents, and not as applicable documents.

2. TYPES AND CONVENTIONS

The data types used in this document are the following:

TYPE	TYPE DEFINITION
Real32	Real number: real coded in 32-bits big endian IEEE format.
Complex32	Complex number : compound data type containing 2 Real32 (first one is the real part and the second one is imaginary part)
Real64	Real number: real coded in 64-bits big endian IEEE format.
Complex64	Complex number : compound data type containing 2 Real64 (first one is the real part and the second one is imaginary part)
Integer2	Signed 2-bytes integer, coded in big-endian (two's complement)
Integer4	Signed 4-bytes integer, coded in big-endian (two's complement)
u-integer2	Unsigned 2-bytes integer, coded in big-endian
u-integer4	Unsigned 4-bytes integer, coded in big-endian
Short CDS time	Short CCSDS Day Segmented time composed of one u-integer2 (day since 01/01/00, starting with 0) followed by one u-integer4 (milliseconds of day)
Date	Same definition as for short CDS time except that the day is coded on one u-integer4

Data can be stored in array:

- For one-dimensional arrays of n elements, X runs for X_0 to X_{n-1}
- For multiple-dimensional arrays $X_{i,j,k}$ will be stored as N_k arrays of N_j arrays of N_i elements (i.e.: i varies more rapidly than j which varies more rapidly than k).

The dim1, dim2 and dim3 columns in the table represent the multiple-dimensional arrays (i_1 varies more rapidly than i_2).

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3. CONFIGURATION FILES

OPS configuration files are divided into two categories:

- The first one is the “stable parameters configuration file”. It contains mainly the data that are inserted only once in IASI level 1 products. This file is read only at the beginning of a dump.
- The second one is the “other parameters configuration file”. It contains, for example, the data that are related to on-board configuration. This file can be read at anytime. The synchronisation is achieved via a special on-board parameter: PTSI.

The names of these configuration files are specified in a TBD document written by EUMETSAT or ASPI. This nomenclature will include information about the validity of the files, and about the version (e.g. : PTSI) of the files.

The format of these files is described in appendix 1 and 2.

4. OPS SPECTRAL DATABASE

Most of OPS spectral database is composed of the spectral calibration functions and the apodisation functions.

The format of this file is described in appendix 3.

Some data of the spectral database are composed of array 11x11 of data (ISdbGridAf, ISdbGridFcs, ISdbGridWnShift). The first dimension is related to the column of the interferometric axis grid, and the second dimension is related to the line.

E.G: for ISdbGridAf, dim5 is related to the column and dim6 to the line of the interferometric axis.



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APPENDIX 1: OTHER PARAMETERS 'CONFIGURATION FILE'

FIELD	DESCRIPTION	UNITS	DIM1	DIM2	DIM3	TYPE	TYPE SIZE	FIELD SIZE	OFFSET
IDefIssueId	Issue number of the format of the configuration file	n/a	1	1	1	Integer4	4	4	0
IDefRevisionId	Revision number of the format of the configuration file	n/a	1	1	1	Integer4	4	4	4
IDefPTSI	Identification of the on-board tables (PTSI) which is consistent with this configuration file	n/a	1	1	1	Integer4	4	4	8
IDefIDConf	Identification of the configuration of the algorithms data	n/a	1	1	1	Integer4	4	4	12
IDefSdbID	Identification of the spectral database to use with this configuration file	n/a	1	1	1	Integer4	4	4	16
IDefStableparamID	Identification of the stable configuration parameters	n/a	1	1	1	Integer4	4	4	20
IDefParamDate	Date of the validity period of the IASI I1 PPS parameters	Date	1	1	1	Date	8	8	24
IDefMETOPNumber	Number of the METOP satellite	n/a	1	1	1	Integer4	4	4	32
ICtcNbSeg	On-board spectra coding : number of spectral regions	n/a	4	1	1	Integer4	4	16	36
IDefNSegNsFirst	Number of the first sample of the first region	n/a	1	1	1	Integer4	4	4	52
ICtcTabNbBit	On-board spectra coding : number of bits, for each spectral region	n/a	550	4	1	Integer4	4	8800	56



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ICtctabOffset	On-board spectra coding : scaling factor (integer offset parameter), for each spectral region	n/a	550	4	1	Integer4	4	8800	8 856
ICtctabOffsetC	On-board spectra coding : scaling factor (offset coefficient) for ICtctabOffset	None	4	1	1	Real64	8	32	17 656
ICtctabOffsetM	On-board spectra coding : scaling factor (slope coefficient) for ICtctabOffset	None	4	1	1	Real64	8	32	17 688
ICtctabScale	On-board spectra coding : scaling factor (integer slope parameter), for each spectral region, used by on-board spectra coding	n/a	550	4	1	Integer4	4	8800	17 720
ICtctabScaleC	On-board spectra coding : scaling factor (offset coefficient) for ICtctabScale	$1/(W/m^2/sr/m^1)$	4	1	1	Real64	8	32	26 520
ICtctabScaleM	On-board spectra coding : scaling factor (slope coefficient) for ICtctabScale	$1/(W/m^2/sr/m^1)$	4	1	1	Real64	8	32	26 552
IDefArcNbNsSeg	Number of samples per $100cm^{-1}$ spectral interval	n/a	3	1	1	Integer4	4	12	26 584
IDefArcNbSeg	Number of $100cm^{-1}$ spectral interval used for radiometric calibration	n/a	3	1	1	Integer4	4	12	26 596
IDefBBEmissivity	Black body emissivity	None	8500	1	1	Real64	8	68000	26 608
IDefBBNbRrs	Number of radiative surfaces in the black body field of view	n/a	1	1	1	Integer4	4	4	94 608
IDefBBRrs	Emissivity of the radiative surfaces	None	10	1	1	Real64	8	80	94 612
IDefCcsChannelId	Radiance analysis : identification of AVHRR channels used for the classification	Avhrr channel	6	1	1	Integer4	4	24	94 692
IDefCcsChannelNoise	Radiance analysis : AVHRR channels noise	None	6	1	1	Real64	8	48	94 716
IDefCcsChannelWn	Radiance analysis : AVHRR channels wavenumbers	m^{-1}	6	1	1	Real64	8	48	94 764
IDefCcsChannelWgt	Weight of the channel for each of the 2 modes of CCS algorithm	n/a	6	2	1	Integer4	4	48	94 812



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IDefCcsDimClassSpace	Radiance analysis : number of AVHRR channels used for the classification	n/a	1	1	1	Integer4	4	4	94 860
IDefCcsDistAgloInit	Radiance analysis : initial value of the cluster agglomeration distance	None	1	1	1	Real64	8	8	94 864
IDefCcsDistMax	Radiance analysis : maximum distance between classes	None	1	1	1	Real64	8	8	94 872
IDefCcsGlueCutoff	Radiance analysis : Clusters coalescence threshold	None	1	1	1	Real64	8	8	94 880
IDefCcsImgCilnMax	Maximal number of lines of the classified image	None	1	1	1	Integer4	4	4	94 888
IDefCcsImgCicolMax	Maximal number of columns of the classified image	None	1	1	1	Integer4	4	4	94 892
IDefCcsIterConvCutoff	Radiance analysis : convergence threshold	None	1	1	1	Real64	8	8	94 896
IDefCcsMinIterNCCutoff	Radiance analysis : minimum number of iteration for the computation of the threshold of the unclassified AVHRR pixels	n/a	1	1	1	Integer4	4	4	94 904
IDefCcsMode	Flag indicating the functioning mode of the IASI L1 PPF. 0<=>AVHRR image is used ; 1<=>IIS is used	n/a	1	1	1	Integer4	4	4	94 908
IDefCcsNbClusMax	Radiance analysis : maximum number of clusters	n/a	1	1	1	Integer4	4	4	94 912
IDefCcsNbIterMax	Radiance analysis : maximum number of iteration	n/a	1	1	1	Integer4	4	4	94 916
IDefCcsNbNonClassifMax	Radiance analysis : maximum number of unclassified points	n/a	1	1	1	Integer4	4	4	94 920
IDefCcsRadToTb	Radiance analysis : flag for radiance to temperature transformation	n/a	1	1	1	Integer4	4	4	94 924
IDefCcsSortingChannel	Radiance analysis : AVHRR channel used for the sorting of the radiance classes	Avhrr channel	1	1	1	Integer4	4	4	94 928
IDefCcsSplitCutoff	Radiance analysis : Clusters splitting threshold	None	1	1	1	Real64	8	8	94 932
IDefCovarEigenValCalRad	Noise index associated to radiometric calibration	None	1	1	1	Real64	8	8	94 940
IDefCovarEigenValSpect	Noise index associated to spectral calibration	None	1	1	1	Real64	8	8	94 948



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IDefCtcNbNsSeg	Number of samples per spectral region, used for on-board spectra coding	IASI samples nb	1	1	1	Integer4	4	4	94 956
IDefCovarMatEigenVal1b	Level 1b noise variance-covariance matrix index	n/a	100	2	1	Real64	8	1600	94 960
IDefCovarMatEigenVal1c	Level 1c noise variance-covariance matrix index	n/a	100	2	1	Real64	8	1600	96 560
IDefDptGainCoeffCutoff	Gain loss, admissible with respect to mean value of the IIS pixels	None	1	1	1	Real64	8	8	98 160
IDefDptIISInHomPixMax	Maximum number a IIS pixel can be no-homogeneous before being declared un-healthy	n/a	1	1	1	Integer4	4	4	98 168
IDefDptIISVarianceCutoff	Threshold for pseudo variance of the IIS	$(W/m^2/sr/m^1)^2$	1	1	1	Real64	8	8	98 172
IDefDptNbCycleFilter	Number of filtering cycles in DPT algorithm	IASI lines	1	1	1	Integer4	4	4	98 180
IDefDurFiltIsrfemOff	Maximum duration of the degraded case : ISRFEM chain not activated	s	1	1	1	Real64	8	8	98 184
IDefDurBandMiss	Maximum duration of the degraded case : one spectral band is missing	s	1	1	1	Real64	8	8	98 192
IDefDurBBTMiss	Maximum duration of the degraded case : no black-body temperature	s	1	1	1	Real64	8	8	98 200
IDefDurImgEWMiss	Maximum duration of the degraded case : image of the earth-view is missing	s	1	1	1	Real64	8	8	98 208
IDefDurImgBBMiss	Maximum duration of the degraded case : calibration image of the black-body is missing	s	1	1	1	Real64	8	8	98 216
IDefDurImgCSMiss	Maximum duration of the degraded case : calibration image of the cold-space is missing	s	1	1	1	Real64	8	8	98 224
IDefDurRadAvhrrMiss	Maximum duration of the degraded case : no AVHRR radiances	s	1	1	1	Real64	8	8	98 232
IDefFaxFLS	Number of IASI lines required for the temporal filtering	IASI lines	1	1	1	Integer4	4	4	98 240
IDefFaxRegressDegre	Degree of the polynomial regression	n/a	1	1	1	Integer4	4	4	98 244



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IDefFaxRegressRmsCutoff	Rms threshold of the regression	rad	1	1	1	Real64	8	8	98 248
IDefFaxT0	Forgetting duration of the interferometric axis filtering	s	1	1	1	Real64	8	8	98 256
IDefFtbFLS	Number of lines used for the black-body temperature filtering	n/a	1	1	1	Integer4	4	4	98 264
IDefFtbRegressDegre	Degree of the polynomial regression for BBT filtering	n/a	1	1	1	Integer4	4	4	98 268
IDefFtbRegressRmsCutoff	Rms threshold of the regression for BBT filtering	rad	1	1	1	Real64	8	8	98 272
IDefFtbT0	Forgetting duration of the interferometric axis filtering for BBT	s	1	1	1	Real64	8	8	98 280
IDefGeolISSubGridSize	Size of the subgrid of IASI imager (IIS)	n/a	1	1	1	Integer4	4	4	98 288
IDefGeolISSubGridNY	Line numbers of the IIS subgrid	IIS line	5	1	1	Integer4	4	20	98 292
IDefGeolISSubGridNZ	Column numbers of the IIS subgrid	IIS column	5	1	1	Integer4	4	20	98 312
IDefGranuleSizeDefault	Default size of a granule (required only when IASI L1 PPS input is composed of full product instead of granule)	IASI lines	1	1	1	Integer4	4	4	98 332
IDefHecTRrsModel	Temperature Model for the radiative surfaces	n/a	200	10	1	Real64	8	16000	98 336
IDefIacCorrelCutoff	Quality threshold for the maximum of correlation	None	1	1	1	Real64	8	8	114 336
IDefIacDCol	Search range for the coregistration	Axhrr column	1	1	1	Integer4	4	4	114 344
IDefIacDLin	Search range for the coregistration	Axhrr line	1	1	1	Integer4	4	4	114 348
IDefIacPosMaxCutoff	Quality threshold for the position of the maximum of correlation	None	1	1	1	Real64	8	8	114 352
IDefIASIMETOPMatRot	Rotation matrix from IASI nominal reference frame to METOP reference frame	None	3	3	1	Real64	8	72	114 360
IDefIASIScanAngle	Sighting angles of the scan mirror	n/a	37	1	1	Real64	8	296	114 432
IDefIccNbCycle	Number of cycles for the filtering of IIS radiometric calibration coefficients	n/a	1	1	1	Integer4	4	4	114 728



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IDefIISAVHRROffsetGuess	Guess of the IIS-AVHRR offset	Avhrr pixels (line;column)	2	37	1	Real64	8	592	114 732
IDefIISColDeb	First column of the IIS region containing the IPSF	IIS column	4	1	1	Integer4	4	16	115 324
IDefIISColFin	Last column of the IIS region containing the IPSF	IIS column	4	1	1	Integer4	4	16	115 340
IDefIISDY	Nominal angular width of the IIS pixels	rad	1	1	1	Real64	8	8	115 356
IDefIISDZ	Nominal angular height of the IIS pixels	rad	1	1	1	Real64	8	8	115 364
IDefIISLinDeb	First line of the IIS region containing the IPSF	IIS line	4	1	1	Integer4	4	16	115 372
IDefIISLinFin	Last line of the IIS region containing the IPSF	IIS line	4	1	1	Integer4	4	16	115 388
IDefIISNbCol	Number of IIS columns	n/a	1	1	1	Integer4	4	4	115 404
IDefIISNbLin	Number of IIS lines	n/a	1	1	1	Integer4	4	4	115 408
IDefIISNoiseNom	Radiometric noise of the nominal mean IIS	n/a	1	1	1	Real64	8	8	115 412
IDefIISRot	Rotation angles between R_IIS (IIS reference frame) and R_I (IASI nominal reference frame)	rad	1	1	1	Real64	8	8	115 420
IDefIISY	Nominal angular coordinates of the IIS pixels	rad	64	1	1	Real64	8	512	115 428
IDefIISZ	Nominal angular coordinates of the IIS pixels	rad	64	1	1	Real64	8	512	115 940
IDefMxColdSpectrum	Nominal radiance of the cold space spectra	W/m ² /sr/m ⁻¹	3	10	1	Real64	8	240	116 452
IDefMxDphi	Nominal spectral shift between the spectra of the black-body and of the cold space	m ⁻¹	3	10	1	Real64	8	240	116 692
IDefMxBiasCalRadCutoff	Threshold for the radiometric calibration bias	W/m ² /sr/m ⁻¹	3	1	1	Real64	8	24	116 932
IDefMxNoiseCalRadCutoff	Threshold for the radiometric calibration noise	W/m ² /sr/m ⁻¹	3	1	1	Real64	8	24	116 956
IDefMETOPOrbitPeriod	Nominal orbital period of METOP (nodal period)	s	1	1	1	Real64	8	8	116 980
IDefNsfirst	Index of the first sample of each band	n/a	3	1	1	Integer4	4	12	116 988
IDefNslast	Index of the last sample of each band	n/a	3	1	1	Integer4	4	12	117 000



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IDefOffsetSondIISModel	Parameters of the orbital model of the Sounder-IIS Offset	n/a	200	2	4	Real64	8	12800	117 012
IDefPdsPix	IASI sounder pixels weight for the spectral calibration	n/a	4	1	1	Real64	8	32	129 812
IDefPIkN	Scaling factor for the calculous of interpolatiob delta for the planck function computation	n/a	1	1	1	Real64	8	8	129 844
IDefPIkPK1	'Constant' used for PLK algorithm : $2 \cdot h \cdot c^2$	J.m ² .s ⁻¹	1	1	1	Real64	8	8	129 852
IDefPIkPK2	'Constant' used for PLK algorithm : $h \cdot c \cdot K^{-1}$	K.m	1	1	1	Real64	8	8	129 860
IDefPsfSondBaryCentreY	X barycentric coordinates of the IPSF in the sounder reference frame	rad	4	1	1	Real64	8	32	129 868
IDefPsfSondBaryCentreZ	Y barycentric coordinates of the IPSF in the sounder reference frame	rad	4	1	1	Real64	8	32	129 900
IDefQisAvgRadNoise	Nominal mean noise in the band (NeDT at 280K)	K	3	4	1	Real64	8	96	129 932
IDefS1bNsFFT	Number of samples for the Fourier transform used for level 1A oversampling	n/a	1	1	1	Integer4	4	4	130 028
IDefS1bOSFitFactor	Oversampling factor of the Fourier transform method	n/a	1	1	1	Integer4	4	4	130 032
IDefS1bOSSplineFactor	Oversampling factor of the spline interpolation method	n/a	1	1	1	Integer4	4	4	130 036
IDefS1bSigI	Semi-width at mid-height of the gaussian for the smoothing of the interferogram extremity	IASI sample nb	1	1	1	Integer4	4	4	130 040
IDefS1bSigS	Semi-width at mid-height of the gaussian for the smoothing of the spectra extremity	IASI sample nb	1	1	1	Integer4	4	4	130 044
IDefS1cNbSWwidth	Number of samples contained in the apodisation window	IASI sample nb	1	1	1	Integer4	4	4	130 048



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IDefS1cNsErase	Number of samples set to 0 in the apodisation function	IASI sample nb	1	1	1	Integer4	4	4	130 052
IDefS1cSigS	Semi-width at mid-height of the gaussian for the smoothing of the apodised interferogram extremity	IASI sample nb	1	1	1	Integer4	4	4	130 056
IDefSmeTScanModel	Temperature Model for the scan mirror	n/a	200	1	1	Real64	8	1600	130 060
IDefSpectDwn1b	Nominal level 1B spectra sampling	m ⁻¹	1	1	1	Real64	8	8	131 660
IDefNsfirst1b	Index of the first sample of the level 1B spectra	IASI sample nb	1	1	1	Integer4	4	4	131 668
IDefNslast1b	Index of the last sample of the level 1B spectra	IASI sample nb	1	1	1	Integer4	4	4	131 672
IDefSpectrDwn	Nominal measured spectra sampling	m ⁻¹	1	1	1	Real64	8	8	131 676
IDefSsdModulCutoff	Validity threshold for the harmonic magnitude	n/a	3	10	1	Real64	8	240	131 684
IDefSsdNhar	Harmonic number of the used spectral lines	n/a	10	1	1	Integer4	4	40	131 924
IDefSsdNitera	Number of iteration for the phase computation	n/a	1	1	1	Integer4	4	4	131 964
IDefSsdNsfirstSW	Index of the first sample of the spectral window	IASI sample nb	10	1	1	Integer4	4	40	131 968
IDefSsdNslastSW	Index of the last sample of the spectral window	IASI sample nb	10	1	1	Integer4	4	40	132 008
IDefSsdOSFftFactor	Oversampling factor of the Fourier transform method	n/a	10	1	1	Integer4	4	40	132 048
IDefSsdOSSplineFactor	Oversampling factor of the spline interpolation method	n/a	10	1	1	Integer4	4	40	132 088
IDefSsdSigI	Semi-width at mid-height of the gaussian for the smoothing of the interferogram extremity	IASI sample nb	10	1	1	Integer4	4	40	132 128
IDefSsdSigS	Semi-width at mid-height of the gaussian for the smoothing of the spectra extremity	IASI sample nb	10	1	1	Integer4	4	40	132 168
IDefSsdSpectralWindowOPS	Number of the spectral window to be used by IASI level 1 PPS	n/a	1	1	1	Integer4	4	4	132 208
IDefSssStdImagCutoff	Intra-pixel homogeneity threshold	W/m ² /sr/m ⁻¹	1	1	1	Real64	8	8	132 212
IDefSssWnShiftMax	Maximum spectral shift which is admissible	m ⁻¹	1	1	1	Real64	8	8	132 220
IDefSssWnShiftMin	Minimum spectral shift which is admissible	m ⁻¹	1	1	1	Real64	8	8	132 228

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APPENDIX 2: STABLE PARAMETERS 'CONFIGURATION FILE'

FIELD	DESCRIPTION	UNITS	DIM1	DIM2	DIM3	TYPE	TYPE SIZE	FIELD SIZE	OFFSET
IDefIssuelcd	Issue number of the format of the configuration file	n/a	1	1	1	Integer4	4	4	0
IDefRevisionIcd	Revision number of the format of the configuration file	n/a	1	1	1	Integer4	4	4	4
IDefStableParamID	Identification of the stable configuration parameters	n/a	1	1	1	Integer4	4	4	8
IDefStableParamDate	Date of the validity period of the IASI I1 PPS stable parameters	Date	1	1	1	Date	8	8	12
IDefMETOPNumber	Number of the METOP satellite	n/a	1	1	1	Integer4	4	4	20
IDefAvhrrMarginBefore	Number of AVHRR lines to be used as margin (before IASI line) in order to take into account the deformation of IASI IIS FOV	n/a	1	1	1	Integer4	4	4	24
IDefAvhrrMarginAfter	Number of AVHRR lines to be used as margin (after IASI line) in order to take into account the deformation of IASI IIS FOV	n/a	1	1	1	Integer4	4	4	28
IDefDptIISDeadPix	Table of the IIS dead pixels	Boolean	64	64	1	Boolean	1	4 096	32
IDefIISNeDT	IIS noise	K	64	64	1	Real64	8	32 768	4 128
IDefIISsrF	Response of the spectral filter of IIS		100	1	1	Real64	8	800	36 896
IDefIISsrDwn	Sampling of the spectral filter of IIS	m ⁻¹	1	1	1	Real64	8	8	37 696
IDefIISsrFnsfirst	Index of the first sample of the spectral filter of IIS	iasI sample nb	1	1	1	Integer4	4	4	37 704
IDefIISsrFnslast	Index of the last sample of the spectral filter of IIS	iasI sample nb	1	1	1	Integer4	4	4	37 708
IDefPsfSondNbCol	Number of columns of the IPSF description in the sounder reference frame	n/a	1	1	1	Integer4	4	4	37 712
IDefPsfSondNbLin	Number of lines of the IPSF description in the sounder reference frame	n/a	1	1	1	Integer4	4	4	37 716



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IDefPsfSondOverSampFactor	Oversampling factor for the IPSF	n/a	1	1	1	Integer4	4	4	37 720
IDefPsfSondWgt	Weights of the IPSF points	n/a	100	100	4	Real64	8	320 000	37 724
IDefPsfSondY	Y coordinates of the IPSF description in the IPSF cold plane	rad	100	4	1	Real64	8	3 200	357 724
IDefPsfSondZ	Z coordinates of the IPSF description in the IPSF cold plane	rad	100	4	1	Real64	8	3 200	360 924
ISmaRbb	Scan reflectivity when sighting the black body	None	8500	1	1	Real64	8	68 000	364 124
ISmaRcs	Scan reflectivity when sighting the cold space	None	8500	1	1	Real64	8	68 000	432 124
ISmaRew	Scan reflectivity when sighting the Earth	None	8500	37	1	Real64	8	2 516 000	500 124
ISmaRNs	Number of points of the scan reflectivity description	None	1	1	1	Integer4	4	4	3 016 124
IWnpWnSW	Spectral position of the samples of the spectral window	m ⁻¹	4096	10	1	Real64	8	327 680	3 016 128
IDefDeltaAvhrrDTbefore	Conversion IASI->AVHRR : defines the timing window (lower limit) for the search	s	30	1	1	Real64	8	240	3 343 808
IDefDeltaAvhrrDTafter	Conversion IASI->AVHRR : defines the timing window (upper limit) for the search	s	30	1	1	Real64	8	240	3 344 048
IDefDeltaAvhrrColLeft	Conversion IASI->AVHRR : defines the column window (left limit) for the search	avhrr columns	30	1	1	Integer4	4	120	3 344 288
IDefDeltaAvhrrColRight	Conversion IASI->AVHRR : defines the column window (right limit) for the search	avhrr columns	30	1	1	Integer4	4	120	3 344 408
IDefScaleSondNbScale1b1c	Number of bands used for applying scale factors to 1b and 1c spectra	n/a	1	1	1	integer2	2	2	3 344 528
IDefScaleSondNsfirst1b1c	Begin channel number for each of the bands to which the scale factors are applied (assumes first band starts with first channel) for 1b and 1c spectra	Channel number	10	1	1	integer2	2	20	3 344 530



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APPENDIX 3: SPECTRAL DATABASE

FIELD	DESCRIPTION	UNITS	DIM1	DIM2	DIM3	DIM4	DIM5	DIM6	TYPE	TYPE SIZE	FIELD SIZE	OFFSET
IDefIssueIcd	Issue number of the format of the configuration file	n/a	1	1	1	1	1	1	Integer4	4	4	0
IDefRevisionIcd	Revision number of the format of the configuration	n/a	1	1	1	1	1	1	Integer4	4	4	4
IDefSdbID	Identification of this spectral database	n/a	1	1	1	1	1	1	Integer4	4	4	8
IDefSdbDate	Date of the validity period of the IASI I1 PPS spectral database	Date	1	1	1	1	1	1	Date	8	8	12
IDefMETOPNumber	Number of the METOP satellite	n/a	1	1	1	1	1	1	Integer4	4	4	20
IDefSafDwn	Spectral width of the spectral functions sampling	m ⁻¹	1	1	1	1	1	1	Real64	8	8	24
IDefSafNsfirst	Number of the sample corresponding to the first instrument function	n/a	1	1	1	1	1	1	Integer4	4	4	32
IDefSafNsIast	Number of the sample corresponding to the last instrument function	n/a	1	1	1	1	1	1	Integer4	4	4	36
IDefSafNsOpd	Number of point for the sampling of the OPD	n/a	1	1	1	1	1	1	Integer4	4	4	40
IDefSafOpdMax	Maximum of optical path difference represented by the self-apodization function	m	1	1	1	1	1	1	Real64	8	8	44



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