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PCF Generator Approach

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1.0 Purpose

This bulletin describes the general rules for developing a Process Control File (PCF) Generator, which is a required step in the Langley TRMM and Terra Information System (LATIS). Since each PCF is unique, this bulletin will serve as a style guideline for the individual generators. The authors thank Joe Stassi, Alice Fan, Denise Cooper, Ed Kizer, and Ricky Brown, SAIC, for their contributions and assistance in documenting this computer bulletin.

2.0 PCF Generator Function

Each CERES Product Generation Executive (PGE), or processor, obtains processing information by reading an external file called a Process Control File (PCF). The PCF contains all of the file information and runtime parameters required by the PGE. The PCF is unique for each processor and furthermore is unique for each instance of execution of each processor.

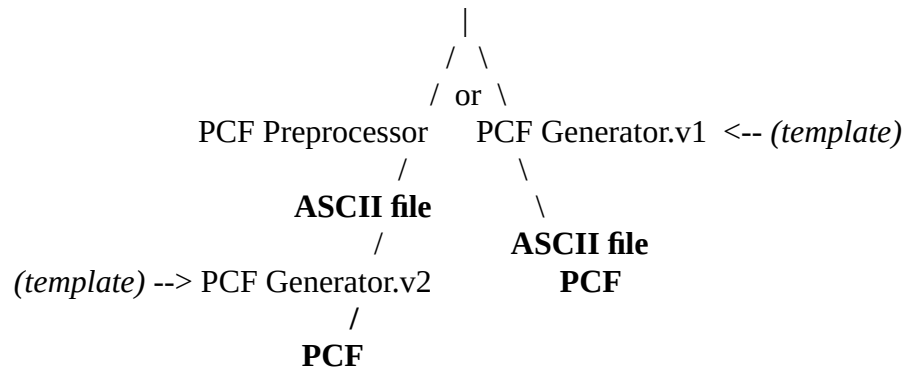
The PCF Generator is a script tailored for each PGE to create a PCF for each instance of PGE execution. It is the responsibility of each CERES Software Developer to write a PCF Generator for each processor and supply it to the LATIS Processing System.

3.0 LATIS Interface

A PCF template is supplied for each PGE. The template is a PGE-specific PCF stripped of all dynamic parameters, dynamic file names, and directory paths. The PCF dynamic values are determined at Production Request time and written to an ASCII file, referred to as 'PCFin' file, using software provided by the CERES Software Developer, referenced as: 'ASCII File Generator' or 'PCF Preprocessor'. This software can be provided as a separate script or included at the beginning of the PCF Generator. The ASCII file contains all of the unique information needed to run the PGE for each Production Request instance and it is used to populate the PCF template. Once the PCF has been created, the process can be staged for execution. The PCF template may be embedded within the PCF Generator code.

Pictorially:

(LATIS Decision - all go?) ---> Provide Dynamic Parameters



Appendix A shows a sample ASCII file. Appendix B shows a script which both creates the ASCII file and places the items of information into the appropriate PCF template locations. Appendix C shows the created PCF file.

4.0 The PCF and PCF Input File Naming Convention

The CERES Project has a predefined naming convention for the PCF (PCF) and for the ASCII file, known as the PCF Input file (PCFin). This format is similar to the CERES output filenames convention. The following will be used:

CER[PGName]_[FileType]_SS_PS_CC.yyyymmddhh

where:

CER	= fixed
PGName	= PGName assigned to the PGE, all PGNames will start with CER appended with the PGE name.
FileType	= 'PCF' or 'PCFin'
SS	= SamplingStrategy
PS	= ProductionStrategyOutput
CC	= ConfigurationCode
yyyy	= 4-digit datayear
mm	= 2-digit datamonth
dd	= 2-digit dataday, if applicable to the PGE
hh	= 2-digit hour [00..23], if applicable to the PGE

Examples for Subsystem 1, PGE1.1P3

CER1.1P3_PCFin_Terra-FM1_Edition1_017009.20000621

CER1.1P3_PCF_Terra-FM1_Edition1_017009.20000621

5.0 The PCF Generator Input File

Information in the ASCII file, PCFin, will have the following format:

Parameter <space> = <space> Value (example: file.1 = Infile)

Each Parameter will be a predetermined variable name and will be expected on the ASCII file, if it exists. If an Input file does not exist, the ASCII file may or may not, depending on the PGE rules, insert the value: NULL or blank or completely leave out the file name. The Generator may need to contain logic to insure that if a NULL value, or blank, is found, then appropriate action will be taken to insure that the file is not placed on the PCF.

The following information must be included in the ASCII file:

- 1) CERES required metadata - from production request
- 2) PGE specific runtime parameters - from production request; these vary with each PGE.
- 3) PGE required directories
- 4) Input file names
- 5) Output file names

5.1 CERES Runtime Parameters

At Production Request time, the following information is entered, where applicable, and stored in the LATIS database from the 'DMT to DAAC Production Request'.

PGENAME

CERHrOfMonth	SamplingStrategy	ProductionStrategyOutput
CERDataDateYear	CERDataDateMonth	CERDataDateDay
Satellite (or Platform)	Instrument	Imager

The LATIS system will provide the ConfigurationCode, Software SCCR number (SWsccr), and Ancillary Data SCCR number (DATAAsccr) based on the PGENAME from the Configuration Management database. The above information and PGE-specific runtime parameters are used to create the input and output file names and to fulfill the CERES metadata requirements.

The following parameters are the CERES baseline metadata (Reference 1). The format and spelling of the parameters must appear on the PCF file, as shown in field 2, using "|" as the field delimiter. The location of these parameters in the PCF is in the 'USER DEFINED RUNTIME PARAMETERS' section as shown below.

```
# =====
? USER DEFINED RUNTIME PARAMETERS
# =====
# (Note: could have other runtime info here)
# -----
# Needed for Metadata wrappers.
# -----
901|PGENAME|"CER4.1-4.1P1"                /* from Production request */
902|SamplingStrategy|"TRMM-PFM-VIRS"       /* from Production request */
904|ProductionStrategyOUTPUT|"SSIT"       /* from Production request */
905|CERDataDateYear|"1998"                /* from Production request */
```

```

906|CERDataDateMonth|"01"          /* from Production request */
907|CERDataDateDay|"05"            /* from Production request */
908|CERHrOfMonth|"00"              /* from Production request */
909|CERHrOfDay|"01"                /* from Production request */
910|ConfigurationCode|"000000"     /* from LATIS database */
911|SWsccr|"00215"                 /* from LATIS database */
912|DATAscrr|"00215"               /* from LATIS database */
921|Instrument|"PFM"                /* from Production request */
922|Platform|"TRMM"                /* from Production request */
923|Imager|"VIRS"                  /* from Production request */
#
# =====
# END METADATA WRAPPER INFORMATION
# =====
# (Note: could have other runtime info here)
#

```

NOTE: PGName (or CERPGName) must be the first parameter listed in the metadata wrapper parameters section of the USER DEFINED RUNTIME PARAMETERS. The following lines must added at the end of metadata wrapper parameters:

```

# =====
# END METADATA WRAPPER INFORMATION
# =====

```

5.2 PGE Directory Paths

The ASCII file will contain all of the PGE required DirectoryName = DirectoryPath. The PGE Generator will then use each DirectoryName where it is applicable within the PCF template.

5.3 PGE Input Files

The Input files for a PGE are categorized as: Constant Ancillary Input Data, External Input Data, and PGE-Dependent Input Data.

1. Constant Ancillary Input Data files - are those data files which remain constant from month to month and rarely change. These files are delivered to the LATIS site by the Sub-system Development Team. There have been no restrictions made on the naming convention of these files, other than the names of the files must be a string of 80 characters or less. [It is **suggested**, but not mandatory, that the date of the file creation be entered as part of the file name, for identification.] Even though the files are described as static files, they could, in the future, be replaced by updated files. The number of files may also change. For example, in Subsystem 1, the file identifier is 'BANAL' and the number of files = 2, the ASCII file would contain:

```

BANAL.1 = Instrument_Engineering_Limits.19980203
BANAL.2 = Elevation_Scan_Offsets.19971212

```

2. External Input Data - is data received at the LATIS DAAC from other DAACs or other processing Data Centers. If any special database tables of information need to be built and populated by the Processing System at the time of ingestion, they will be designed and created

for each specific External Data Set. The filenaming convention will depend on the data provider and the LATIS system.

For example, Subsystem 2 will require the snow data from NSIDC which comes in the following format: f10_iwva_YYDDD_dayAD.hdf.gz where YYDDD is the year and day of the year. The ASCII file would contain:

```
Inputf10.1 = f10_iwva_97350_dayAD.hdf.gz
```

3. PGE-Dependent Input Data Files - are those data files that have been generated by an earlier PGE processor. The specific PGE-Dependent input Data Set Names will be identified for each PCF Preprocessor. It will be the task of the Processing System to provide the PGE the knowledge of the existence of an input file and the AutomaticQualityAssessment value of the desired input file. Given the Data Set Name, SamplingStrategyInput, ProductionStrategyInput, and the appropriate instance qualifiers (such as year, month, day, hour), the LATIS system will determine the existence and status of the input file. As stated above in section 4.0 and restated here for emphasis 'If an Input file does not exist, the ASCII file may or may not, depending on the PGE rules, insert the value: NULL or blank or completely leave out the file name. The Generator may need to contain logic to insure that if a NULL value, or blank, is found, that appropriate action will be taken to insure that the file is not placed on the PCF.'

For example, for Subsystem 4.5-6.1P1, a typical input data file would be:

```
SS4.5_Inputfile.1 = CER_SSFI_TRMM-PFM-VIRS_Edition1_000012.1998100105
```

5.4 PGE Output Files

The output filenames expected to be produced by a processor will be written to the ASCII file. The naming convention will use the Runtime Parameters as the input values to be used in the construction of each output filename.

For example for Subsystem 4.5-6.1P1, a typical output data file would be:

```
SS4.5_Outputfile.1 = CER_SSFB_TRMM-PFM-VIRS_SSIT_000000.1998050101
```

6.0 PCF and ASCII File Generator

An example of an ASCII file, PCFin, is listed in Appendix A. An example PCF and ASCII File Generator script, pcfgen_4.5-6.1P1.csh, for Subsystem 4.5-6.1P1 is located in Appendix B of this bulletin and a copy of the generated PCF file, CER4.5-6.1P1_PCF_TRMM-PFM-VIRS_SSIT_000000.1998050101, is located in Appendix C.

6.1 Customizing the PCF Generator Example

To customize the PCF Generator Example script, provided in this document, for a different PGE, perform the following steps:

- 1) Examine the PCF template for your PGE and identify all variable directory paths, file names, and runtime parameters.

- 2) List all variables identified in Step 1 using a “parameter = value” format (see Section 4.5).
 - A) Modify the PCF and ASCII file generator script to include the runtime parameters, directory paths, and file names required for your PGE
 - B) Set and use environment variables for all variable PCF data.
- 3) Modify the second section of the PCF Generator script to create the PCF, using these environment variables set in Step 2.
- 4) Set environment variable \$PGS_PC_INFO_FILE to the path and name of your PCF template. The PCF Generator script will set \$PCFile to the path and name of the generated PCF.
- 5) Run the PCF Generator script with the data date as a command-line argument. A PCF file and ASCII Input File will be generated.

References

1. Computer Bulletin: CERES Metadata Approach (97-06). URL: http://asd-www.larc.nasa.gov/ceres/sw_bull/bulletins.html

Appendix A: Sample ASCII File

A sample ASCII file is listed below, using the PGE 4.5-6.1P1 requirements.

```
#####
# CERES baseline Metadata
#####
PGENAME      = CER4.5-6.1P1
SamplingStrategy = TRMM-PFM-VIRS
ProductionStrategy = SSIT
CERDataDateYear  = 1998
CERDataDateMonth = 05
CERDataDateDay   = 01  #some PGEs do not have value for data day
CERHrOfMonth     = 05  #some PGEs do not have value for hour of month
CERHrOfDay       = 01  #some PGEs do not have value for hour of day
ConfigurationCode = 000000
SWsccr          = 000
DATAsccr        = 000
Sat_name        = TRMM
Inst_name       = PFM
Imag_name       = VIRS

#####
# PGE specific runtime parameters
#####
Satellite_Instrument = TRMM-PFM  # required by CERESlib routine: qcheader
Ancillary_Data_Set   = VIRS12b_CLR
SP_MODEL_NUM         = 1
RUN_SURF_ALG         = 1
RUN_WrFlux           = 2
TK_Ver               = SCF B.0 TK5.2.6

#####
# PCF required directories
#####
SS4.5_InputDir.1 = /CERES//inversion/data/input
SS4.5_InputDir.2 = /CERES//inversion/data/input
SS4.5_InputDir.3 = /CERES//inversion/data/input
SS4.5_InputDir.4 = /CERES//inversion/data/ancillary/static
SS4.5_InputDir.5 = /CERES//shared_data
SS4.5_InputDir.6 = /CERES//inversion/data/out_comp/data
SS4.5_OutputDir.1 = /CERES//inversion/data/out_comp/data
SS4.5_OutputDir.2 = /CERES//inversion/data/out_comp/QC
SS4.5_LogsDir     = /CERES//inversion/data/runlogs
SS4.5_MCFDir      = /CERES//inversion/rcf
SS4.5_TempDir     = /CERES//inversion/data/scr

#####
# Input file names
#####
SS4.5_Inputfile.1 = CER_SSFI_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Inputfile.2 = CER_FQCI_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Inputfile.3_1 = CER_MOA_CERES_ECMWF-GEOS2_010012.1998050101
```

```

SS4.5_Inputfile.3_2 = CER_MOA_CERES_ECMWF-GEOS2_010012.1998050100
SS4.5_Inputfile.3_3 = CER_MOA_CERES_ECMWF-GEOS2_010012.1998050106
SS4.5_Inputfile.4_1 = IISCOLD.19990525
SS4.5_Inputfile.4_2 = ceres_SI_PFM_day.20000217
SS4.5_Inputfile.4_3 = ceres_SI_PFM_night.20000217
SS4.5_Inputfile.5_1 = CADM_SW_CLR_20000413
SS4.5_Inputfile.5_2 = CADM_LW_CLR_20000413
SS4.5_Inputfile.5_3 = CADM_WN_CLR_20000418
SS4.5_Inputfile.6 = CER_SSFb_TRMM-PFM-VIRS_SSIT_000000.1998050101

```

```
#####
```

```
# Output file names
```

```
#####
```

```

SS4.5_Outputfile.1 = CER_SSFb_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Outputfile.2 = CER_GQCA_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Outputfile.3 = CER_GQCI_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Outputfile.4 = CER_SSF_TRMM-PFM-VIRS_SSIT_000000.1998050101

```

```
#####
```

```
# Log file names
```

```
#####
```

```

SS4.5_Logsfile.1 = CER4.5-6.1P1_LogStatus_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Logsfile.2 = CER4.5-6.1P1_LogReport_TRMM-PFM-VIRS_SSIT_000000.1998050101
SS4.5_Logsfile.3 = CER4.5-6.1P1_LogUser_TRMM-PFM-VIRS_SSIT_000000.1998050101

```

```
#####
```

```
# Temporary file names
```

```
#####
```

```

Get_tempfile = GetAttr.temp.TRMM-PFM-VIRS_SSIT_000000.1998050101
MCF_tempfile = MCFWrite.temp.TRMM-PFM-VIRS_SSIT_000000.1998050101
#

```

Note: Under #PGE specific runtime parameters, I have included some of the Runtime Parameters required by the CERES qchheader CERESlib routine (see below):

```
! Information located on the PCF
```

```
!
```

```

! If any of the following Logical Identifiers are specified in the
! USER DEFINED RUNTIME PARAMETERS section in the PCF
! the corresponding value (3rd field) will be retrieved by the
! WriteHeader CERESlib subroutine and written to the QC report.
!

```

```

! 9991|Subsystem                |4.4/Cookie Cutter
! 9992|CERES ID                 |Cookie Dough
! 9993||Software Version        |2.1
! 9994|EOSDIS ID                |CER11
! 9995|Satellite Instrument     |TRMM-PFM
! 9996|Ancillary Data Set       |GOES-E, Meteosat

```


Appendix B: PCF Generator Example

```
#!/bin/csh -f
#####
# pcfgen_4.5-6.1P1.csh
#
# Inversion script that creates the ASCII input file,
# then creates the PCF file for PGE CER4.5-6.1P1 for use
# during production.
#
# The CERES Inversion environment variable script,
# ENVinversion-env.csh, must be sourced before running
# this script.
#
#####
# The following parameters must be set on the command line:
# $1 is the 4-digit year, the 2-digit month, the 2-digit day and
# the 2-digit data hour of the day of the data
#
# Example: pcfgen_4.5-6.1P1.csh 1997122800
#
# The following environment variables are set by sourcing
# environment file, ENVinversion-env.csh :
# $CCode4_5 - the Configuration Code for Subsystems 4.5 and 4.6
# $CCode4_1 - the Configuration Code for Subsystems 4.1 through 4.4
# $CCode12 - the Configuration Code for Subsystem 12
# $outPS4_5 - Production Strategy for Subsystems 4.5 and 4.6 output files
# $inPS4_1 - Production Strategy for input from Subsystems 4.1 through 4.4
# $inPS12 - Production Strategy for input from Subsystem 12
# $outSS4_5 - Sampling Strategy for Subsystems 4.5 and 4.6 output files
# $inSS4_1 - Sampling Strategy for input from Subsystems 4.1 through 4.4
# $inSS12 - Sampling Strategy for input from Subsystem 12
# $SWsccr4_5 - Software SCCR number for Subsystems 4.5 and 4.6
# $DATAsccr4_5 - Data SCCR number for Subsystems 4.5 and 4.6
#
# Parameter WrFlux is set to control which TOA and surface fluxes are written to
# the SSF HDF product
# Wrflux = 0; no fluxes are written to SSF HDF product
# Wrflux = 1: only fluxes where footprint is clear sky (95-100% clear)
# are written to SSF HDF product
# Wrflux = 2: only fluxes where footprint is clear sky (99.9-100% clear)
# are written to SSF HDF product
# Wrflux = 3: all fluxes are written to SSF HDF product
#####

set PGENam = CER4.5-6.1P1
if ($Instrument == 'PFM') then
    set daytime = ceres_SI_$Instrument\_day.20000217
    set nighttime = ceres_SI_$Instrument\_night.20000217
    set SatInst = TRMM-PFM
else if ($Instrument == 'FM1') then
    set daytime = ceres_SI_$Instrument\_day.20000804
    set nighttime = ceres_SI_$Instrument\_night.20000804
```

```

    set SatInst = Terra-FM1
else if ($Instrument == 'FM2') then
    set daytime = ceres_SI_$Instrument\_day.20000804
    set nighttime = ceres_SI_$Instrument\_night.20000804
    set SatInst = Terra-FM2
else if ($Instrument == 'SIM') then
    set daytime = ceres_SI_PFM_day.20000217
    set nighttime = ceres_SI_PFM_night.20000217
    set SatInst = SIM
endif

set DataDate = $1
set CERYear = 'expr $1 : '\k....\b"'
set CERMon = 'expr $1 : '....\k..\'
set CERDay = 'expr $1 : '.....\k..\'
set CERHrDay = 'expr $1 : '.....\k..\'
#
set AncData = VIRS12b_CLR
set SP_MODEL = 1
set SURF_ALG = 1
set WrFlux = 2

@ temp1 = ((($CERDay - 1) * 24) + $CERHrDay + 1)
set CERHrMon = $temp1

#####
# Create additional environment variables
#####
set INSTANCE_inv = $outSS4_5\_outPS4_5\_CCCode4_5\_CERYear$CERMon$CERDay$CERHrDay
set INSTANCE_cld = $inSS4_1\_inPS4_1\_CCCode4_1\_CERYear$CERMon$CERDay$CERHrDay
set INSTANCE_moa = $inSS12\_inPS12\_CCCode12\_CERYear$CERMon$CERDay$CERHrDay
set LogS = "_LogStatus_"
set LogR = "_LogReport_"
set LogU = "_LogUser_"
if ( -e $CERESHOME/inversion/rcf/$PGENam\_PCFin_$INSTANCE_inv )
m $CERESHOME/inversion/rcf/$PGENamPCFin$INSTANCE_inv
touch $CERESHOME/inversion/rcf/$PGENamPCFin$INSTANCE_inv
set pcf_input = $CERESHOME/inversion/rcf/$PGENamPCFin$INSTANCE_inv

#####
# *** Set YYYY, MM, and DD as the integer values for the character input
# Define last day of each month
#####
set YYYY = 'expr $CERYear'
set MM = 'expr $CERMon'
set DD = 'expr $CERDay'
@ iday = $DD + 0
@ imonth = $MM + 0
@ iyear = $YYYY + 0

set days_per_month = ( 31 28 31 30 31 30 31 31 30 31 30 31)
@ leapyear = $YYYY % 4
if ( $leapyear == 0) then

```

```

    set days_per_month[2] = 29
endif
#####
# *** Check day and month
#####
if ( $month > 12) then
    echo "Incorrect MONTH entered"
    exit 200
endif
if ( $day > $days_per_month[$month]) then
    echo "Incorrect DAY entered"
    exit 200
endif

#####
# *** Build MOA file names for temporal interpolation
#####
if ($CERHrDay == 00 || $CERHrDay == 06 || $CERHrDay == 12 || $CERHrDay == 18) then
    set MOA_INSTANCEA = $INSTANCE_moa
    set MOA_INSTANCEB = $INSTANCE_moa
else if ($CERHrDay > 00 && $CERHrDay < 18) then
    if ($CERHrDay > 00 && $CERHrDay < 06) then
        set CERHourA = "00"
        set CERHourB = "06"
        set MOA_INSTANCEA = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourA
        set MOA_INSTANCEB = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourB
    else if ($CERHrDay > 06 && $CERHrDay < 12) then
        set CERHourA = "06"
        set CERHourB = "12"
        set MOA_INSTANCEA = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourA
        set MOA_INSTANCEB = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourB
    else if ($CERHrDay > 12 && $CERHrDay < 18) then
        set CERHourA = "12"
        set CERHourB = "18"
        set MOA_INSTANCEA = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourA
        set MOA_INSTANCEB = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourB
    endif
else if ($CERHrDay > 18 && $CERHrDay < 24) then
    set CERHourA = "18"
    set CERHourB = "00"
    set MOA_INSTANCEA = $inSS12\_inPS12\_CCCode12\.$CERYear$CERMon$CERDay$CERHourA

#####
# Define data date for MOA_INSTANCEB
# Set MM, and DD as the integer values for the character inputs
#####
set MM = `expr $CERMon`
set DD = `expr $CERDay`

#####
# Initialize date for MOA_INSTANCEB and flags
#####
set CERYearB = $CERYear
set CERMonB = $CERMon

```

```
set incr_year = 'N'
set incr_month = 'N'
```

```
#####
```

```
# *** Determine Next Day
```

```
#####
```

```
@ nday = $iday + 1
```

```
if ( $iday == $days_per_month[$imonth]) then
```

```
    set nday = 1
```

```
    set CERDayB = 0$nday
```

```
    set incr_month = 'Y'
```

```
else if ( $nday < 10) then
```

```
    set CERDayB = 0$nday
```

```
else
```

```
    set CERDayB = $nday
```

```
endif
```

```
if ($incr_month == 'Y') then
```

```
#####
```

```
# *** Determine Next Month
```

```
#####
```

```
if ( $imonth == 12) then
```

```
    set nmonth = 1
```

```
    set CERMonB = 0$nmonth
```

```
    set incr_year = 'Y'
```

```
else if ( $imonth < 10) then
```

```
    @ nmonth = $imonth + 1
```

```
    set CERMonB = 0$nmonth
```

```
else
```

```
    @ nmonth = $imonth + 1
```

```
    set CERMonB = $nmonth
```

```
endif
```

```
if ( $incr_year == 'Y') then
```

```
#####
```

```
# *** Determine Next Year
```

```
#####
```

```
@ nYYYY = $YYYY + 1
```

```
set CERYearB = $nYYYY
```

```
endif
```

```
endif
```

```
set MOA_INSTANCEB = $inSS12\_ $inPS12\_ $CCode12\. $CERYearB$CERMonB$CERDayB$CERHourB
```

```
else
```

```
    echo ' hour number should be 00-23, hour entered was = ' $CERHrDay
```

```
    exit 200
```

```
endif
```

```
#####
```

```
# Create the ASCII input file for PCF generator
```

```
#####
```

```

echo "#####" >> $pcf_input
echo "# CERES baseline Metadata" >> $pcf_input
echo "#####" >> $pcf_input
echo "PGENAME      = $PGENam" >> $pcf_input
echo "SamplingStrategy = $outSS4_5" >> $pcf_input
echo "ProductionStrategy = $outPS4_5" >> $pcf_input
echo "CERDataDateYear   = $CERYear" >> $pcf_input
echo "CERDataDateMonth  = $CERMon" >> $pcf_input
echo "CERDataDateDay    = $CERDay" >> $pcf_input
echo "CERHrOfMonth      = $CERHrMon" >> $pcf_input
echo "CERHrOfDay        = $CERHrDay" >> $pcf_input
echo "ConfigurationCode = $CCode4_5" >> $pcf_input
echo "SWsccr            = $SWsccr4_5" >> $pcf_input
echo "DATAsccr          = $DATAsccr4_5" >> $pcf_input
echo "Sat_name          = $Satellite" >> $pcf_input
echo "Inst_name         = $Instrument" >> $pcf_input
echo "Imag_name         = $Imager" >> $pcf_input
echo "" >> $pcf_input
echo "#####" >> $pcf_input
echo "# PGE specific runtime parameters" >> $pcf_input
echo "#####" >> $pcf_input
echo "Satellite_Instrument = $SatInst" >> $pcf_input
echo "Ancillary_Data_Set   = $AncData" >> $pcf_input
echo "SP_MODEL_NUM         = $SP_MODEL" >> $pcf_input
echo "RUN_SURF_ALG         = $SURF_ALG" >> $pcf_input
echo "RUN_WrFlux           = $WrFlux" >> $pcf_input
echo "TK_Ver               = SCF B.0 TK5.2.6" >> $pcf_input
echo "" >> $pcf_input
echo "#####" >> $pcf_input
echo "# PCF required directories" >> $pcf_input
echo "#####" >> $pcf_input
echo "SS4.5_InputDir.1 = $CERESHOME/clouds/data/out_comp/data/SSF_Int" >> $pcf_input
echo "SS4.5_InputDir.2 = $CERESHOME/clouds/data/out_comp/QA_Reports" >> $pcf_input
echo "SS4.5_InputDir.3 = $CERESHOME/sarb/data/out_comp/data/regridmoa" >> $pcf_input
echo "SS4.5_InputDir.4 = $CERESHOME/inversion/data/ancillary/static" >> $pcf_input
echo "SS4.5_InputDir.5 = $CERESHOME/shared_data" >> $pcf_input
echo "SS4.5_InputDir.6 = $CERESHOME/inversion/data/out_comp/data" >> $pcf_input
echo "SS4.5_OutputDir.1 = $CERESHOME/inversion/data/out_comp/data" >> $pcf_input
echo "SS4.5_OutputDir.2 = $CERESHOME/inversion/data/out_comp/QC" >> $pcf_input
echo "SS4.5_LogsDir     = $CERESHOME/inversion/data/runlogs" >> $pcf_input
echo "SS4.5_MCFDir      = $CERESHOME/inversion/rcf" >> $pcf_input
echo "SS4.5_TempDir      = $CERESHOME/inversion/data/scr" >> $pcf_input
echo "" >> $pcf_input
echo "#####" >> $pcf_input
echo "# Input file names" >> $pcf_input
echo "#####" >> $pcf_input
echo "SS4.5_Inputfile.1 = CER_SSFI_$INSTANCE_cld" >> $pcf_input
echo "SS4.5_Inputfile.2 = CER_FQCI_$INSTANCE_cld" >> $pcf_input
echo "SS4.5_Inputfile.3_1 = CER_MOA_$INSTANCE_moa" >> $pcf_input
echo "SS4.5_Inputfile.3_2 = CER_MOA_$MOA_INSTANCEA" >> $pcf_input
echo "SS4.5_Inputfile.3_3 = CER_MOA_$MOA_INSTANCEB" >> $pcf_input
echo "SS4.5_Inputfile.4_1 = IISCOLD.19990525" >> $pcf_input
echo "SS4.5_Inputfile.4_2 = $daytime" >> $pcf_input
echo "SS4.5_Inputfile.4_3 = $nighttime" >> $pcf_input

```

```

echo "SS4.5_Inputfile.5_1 = CADM_SW_CLR_20000413"      >> $pcf_input
echo "SS4.5_Inputfile.5_2 = CADM_LW_CLR_20000413"      >> $pcf_input
echo "SS4.5_Inputfile.5_3 = CADM_WN_CLR_20000418"      >> $pcf_input
echo "SS4.5_Inputfile.6 = CER_SFB_$INSTANCE_inv"       >> $pcf_input
echo ""                                                 >> $pcf_input
echo "#####"                                           >> $pcf_input
echo "# Output file names"                             >> $pcf_input
echo "#####"                                           >> $pcf_input
echo "SS4.5_Outputfile.1 = CER_SFB_$INSTANCE_inv"      >> $pcf_input
echo "SS4.5_Outputfile.2 = CER_GQCA_$INSTANCE_inv"     >> $pcf_input
echo "SS4.5_Outputfile.3 = CER_GQCI_$INSTANCE_inv"     >> $pcf_input
echo "SS4.5_Outputfile.4 = CER_SSF_$INSTANCE_inv"      >> $pcf_input
echo ""                                                 >> $pcf_input
echo "#####"                                           >> $pcf_input
echo "# Log file names"                                >> $pcf_input
echo "#####"                                           >> $pcf_input
echo ""                                                 >> $pcf_input
echo "SS4.5_Logsfile.1 = $PGENam$LogS$INSTANCE_inv"    >> $pcf_input
echo "SS4.5_Logsfile.2 = $PGENam$LogR$INSTANCE_inv"    >> $pcf_input
echo "SS4.5_Logsfile.3 = $PGENam$LogU$INSTANCE_inv"    >> $pcf_input
echo ""                                                 >> $pcf_input
echo "#####"                                           >> $pcf_input
echo "# Temporary file names"                          >> $pcf_input
echo "#####"                                           >> $pcf_input
echo ""                                                 >> $pcf_input
echo "Get_tempfile = GetAttr.temp.$INSTANCE_inv"       >> $pcf_input
echo "MCF_tempfile = MCFWrite.temp.$INSTANCE_inv"      >> $pcf_input
echo $pcf_input

```

```

#set filename = $CERESHOME/inversion/rcf/$argv[1]
set filename = $pcf_input

```

```

#####
# This section sets the required environment variables using values
# that are retrieved from the "parameter = value" entries of the ASCII
# file. Using the example ASCII file, parameter $Sampling_Strategy
# gets the value "TRMM-PFM" and parameter $Prod_Strategy gets the value
# "PreFlight"
#####

```

```

set PGENAME = 'grep "PGENAME" $filename | awk '{print $3}' "
set Sampling_Strategy = 'grep "SamplingStrategy" $filename | awk '{print $3}' "
set Prod_Strategy = 'grep "ProductionStrategy" $filename | awk '{print $3}' "
set DataYear = 'grep "CERDataDateYear" $filename | awk '{print $3}' "
set DataMonth = 'grep "CERDataDateMonth" $filename | awk '{print $3}' "
set DataDay = 'grep "CERDataDateDay" $filename | awk '{print $3}' "
set HrofMonth = 'grep "CERHrOfMonth" $filename | awk '{print $3}' "
set DataHr = 'grep "CERHrOfDay" $filename | awk '{print $3}' "
set CC_Code = 'grep "ConfigurationCode" $filename | awk '{print $3}' "
set Software_SCCR = 'grep "SWsccr" $filename | awk '{print $3}' "
set Ancillary_SCCR = 'grep "DATAsccr" $filename | awk '{print $3}' "
set Satellite = 'grep "Sat_name" $filename | awk '{print $3}' "
set Instrument = 'grep "Inst_name" $filename | awk '{print $3}' "
set Imager = 'grep "Imag_name" $filename | awk '{print $3}' "

```

```

set SatInt = 'grep "Satellite_Instrument" $filename | awk '{print $3}' "
set AncDataSet = 'grep "Ancillary_Data_Set" $filename | awk '{print $3}' "
set SP_Model = 'grep "SP_MODEL_NUM" $filename | awk '{print $3}' "
set Surf_Alg = 'grep "RUN_SURF_ALG" $filename | awk '{print $3}' "
set WrFlux = 'grep "RUN_WrFlux" $filename | awk '{print $3}' "
set TKVer = 'grep "TK_Ver" $filename | awk '{print $3,$4,$5}' "

set InDir1 = 'grep "SS4.5_InputDir.1" $filename | awk '{print $3}' "
set InDir2 = 'grep "SS4.5_InputDir.2" $filename | awk '{print $3}' "
set InDir3 = 'grep "SS4.5_InputDir.3" $filename | awk '{print $3}' "
set InDir4 = 'grep "SS4.5_InputDir.4" $filename | awk '{print $3}' "
set InDir5 = 'grep "SS4.5_InputDir.5" $filename | awk '{print $3}' "
set InDir6 = 'grep "SS4.5_InputDir.6" $filename | awk '{print $3}' "
set OutDir1 = 'grep "SS4.5_OutputDir.1" $filename | awk '{print $3}' "
set OutDir2 = 'grep "SS4.5_OutputDir.2" $filename | awk '{print $3}' "
set LogsDir = 'grep "SS4.5_LogsDir" $filename | awk '{print $3}' "
set Temp_File_Dir = 'grep "SS4.5_TempDir" $filename | awk '{print $3}' "
set G_tempfile = 'grep "Get_tempfile" $filename | awk '{print $3}' "
set M_tempfile = 'grep "MCF_tempfile" $filename | awk '{print $3}' "

set MCFDir = 'grep "SS4.5_MCFDir" $filename | awk '{print $3}' "

set inputfile1 = 'grep "SS4.5_Inputfile.1" $filename | awk '{print $3}' "
set inputfile2 = 'grep "SS4.5_Inputfile.2" $filename | awk '{print $3}' "
#set inputfile3 = 'grep "SS4.5_Inputfile.3" $filename | awk '{print $3}' "
set inputfile3_1 = 'grep "SS4.5_Inputfile.3_1" $filename | awk '{print $3}' "
set inputfile3_2 = 'grep "SS4.5_Inputfile.3_2" $filename | awk '{print $3}' "
set inputfile3_3 = 'grep "SS4.5_Inputfile.3_3" $filename | awk '{print $3}' "
set inputfile4_1 = 'grep "SS4.5_Inputfile.4_1" $filename | awk '{print $3}' "
set inputfile4_2 = 'grep "SS4.5_Inputfile.4_2" $filename | awk '{print $3}' "
set inputfile4_3 = 'grep "SS4.5_Inputfile.4_3" $filename | awk '{print $3}' "
set inputfile5_1 = 'grep "SS4.5_Inputfile.5_1" $filename | awk '{print $3}' "
set inputfile5_2 = 'grep "SS4.5_Inputfile.5_2" $filename | awk '{print $3}' "
set inputfile5_3 = 'grep "SS4.5_Inputfile.5_3" $filename | awk '{print $3}' "
set inputfile6 = 'grep "SS4.5_Inputfile.6" $filename | awk '{print $3}' "
set outputfile1 = 'grep "SS4.5_Outputfile.1" $filename | awk '{print $3}' "
set outputfile2 = 'grep "SS4.5_Outputfile.2" $filename | awk '{print $3}' "
set outputfile3 = 'grep "SS4.5_Outputfile.3" $filename | awk '{print $3}' "
set outputfile4 = 'grep "SS4.5_Outputfile.4" $filename | awk '{print $3}' "

set logfile1 = 'grep "SS4.5_Logsfile.1" $filename | awk '{print $3}' "
set logfile2 = 'grep "SS4.5_Logsfile.2" $filename | awk '{print $3}' "
set logfile3 = 'grep "SS4.5_Logsfile.3" $filename | awk '{print $3}' "

#####
# Set $PCFile to the path and name of the PCF generated by this script
#####

set RUN = $Sampling_Strategy$Prod_Strategy$CC_Code`$DataYear$DataMonth$DataDay$DataHr
set PCFile = $MCFDir/$PGNamePCF$RUN

#####
# The following section creates the PCF file
#####

```

```

echo "#"                                >> $PCFile
echo "# Process Control File: CER4.5-6.1P1_PCF_$RUN " >> $PCFile
echo "# "                                >> $PCFile
echo "# ===== "                       >> $PCFile
echo "? SYSTEM RUNTIME PARAMETERS "      >> $PCFile
echo "# ===== "                       >> $PCFile
echo "# ----- "                        >> $PCFile
echo "# Production Run ID - unique production instance identifier" >> $PCFile
echo "# ----- "                        >> $PCFile
echo "1"                                >> $PCFile
echo "# ----- "                        >> $PCFile
echo "# Software ID - unique software configuration identifier " >> $PCFile
echo "# ----- "                        >> $PCFile
echo "1"                                >> $PCFile
echo "# ===== "                       >> $PCFile
echo "? PRODUCT INPUT FILES "            >> $PCFile
echo "# ===== "                       >> $PCFile
echo "# Next non-comment line is the default location for PRODUCT INPUT FILES " >> $PCFile
echo "# WARNING! DO NOT MODIFY THIS LINE unless you have relocated these" >> $PCFile
echo "# data set files to the location specified by the new setting." >> $PCFile
echo "! ~/runtime"                       >> $PCFile
echo "# "                                >> $PCFile
echo "# ----- "                        >> $PCFile
echo "# Inversion input files"            >> $PCFile
echo "# ----- "                        >> $PCFile
echo "# "                                >> $PCFile
echo "# "                                >> $PCFile
echo "101|$inputfile1|$InDir1|||1"       >> $PCFile
echo "112|$inputfile2|$InDir2|||1"       >> $PCFile
#echo "102|$inputfile3|$InDir3|||1"      >> $PCFile
echo "102|$inputfile3_1|$InDir3|||1"      >> $PCFile
echo "102|$inputfile3_2|$InDir3|||2"      >> $PCFile
echo "102|$inputfile3_3|$InDir3|||3"      >> $PCFile
echo "122|$inputfile6|$InDir6|||1"       >> $PCFile
echo "# "                                >> $PCFile
#
echo "# (DO NOT REMOVE THESE TWO ENTRIES)" >> $PCFile
echo "701|SSFB.MCF|$MCFDir|||1"           >> $PCFile
echo "702|GQCA.MCF|$MCFDir|||1"           >> $PCFile
echo "703|GQCI.MCF|$MCFDir|||1"           >> $PCFile
echo "704|SSF.MCF|$MCFDir|||1"           >> $PCFile
#
echo "10252|$G_tempfile|$Temp_File_Dir|||1" >> $PCFile
echo "10254|$M_tempfile|$Temp_File_Dir|||1" >> $PCFile
echo "# "                                >> $PCFile
echo "# ===== "                       >> $PCFile
echo "? PRODUCT OUTPUT FILES "            >> $PCFile
echo "# ===== "                       >> $PCFile
echo "! ~/runtime"                       >> $PCFile
echo "# "                                >> $PCFile
echo "# ----- "                        >> $PCFile
echo "# Inversion output files"            >> $PCFile
echo "# ----- "                        >> $PCFile

```



```

echo "#"                                >> $PCFile
echo "201|$outputfile1|$OutDir1||||1"  >> $PCFile
echo "202|$outputfile2|$OutDir2||||1"  >> $PCFile
echo "203|$outputfile3|$OutDir2||||1"  >> $PCFile
echo "204|$outputfile4|$OutDir1||||1"  >> $PCFile
echo "#"                                >> $PCFile
echo "# ===== "                      >> $PCFile
echo "? SUPPORT INPUT FILES "           >> $PCFile
echo "# ===== "                      >> $PCFile
echo "! ~/runtime"                      >> $PCFile
echo "#"                                >> $PCFile
echo "104|$inputfile4_1|$InDir4||||1"  >> $PCFile
echo "61|$inputfile4_2|$InDir4||||1"  >> $PCFile
echo "62|$inputfile4_3|$InDir4||||1"  >> $PCFile
echo "107|$inputfile5_1|$InDir4||||1"  >> $PCFile
echo "108|$inputfile5_2|$InDir4||||1"  >> $PCFile
echo "109|$inputfile5_3|$InDir4||||1"  >> $PCFile
echo "#"                                >> $PCFile
echo "#"                                >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# leap seconds (TAI-UTC) file (DO NOT REMOVE THIS ENTRY) " >> $PCFile
echo "# ----- "                       >> $PCFile
echo "10301|leapsec.dat|$PGSDIR"/database/common/TD||||1" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# polar motion and UTC-UT1 file (DO NOT REMOVE THIS ENTRY) " >> $PCFile
echo "# ----- "                       >> $PCFile
echo "10401|utcpole.dat|$PGSDIR"/database/common/CSC||||1" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# earth model tags file (DO NOT REMOVE THIS ENTRY)" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "10402|earthfigure.dat|$PGSDIR"/database/common/CSC||||1" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# JPL planetary ephemeris file (binary form) (DO NOT REMOVE THIS ENTRY) " >> $PCFile
echo "# ----- "                       >> $PCFile
echo "10601|de200.eos|$PGSDIR"/database/$BRAND/CBP||||1" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# spacecraft tag definition file (DO NOT REMOVE THIS ENTRY)" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "10801|sc_tags.dat|$PGSDIR"/database/common/EPH||||1" >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# units conversion definition file (DO NOT REMOVE THIS ENTRY) " >> $PCFile
echo "# ----- "                       >> $PCFile
echo "10302|udunits.dat|$PGSDIR"/database/common/CUC||||1" >> $PCFile
echo "#"                                >> $PCFile
echo "# ===== "                      >> $PCFile
echo "? SUPPORT OUTPUT FILES "          >> $PCFile
echo "# ===== "                      >> $PCFile
echo "! ~/runtime"                      >> $PCFile
echo "#"                                >> $PCFile
echo "# "                                >> $PCFile
echo "# ----- "                       >> $PCFile
echo "# These files support the SMF log functionality. Each run will cause " >> $PCFile
echo "# status information to be written to 1 or more of the Log files. To " >> $PCFile
echo "# simulate DAAC operations, remove the 3 Logfiles between test runs. " >> $PCFile

```

```

echo "# Remember: all executables within a PGE will contribute status data to " >> $PCFile
echo "# the same batch of log files. (DO NOT REMOVE THESE ENTRIES) " >> $PCFile
echo "# -----" >> $PCFile
echo "10100|logfile1|$LogsDir|||1" >> $PCFile
echo "10101|logfile2|$LogsDir|||1" >> $PCFile
echo "10102|logfile3|$LogsDir|||1" >> $PCFile
echo "10103|TmpStatus|||1" >> $PCFile
echo "10104|TmpReport|||1" >> $PCFile
echo "10105|TmpUser|||1" >> $PCFile
echo "10110|MailFile|||1" >> $PCFile
echo "10111|ShmMem|||1" >> $PCFile
echo "# >> $PCFile
echo "# =====>> $PCFile
echo "# ? USER DEFINED RUNTIME PARAMETERS" >> $PCFile
echo "# =====>> $PCFile
echo "# >> $PCFile
echo "141|PGENAME|""$PGENAME"" >> $PCFile
echo "142|SamplingStrategy|""$Sampling_Strategy"" >> $PCFile
echo "143|ProductionStrategyOUTPUT|""$Prod_Strategy"" >> $PCFile
echo "144|CERDataDateYear|""$DataYear"" >> $PCFile
echo "145|CERDataDateMonth|""$DataMonth"" >> $PCFile
echo "146|CERDataDateDay|""$DataDay"" >> $PCFile
echo "147|CERHrOfMonth|""$HrofMonth"" >> $PCFile
echo "148|ConfigurationCode|""$CC_Code"" >> $PCFile
echo "149|SWsccr|""$Software_SCCR"" >> $PCFile
echo "150|DATAscrr|""$Ancillary_SCCR"" >> $PCFile
echo "151|CERHrOfDay|""$DataHr"" >> $PCFile
echo "152|Platform|""$Satellite"" >> $PCFile
echo "153|Instrument|""$Instrument"" >> $PCFile
echo "154|Imager|""$Imager"" >> $PCFile
echo "# >> $PCFile
echo "# =====>> $PCFile
echo "# END METADATA WRAPPER INFORMATION" >> $PCFile
echo "# =====>> $PCFile
echo "# >> $PCFile
echo "155|RUN_WrFlux|$WrFlux" >> $PCFile
echo "601|SP_MODEL_NUM|$SP_Model" >> $PCFile
echo "602|RUN_SURF_ALG|$Surf_Alg" >> $PCFile
echo "9991|Subsystem|4.5-6/Inversion" >> $PCFile
echo "9992|CERES ID|SSF" >> $PCFile
echo "9993|Software Version|$Software_SCCR" >> $PCFile
echo "9994|EOSDIS ID|CER11" >> $PCFile
echo "9995|Satellite Intrument|$SatInt" >> $PCFile
echo "9996|Ancillary Data Set|$AncDataSet" >> $PCFile
echo "# >> $PCFile
echo "801|$outfile1.met|201:1" >> $PCFile
echo "802|$outfile2.met|202:1" >> $PCFile
echo "803|$outfile3.met|203:1" >> $PCFile
echo "804|$outfile4.met|204:1" >> $PCFile
echo "# >> $PCFile
echo "# -----" >> $PCFile
echo "# These parameters are required to support the PGS_SMF_Send...() tools. " >> $PCFile
echo "# If the first parameter (TransmitFlag) is disabled, then none of the " >> $PCFile
echo "# other parameters need to be set. By default, this functionality has been" >> $PCFile

```

```

echo "# disabled. To enable, set TransmitFlag to 1 and supply the other 3 " >> $PCFile
echo "# parameters with local information. (DO NOT REMOVE THESE ENTRIES) " >> $PCFile
echo "# -----" >> $PCFile
echo "10109|TransmitFlag; 1=transmit,0=disable|0" >> $PCFile
echo "10106|RemoteHost|sandcrab" >> $PCFile
echo "10107|RemotePath|usr/kwan/test/PC/data" >> $PCFile
echo "10108|EmailAddresses|t.f.fan@larc.nasa.gov" >> $PCFile
echo "# -----" >> $PCFile
echo "# The following runtime parameters define various logging options." >> $PCFile
echo "# Parameters described as lists should be space (i.e. ' ') separated." >> $PCFile
echo "# The logical IDs 10117, 10118, 10119 listed below are for OPTIONAL" >> $PCFile
echo "# control of SMF logging. Any of these logical IDs which is unused by a " >> $PCFile
echo "# PGE may be safely commented out (e.g. if logging is not disabled for " >> $PCFile
echo "# any status level, then the line beginning 10117 may be commented out). " >> $PCFile
echo "# -----" >> $PCFile
echo "10114|Logging Control; 0=disable logging, 1=enable logging|1" >> $PCFile
echo "10115|Trace Control; 0=no trace, 1=error trace, 2=full trace|0" >> $PCFile
echo "10116|Process ID logging; 0=don't log PID, 1=log PID|0" >> $PCFile
echo "#10117|Disabled status level list (e.g. W S F)|" >> $PCFile
echo "#10118|Disabled seed list|" >> $PCFile
echo "#10119|Disabled status code list|" >> $PCFile
echo "# " >> $PCFile
echo "# -----" >> $PCFile
echo "# Toolkit version for which this PCF was intended." >> $PCFile
echo "# DO NOT REMOVE THIS VERSION ENTRY! " >> $PCFile
echo "# -----" >> $PCFile
echo "10220|Toolkit version string|$TKVer" >> $PCFile
echo "# -----" >> $PCFile
echo "# ECS DPS trigger for PGE debug runs " >> $PCFile
echo "# NOTICE TO PGE DEVELOPERS: PGEs which have a debug mode " >> $PCFile
echo "# need to examine this parameter to evaluate activation rule " >> $PCFile
echo "# (DO NOT REMOVE THIS ENTRY) " >> $PCFile
echo "# -----" >> $PCFile
echo "10911|ECS DEBUG; 0=normal, 1=debug|0" >> $PCFile
echo "# " >> $PCFile
echo "# -----" >> $PCFile
echo "# This entry defines the IP address of the processing host and is used " >> $PCFile
echo "# by the Toolkit when generating unique Intermediate and Temporary file " >> $PCFile
echo "# names. The Toolkit no longer relies on the PGS_HOST_PATH environment " >> $PCFile
echo "# variable to obtain this information. (DO NOT REMOVE THIS ENTRY) " >> $PCFile
echo "# -----" >> $PCFile
echo "10099|Local IP Address of 'ether'|155.157.31.87" >> $PCFile
echo "# " >> $PCFile
echo "# " >> $PCFile
echo "10112|Event logging is turned on|1" >> $PCFile
echo "# " >> $PCFile
echo "# " >> $PCFile
echo "# ===== " >> $PCFile
echo "? INTERMEDIATE INPUT " >> $PCFile
echo "# ===== " >> $PCFile
echo "! ~/runtime" >> $PCFile
echo "# " >> $PCFile
echo "# " >> $PCFile
echo "# ===== " >> $PCFile

```

```
echo "? INTERMEDIATE OUTPUT "
echo "# ===== "
echo "! ~/runtime"
echo "#"
echo "#"
echo "# ===== "
echo "? TEMPORARY I/O "
echo "# ===== "
echo "! ~/runtime"
echo "#"
echo "#"
echo "? END"
```

```
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
>> $PCFile
```

Appendix C: PCF Example

```
#
# Process Control File: CER4.5-6.1P1_PCF_TRMM-PFM-VIRS_SSIT_000000.1998050101
#
# =====
# ? SYSTEM RUNTIME PARAMETERS
# =====
# -----
# Production Run ID - unique production instance identifier
# -----
1
# -----
# Software ID - unique software configuration identifier
# -----
1
# =====
# ? PRODUCT INPUT FILES
# =====
# Next non-comment line is the default location for PRODUCT INPUT FILES
# WARNING! DO NOT MODIFY THIS LINE unless you have relocated these
# data set files to the location specified by the new setting.
! ~/runtime
#
# -----
# Inversion input files
# -----
#
#
101|CER_SSFI_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/input|||1
112|CER_FQCI_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/input|||1
102|CER_MOA_CERES_ECMWF-GEOS2_010012.1998050101|/CERES//inversion/data/input|||1
102|CER_MOA_CERES_ECMWF-GEOS2_010012.1998050100|/CERES//inversion/data/input|||2
102|CER_MOA_CERES_ECMWF-GEOS2_010012.1998050106|/CERES//inversion/data/input|||3
122|CER_SSFB_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/out_comp/data|||1
#
# (DO NOT REMOVE THESE TWO ENTRIES)
701|SSFB.MCF|/CERES//inversion/rcf|||1
702|GQCA.MCF|/CERES//inversion/rcf|||1
703|GQCI.MCF|/CERES//inversion/rcf|||1
704|SSF.MCF|/CERES//inversion/rcf|||1
10252|GetAttr.temp.TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/scr|||1
10254|MCFWrite.temp.TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/scr|||1
#
# =====
# ? PRODUCT OUTPUT FILES
# =====
! ~/runtime
#
# -----
# Inversion output files
# -----
#
```

```

201|CER_SSFB_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/out_comp/data|||1
202|CER_GQCA_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/out_comp/QC|||1
203|CER_GQCI_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/out_comp/QC|||1
204|CER_SSF_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/out_comp/data|||1
#
# =====
? SUPPORT INPUT FILES
# =====
! ~/runtime
#
104|IISCOLD.19990525|/CERES//inversion/data/ancillary/static|||1
61|ceres_SI_PFM_day.20000217|/CERES//inversion/data/ancillary/static|||1
62|ceres_SI_PFM_night.20000217|/CERES//inversion/data/ancillary/static|||1
107|CADM_SW_CLR_20000413|/CERES//inversion/data/ancillary/static|||1
108|CADM_LW_CLR_20000413|/CERES//inversion/data/ancillary/static|||1
109|CADM_WN_CLR_20000418|/CERES//inversion/data/ancillary/static|||1
#
#
# -----
# leap seconds (TAI-UTC) file (DO NOT REMOVE THIS ENTRY)
# -----
10301|leapsec.dat|/opt/net/TOOLKIT/database/common/TD|||1
# -----
# polar motion and UTC-UT1 file (DO NOT REMOVE THIS ENTRY)
# -----
10401|utcpole.dat|/opt/net/TOOLKIT/database/common/CSC|||1
# -----
# earth model tags file (DO NOT REMOVE THIS ENTRY)
# -----
10402|earthfigure.dat|/opt/net/TOOLKIT/database/common/CSC|||1
# -----
# JPL planetary ephemeris file (binary form) (DO NOT REMOVE THIS ENTRY)
# -----
10601|de200.eos|/opt/net/TOOLKIT/database/sgi64/CBP|||1
# -----
# spacecraft tag definition file (DO NOT REMOVE THIS ENTRY)
# -----
10801|sc_tags.dat|/opt/net/TOOLKIT/database/common/EPH|||1
# -----
# units conversion definition file (DO NOT REMOVE THIS ENTRY)
# -----
10302|udunits.dat|/opt/net/TOOLKIT/database/common/CUC|||1
#
# =====
? SUPPORT OUTPUT FILES
# =====
! ~/runtime
#
#
# -----
# These files support the SMF log functionality. Each run will cause
# status information to be written to 1 or more of the Log files. To
# simulate DAAC operations, remove the 3 Logfiles between test runs.
# Remember: all executables within a PGE will contribute status data to

```

```

# the same batch of log files. (DO NOT REMOVE THESE ENTRIES)
# -----
10100|CER4.5-6.1P1_LogStatus_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/runlogs|||1
10101|CER4.5-6.1P1_LogReport_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/runlogs|||1
10102|CER4.5-6.1P1_LogUser_TRMM-PFM-VIRS_SSIT_000000.1998050101|/CERES//inversion/data/runlogs|||1
10103|TmpStatus|||1
10104|TmpReport|||1
10105|TmpUser|||1
10110|MailFile|||1
10111|ShmMem|||1
#
# =====
? USER DEFINED RUNTIME PARAMETERS
# =====
#
141|PGENAME|"CER4.5-6.1P1"
142|SamplingStrategy|"TRMM-PFM-VIRS"
143|ProductionStrategyOUTPUT|"SSIT"
144|CERDataDateYear|"1998"
145|CERDataDateMonth|"05"
146|CERDataDateDay|"01"
147|CERHrOfMonth|"2"
148|ConfigurationCode|"000000"
149|SWsccl|"000"
150|DATAsccl|"000"
151|CERHrOfDay|"01"
152|Platform|"TRMM"
153|Instrument|"PFM"
154|Imager|"VIRS"
#
# =====
# END METADATA WRAPPER INFORMATION
# =====
#
155|RUN_WrFlux|2
601|SP_MODEL_NUM|1
602|RUN_SURF_ALG|1
9991|Subsystem|4.5-6/Inversion
9992|CERES ID|SSF
9993|Software Version|000
9994|EOSDIS ID|CER11
9995|Satellite Intrument|TRMM/PFM
9996|Ancillary Data Set|VIRS12b_CLR
#
801|CER_SSF TRMM-PFM-VIRS_SSIT_000000.1998050101.met|201:1
802|CER_GQCA_TRMM-PFM-VIRS_SSIT_000000.1998050101.met|202:1
803|CER_GQCI_TRMM-PFM-VIRS_SSIT_000000.1998050101.met|203:1
804|CER_SSF_TRMM-PFM-VIRS_SSIT_000000.1998050101.met|204:1
#
# -----
# These parameters are required to support the PGS_SMF_Send...() tools.
# If the first parameter (TransmitFlag) is disabled, then none of the
# other parameters need to be set. By default, this functionality has been
# disabled. To enable, set TransmitFlag to 1 and supply the other 3

```

```

# parameters with local information. (DO NOT REMOVE THESE ENTRIES)
# -----
10109|TransmitFlag; 1=transmit,0=disable|0
10106|RemoteHost|sandcrab
10107|RemotePath|usr/kwan/test/PC/data
10108|EmailAddresses|t.f.fan@larc.nasa.gov
# -----
# The following runtime parameters define various logging options.
# Parameters described as lists should be space (i.e. ) separated.
# The logical IDs 10117, 10118, 10119 listed below are for OPTIONAL
# control of SMF logging. Any of these logical IDs which is unused by a
# PGE may be safely commented out (e.g. if logging is not disabled for
# any status level, then the line beginning 10117 may be commented out).
# -----
10114|Logging Control; 0=disable logging, 1=enable logging|1
10115|Trace Control; 0=no trace, 1=error trace, 2=full trace|0
10116|Process ID logging; 0=don't log PID, 1=log PID|0
#10117|Disabled status level list (e.g. W S F)|
#10118|Disabled seed list|
#10119|Disabled status code list|
#
# -----
# Toolkit version for which this PCF was intended.
# DO NOT REMOVE THIS VERSION ENTRY!
# -----
10220|Toolkit version string|SCF B.0 TK5.2.6
# -----
# ECS DPS trigger for PGE debug runs
# NOTICE TO PGE DEVELOPERS: PGEs which have a debug mode
# need to examine this parameter to evaluate activation rule
# (DO NOT REMOVE THIS ENTRY)
# -----
10911|ECS DEBUG; 0=normal, 1=debug|0
#
# -----
# This entry defines the IP address of the processing host and is used
# by the Toolkit when generating unique Intermediate and Temporary file
# names. The Toolkit no longer relies on the PGS_HOST_PATH environment
# variable to obtain this information. (DO NOT REMOVE THIS ENTRY)
# -----
10099|Local IP Address of 'ether'|155.157.31.87
#
#
10112|Event logging is turned on|1
#
#
# =====
? INTERMEDIATE INPUT
# =====
! ~/runtime
#
#
# =====
? INTERMEDIATE OUTPUT

```



```
# =====  
! ~/runtime  
#  
#  
# =====  
? TEMPORARY I/O  
# =====  
! ~/runtime  
#  
? END  
#
```