System Integration Test Report

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September 6, 2000

Contents

CHANGE RECORD

Issue	Date	Approved by	Reason for change
Version 1	16/08/00		new document

1 Introduction

1.1 Purpose of this document

Description of the programs and tests realised for the RMIB GERB system integration. System integration programs are programs that make all the data processing programs run together. System integration tests includes the tests on these programs but also the check of sub-system log files generation, data communication, error reporting and program scheduling.

1.2 Scope of this document

In order to make all sub-processes (SEVIRI processing, GERB processing, Resolution Enhancement, ...) work together, some programs have been written. This document describes how these programs work and the test that have been done to check them. Additionnaly, tests have been done to ensure correct data communication between sub-systems. Communication is done trough data written on disk. Also, log file generation, error reporting and program scheduling is checked.

This document is not concerned about why or how these programs and sub-systems have been implemented (this information can be found in [DF] for the integration programs, in [TS], [TG], [TRE] for the sub-systems tests and in [ScId], [ADM], [SM], [GP], [RE] for sub-systems description).

2 Generalities

Tests should have been realised on several computers:

Brand	OS	Processor	C compiler
Compaq - PC	GNU/Linux 2.2	1 x Pentium III 450 MHz	egcs-2.91.66
Silicon Graphic - Origin 200	Irix 6.5	2 x IP27 180 MHz	MIPSpro 7.2.1
Compaq - Alphaserver DS 20 E	OSF 4.0	2 x 21264A 667 MHz	Compaq C 6.126

For the moment, only the linux target has been tested.
For each tested program, the on-line help available by typing the command “program -h” is reproduced here. The help is using the Unix standard to describe the use of a program (called prog in the next examples):

prog xx: means that xx is a mandatory argument for program prog

prog [xx]: means that the argument xx is optional for program prog

prog xx|yy: means that xx or yy is a mandatory argument for program prog

This rules can be nested:

prog xx [yy|zz] [hh[kk]]: means that the argument xx is mandatory, that yy or zz (but not both) are optional and that argument hh is also optional and has an additional optional argument kk (but it is nonsense to have argument kk without hh).

3 startproc

3.1 Description

This is extract from [DF]:

All the data processing programs are launched by another program (the launcher - see figure 1) that tests resource availability and the number of processes (from the same program) that are running. If the resources are sufficient, a file in the directory “lock” is created with the name of the program to launch and the PID as suffix. So, scanning this directory the launcher knows how many programs are running. Once the program is finished, the lock file is removed. If the program fails, the lock file is not removed and all the available resources are not used. To avoid this problem, when started the launcher tests if the processes associated to the files in the lock directory are still running. If not, the lock file is changed to

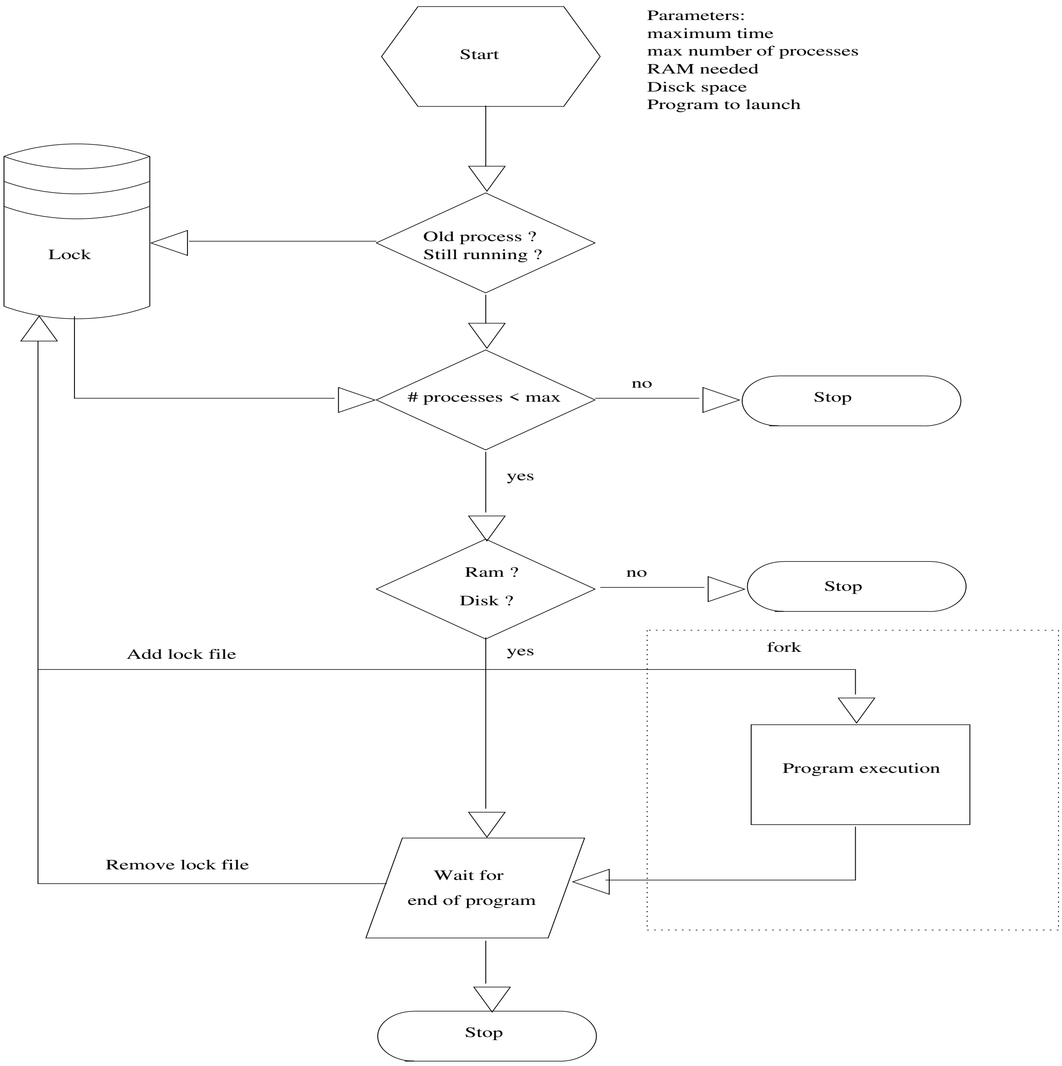

Figure 1: Launcher program

"s_kill_<lock name>". A program can fail but still be in the process table (e.g. endless loop). To avoid this, if the process running time is higher than a maximum, the process is killed and the lock file name is changed to "kill_<lock name>". The creation time of the lock file is used as reference for the process start time.

The available disk space and RAM memory can also be tested to be sure that the program will not fail due to a lack of available ressources. This is really important since some operating systems (Linux or AIX[1] for example) can crash.

3.2 Help

```
USAGE :

  startproc  [-h -m min_mem     -d min_diskspace disk
                 -n nbmax_proc  -t max_runtime
                 -s sleeping_time
                 -l lock_dir -v -w]
                 [-- proc_name  [process options] ]

DESCRIPTION :

  This procedure manages the launch of a process.
  First, it proceeds to 4 optional pre-processing tests :

  -m Check, before starting process,
     if available memory is larger than 'min_mem'.
  -d Check, before starting process,
     if available disk space is larger than 'min_diskspace'.
  -n Checks number of process called 'proc_name'
     that are running and starts a new one only if
     this number is lower than 'nbmax_proc'.
  -t Checks running time of 'proc_name' processes.
     If this running time is bigger than max_runtime
     (in seconds) the considered process is killed.


  Secondly, a witness file 'process.ppid.spid' is opened in
  directory 'lock_dir' during the process running time.
  ( ppid represents the process ID of the parent process,
    and spid represents process ID of the child process,
    i.e. the  process that has to be launched. )

  Additionally, some parameters can be set:
  -s Delays  process launching for an amount of time
     specified in seconds : 'sleeping_time'.
  -l directory where lock files are stored
     (defaults to /tmp).
  -v verbose mode
  -w warning mode (verbose if output is different from 0)
  -h display this help and exits

ARGUMENTS :

 nbmax_proc          : is the maximal number of running process
 min_mem             : is the minimal memory space that must be
                       available to run the process.
                       (expressed in megabytes)
 min_diskspace       : is the minimal disk space that must be
                       available to run the process.
                       (expressed in megabytes)
 disk                : path of the disk to check
```

[1] In order to avoid useless allocation from fork, the data is only allocated when used. The amount of allocated memory can be higher than the physical available memory. If all the allocated memory is really used the system can crash. This feature can be set/unset on AIX but it is the default on Linux and no other option is available.

```
    max_runtime         : is the maximal time a process can run.
                          (expressed in secondes)
    proc_name           : is the name of the process to be started,
                          preceded (if necessary) by its local or
                          total path,
                          and followed by its  arguments
    sleeping_time       : is the time expressed in secondes to wait
                          before launching the process.
    lock_dir            : is the directory where lock files are stored


    OUTPUT            : -1 if something wrong
                      :   0 if no problem
                      :   1 if there is not enough memory
                      :   2 if there is not enough disk space
                      :   3 if there are too many running processes

   MAIN CALLED FUNCTION :   LU_AvailableMemory
                            LU_AvailableDiskSpace
```

3.3 Test of the program

Purpose of the test	Test the help display
Inputs	No inputs
Method	Type the command line:“ `startproc -h`” Check that the help is displayed
Outputs	See § 3.2
Pass/fail criterion	The help is displayed
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that bad option constructions are checked
Inputs	No inputs
Method	Type bad command lines Example of bad startproc options: `-x, -m, -- , -d, -n, -t, -s, -l, -d 100, -d /home, -- inexistent program, ...` Check that the an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed for each bad option The status (available trough “echo $status”) is -1
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test the launch of a process
Inputs	Any executable program ("sleep 30" has been used)
Method	Start a process running by typing the command line:" `startproc -- sleep 30`" Check that the process is running with the ps command. Check that the file sleep.<ppid>.<spid> has been created, where <ppid> is the parent process id and <spid> is the child process id. Wait until the process is finished with the ps command. Check that the file sleep.<ppid>.<spid> has been deleted.
Outputs	No output
Pass/fail criterion	The process is launched the status (available trough "echo $status") is 0 The file sleep.<ppid>.<spid> is created The file sleep.<ppid>.<spid> is deleted when the process is finished
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test the launch of a process when disk space is sufficient
Inputs	Any executable program ("echo ok" has been used)
Method	Verify the available disk space with df (command line "`df dir`" where dir is a directory path) Start a process by typing the command line:"`startproc -s xxx dir -- echo ok`" where xxx is less than the available disk space.
Outputs	`ok`
Pass/fail criterion	The process is launched
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that the process is not launched when disk space is insufficient
Inputs	Any executable program ("echo ok" has been used)
Method	Verify the available disk space with df (command line "`df dir`" where dir is a directory path) Start a process by typing the command line:"`startproc -s xxx dir -- echo ok`" where xxx is upper than the available disk space.
Outputs	No output
Pass/fail criterion	The process is not launched (no output) The status (available trough "echo $status") is 2
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test the launch of a process when available RAM memory is sufficient
Inputs	Any executable program ("echo ok" has been used)
Method	Verify the available RAM memory with free (command line "`free`" for Linux, "`swap -s`" for SGI, "`syd`" for Alpha) Start a process by typing the command line:"`startproc -m xxx -- echo ok`" where xxx is less than the available RAM memory
Outputs	`ok`
Pass/fail criterion	The process is launched
	The status (available trough "echo $status") is 0
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that the process is not launched when available RAM memory is insufficient
Inputs	Any executable program ("echo ok" has been used)
Method	Verify the available RAM memory with free (command line "`free`" for Linux, "`swap -s`" for SGI, "`syd`" for Alpha) Start a process by typing the command line:"`startproc -m xxx -- echo ok`" where xxx is higher than the available RAM memory
Outputs	`ok`
Pass/fail criterion	The process is not launched The status (available trough "echo $status") is 1
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that the number of launched processes can be restricted
Inputs	Any executable program ("sleep 30" has been used)
Method	Start two processes by typing the command lines on 2 shells: `startproc -n 1 -- sleep 30` `startproc -n 1 -- sleep 30` Check that the second process is not launched
Outputs	No output
Pass/fail criterion	The second process is not launched The status (available trough "echo $status") is 3
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that a process is killed if it takes too long time
Inputs	Any executable program ("sleep 30" has been used)
Method	Start a process by typing the command line: "`startproc -- sleep 30 &`" Wait 10 seconds (command line: "`sleep 10`") Start a second process with "`startproc -t 10 -- sleep 30 &`" Check that the first process is killed
Outputs	No output
Pass/fail criterion	The first process is killed The status (available trough "echo $status") is 0
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that a process can be launched with a time delay
Inputs	Any executable program ("echo ok" has been used)
Method	Start a process by typing the command line: "`startproc -s 20 -- echo ok`"
Outputs	ok
Pass/fail criterion	The process is launched with a delay
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that the lock file of the process can be placed in a specified directory
Inputs	Any executable program (“sleep 30” has been used)
Method	Start a process by typing the command line: “`startproc -l .-- sleep 30`”
Outputs	No output
Pass/fail criterion	The lock file is created in the local directory
Date of test	03 08 2000
Status of test	Pass

4 The Meteosat VII processing

As implemented, the programs are generic programs that can be used for SEVIRI but that have been extensevily tested on Meteosat VII data. Using these data is very usefull for scientific development but also the whole processing is a good test to validate sub-system communication, log file generation and process scheduling.

The Meteosat VII processing can be divided in 5 steps:

1. Acquisition of data at the electronic laboratory
2. Transfer to our departement (simple NFS shared disk)
3. Data transformation for further processing
4. Flux and radiance generation
5. Archiving
6. FTP server uploading

The first step is realised by the RMIB electronic laboratory. The second step is trivial. The programs for the next 4 steps are the subjetc of the following tests. These programs are:

Program	Step
transfer_ms7_A, transfer_ms7_B, wv_intepolate, transfer_ms7	3
toa_fluxes	4
TBD	5
TBD	6

A complete processing is the successive call to the programs of each step. As it is explained in § 4.4, transfer_ms7 already contains transfer_ms7_A, transfer_ms7_B and wv_intepolate. A cron file[2] calling each program successively is a complete processing e.g.:

```
0-59/3 * * * * startproc -m 30 -d 10 /home -n 1 -t 3600 -l $LOCK_DIR   -- transfer_ms7  -
l -d -v
1-59/3 * * * * startproc -m 100 -d 10 /home -n 1 -t 3600 -l $LOCK_DIR  -- toa_fluxes A
-l 2 -v
2-59/3 * * * * startproc -m 100 -d 10 /home -n 1 -t 3600 -l $LOCK_DIR  -- toa_fluxes B
-l 2 -v
```

This cron file means that the startproc processes are launched every three minutes[3] and if resource is available and data to process is present, the products will be generated. Testing a complete integration for the Metosat VII A and B format processing is testing that the products are generated as data is arriving. Waiting for input data and cron time delay is quite inefficient. Calling in the command line:

```
transfer_ms7  -l -d -v ; toa_fluxes A -l 2 -v
```

is equivalent and much more efficient for test purpose. Obviously, the cron file must be tested but a simple case is sufficient to check that the syntax is correct and all the variables have been correctly initialised[4].

[2]The cron unix utility allows to execute scheduled commands.
[3]The archiving and ftp uploading will be integrated when tested.
[4]A command line in a shell or a crontab has the same behaviour.

4.1 transfer_ms7_A

4.1.1 Description

The Meteosat data coming from the EUMETSAT distribution arrives at the electronic laboratory of the RMIB. This data must be transformed for archiving and processing. This transformation is essentially an image format transformation and a copy to buffer directories for further processing and to an archive directory for further tape archiving.

The program “transfer_ms7_A” does this job for the A format. The A format covers all the Earth disc.

4.1.2 Help

```
/*HELP ========================================================


      USAGE :

           transfer_ms7_A  config.txt [OPTIONS]


      OPTIONS :

           -h  : display this help

           -v  : verbose mode

           -l  : create a log file for each processed file

           -n N: only process N files of each type

           -d : delete files after successful transfer

      This program converts the input Meteosat images

      from the pif format into the pgm format and  transfers

      these images into the archive directories and the buffer

      directories.

      The configuration file has the following directory path information:
      IN_DIR, BUFFER_VIS, BUFFER_WV,BUFFER_IR, ARCH_VIS, ARCH_WV, ARCH_IR
      and the flag DEL_FLAG with 0 or 1 as value.
      The format is <keyword> = value. For example:
      IN_DIR = /home/gerb/in_dir
      BUFFER_VIS = /home/gerb/buffer_vis
      ...

      A list of the files in IN_DIR directory is created. The files name
      must fit the regular expression ".*a.*.pif$". The list is sorted in
      order that the most recent files are listed first. This sorting is
      based on the name of the files. According to the presence of 3 keywords
      in the file, a specific processing is applied. These keywords are "vis",
      "wv" and "ir".
      The processing for "vis" ("wv"|"ir"):
         - Checking if the size of the file is 6400512 and stop if it is different.
           In this case, we suppose that the transfer from the acquisition
           laboratory to the IN_DIR directory is not finished.
         - The file is read as an unsigned char binary image of 2500 lines by 2560
           columns.
         - The name of the files is transformed to <slot>_S1.rma
           (<slot>_T1_WV.rma|<slot>_T2.rma) where slot is the slot extracted from
           the original image name. Actually, the slot is just
           extracted taking the first 11 characters. The image is then saved in
           the rma format with its new name in the directory BUFFER_VIS
           (BUFFER_WV|BUFFER_IR). If the option "-l" is used, a log file
```

```
          with the following information is created: command line, start time
          of the program, pid of the process, version of the program, original
          image name and end time of the program.
        - The original prefix of the file is transformed from ".pif" to ".pgm.gz".
          The image is then saved in the pgm format with its new name and
          compressed using gzip in the directory ARCH_VIS (ARCH_WV|ARCH_IR). If
          the option "-l" is used, a log file with the following information is
          created: command line, start time of the program, pid of the process,
          version of the program, original image name and end time of the program.
        - If the option "-d" is used, the original file is removed from the
          IN_DIR directory.

   This program does not check if the data has already been transferred. In
   particular, if a log file already exits, it is silently removed and replaced
   when the option -l is used.

   The function returns -1 if something goes wrong else it returns 0.

   NICOLAS CLERBAUX, October 1999, April 2000

   LUIS GONZALEZ, April 2000, August 2000

   ============================================================ */
```

4.1.3 Test of the program

The test have been done with the input config file:

```
IN_DIR = $METEOSAT_A_IN

BUFFER_VIS =  $METEOSAT_A_BUFFER
BUFFER_WV  =  $METEOSAT_A_BUFFER_WV
BUFFER_IR  =  $METEOSAT_A_BUFFER

ARCH_VIS =   $ARCHIVE_METEOSAT/A/rawvis
ARCH_WV  =   $ARCHIVE_METEOSAT/A/rawwv
ARCH_IR  =   $ARCHIVE_METEOSAT/A/rawir

DEL_FLAG = 0
```

with the environment variables:

```
$METEOSAT_A_IN=/home/gerb/Buffers/Meteosat/In
$METEOSAT_A_BUFFER=/home/gerb/Buffers/Meteosat/A/Buffer
$METEOSAT_A_BUFFER_WV=/home/gerb/Buffers/Meteosat/A/Buffer_WV
$ARCHIVE_METEOSAT=/home/gerb/Archive/Meteosat
```

Purpose of the test	Test the help display
Inputs	No inputs
Method	Type the command line:“ `transfer_ms7_A -h`” Check that the help is displayed
Outputs	See § 4.1.2
Pass/fail criterion	The help is displayed
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test that bad option constructions are checked
Inputs	No inputs
Method	Type bad command lines : `transfer_ms7_A`, `transfer_ms7_A bad_file_name`, `transfer_ms7_A -x` , ... Check that an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed for each bad option The status (available trough “echo $status”) is -1
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test that bad input file is checked
Inputs	Configuration file (transfer_ms7_A_cfg.txt)
Method	Change the configuration file parameters to invalid data Check that an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed The status (available trough “echo $status”) is -1
Date of test	03 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of raw Meteosat A format of type “vis”
Inputs	Raw Meteosat A data (file 20002141300aivhvis009.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the file has been correctly transferred (ls of `BUFFER_VIS` and `ARCH_VIS`)
Outputs	Images in `BUFFER_VIS` (name: 20002141300_S1.rma) and `ARCH_VIS` (name: 20002141300aivhvis009.pgm.gz)
Pass/fail criterion	The image is correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of raw Meteosat A format image of type “ir”
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the file has been correctly transferred (ls of `BUFFER_IR` and `ARCH_IR`)
Outputs	Images in `BUFFER_IR` (name: 20002141300_T2.rma) and `ARCH_IR` (name: 20002141300aivhir010.pgm.gz)
Pass/fail criterion	The image is correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of raw Meteosat A format image of type “wv”
Inputs	Raw Meteosat A data (file 20002141230awwv014.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ transfer_ms7_A transfer_ms7_A_cfg.txt” Check that the file has been correctly transferred (ls of `BUFFER_WV` and `ARCH_WV`)
Outputs	Images in `BUFFER_WV` (name: 20002141230_T1_WV.rma) and `ARCH_WV` (name: 20002141230awwv014.pgm.gz)
Pass/fail criterion	The image is correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of several raw Meteosat A format images of type “vis”
Inputs	Raw Meteosat A data (file 20002141300aivhvis009.pif, 20002141200aivhvis009.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the file have been correctly transferred (ls of `BUFFER_VIS` and `ARCH_VIS`)
Outputs	Images in `BUFFER_VIS` (name: 20002141300_S1.rma, 20002141200_S1.rma) Images in `ARCH_VIS` (name: 20002141300aivhvis009.pgm.gz, 20002141200aivhvis009.pgm.gz)
Pass/fail criterion	The images are correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of several raw Meteosat A format images of type “ir”
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif, 20002141200aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the files have been correctly transferred (ls of `BUFFER_IR` and `ARCH_IR`)
Outputs	Images in `BUFFER_IR` (name: 20002141300_T2.rma, 20002141200_T2.rma) Images in `ARCH_IR` (name: 20002141300aivhir010.pgm.gz, 20002141200aivhir010.pgm.gz)
Pass/fail criterion	The images are correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of several raw Meteosat A format images of type “wv”
Inputs	Raw Meteosat A data (file 20002141230awwv014.pif, 20002140930awwv014.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the files have been correctly transferred (ls of `BUFFER_WV` and `ARCH_WV`)
Outputs	Images in `BUFFER_WV` (name: 20002141230_T1_WV.rma, 20002140930_T1_WV.rma) Images in `ARCH_WV` (name: 20002141230awwv014.pgm.gz, 20002140930awwv014.pgm.gz)
Pass/fail criterion	The images are correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of most recent raw Meteosat A format image of type “vis” and option “`-n`”
Inputs	Raw Meteosat A data (file 20002141300aivhvis009.pif, 20002141200aivhvis009.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -n 1`” Check that the file have been correctly transferred (ls of `BUFFER_VIS` and `ARCH_VIS`)
Outputs	Images in `BUFFER_VIS` (name: 20002141300_S1.rma, 20002141200_S1.rma) Images in `ARCH_VIS` (name: 20002141300aivhvis009.pgm.gz, 20002141200aivhvis009.pgm.gz)
Pass/fail criterion	The first image is correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of most recent raw Meteosat A format image of type “ir” and option “`-n`”
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif, 20002141200aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -n 1`” Check that the files have been correctly transferred (ls of `BUFFER_IR` and `ARCH_IR`)
Outputs	Image in `BUFFER_IR` (name: 20002141300_T2.rma) Image in `ARCH_IR` (name: 20002141300aivhir010.pgm.gz)
Pass/fail criterion	The first image is correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of most recent raw Meteosat A format image of type “wv” and option “-n”
Inputs	Raw Meteosat A data (file 20002141230awwv014.pif, 20002140930awwv014.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -n 1`” Check that the files have been correctly transferred (ls of `BUFFER_WV` and `ARCH_WV`)
Outputs	Image in `BUFFER_WV` (name: 20002141230_T1_WV.rma) Image in `ARCH_WV` (name: 20002141230awwv014.pgm.gz)
Pass/fail criterion	The first image is correctly copied in the adequate directory in the correct format
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the no transfer of raw Meteosat A format image of type “vis” when size is incorrect
Inputs	Raw Meteosat A data (file 20002141300aivhvis009.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Change the size (echo > 20002141300aivhvis009.pif). Then, size is 0. Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the file has not been transferred (ls of `BUFFER_VIS` and `ARCH_VIS`)
Outputs	No output
Pass/fail criterion	The image has not been transferred
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the no transfer of raw Meteosat A format image of type “ir” when size is incorrect
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Change the size (echo > 20002141300aivhir010.pif). Then, size is 0. Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the file has not been transferred (ls of `BUFFER_IR` and `ARCH_IR`)
Outputs	No output
Pass/fail criterion	The image has not been transferred
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the no transfer of raw Meteosat A format image of type “wv” when size is incorrect
Inputs	Raw Meteosat A data (file 20002141230awwv014.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Change the size (echo > 20002141230awwv014.pif). Then, size is 0. Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt`” Check that the file has not been transferred (ls of `BUFFER_WV` and `ARCH_WV`)
Outputs	No output
Pass/fail criterion	The image has not been transferred
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the log file creation for raw Meteosat A format image of type “vis”
Inputs	Raw Meteosat A data (file 20002141300aivhvis009.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ transfer_ms7_A transfer_ms7_A_cfg.txt -l” Check that the file log files have been created (ls of `BUFFER_VIS` and `ARCH_VIS`)

Outputs	cat /home/gerb/Buffers/Meteosat/A/Buffer/20002141300_S1.log:
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l`
	`Start time=Aug 07 10:13:01`
	`PID=32246`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141300aivhvis009.pif`
	`End time=Aug 07 10:13:01`
	cat /home/gerb/Archive/Meteosat/A/rawvis/20002141300aivhvis009.log:
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l`
	`Start time=Aug 07 10:13:06`
	`PID=32246`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141300aivhvis009.pif`
	`End time=Aug 07 10:13:06`

Pass/fail criterion	The log files are created and contain the correct information
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the log file creation for raw Meteosat A format image of type “ir”
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -l`” Check that the file log files have been created (ls of `BUFFER_IR` and `ARCH_IR`)

Outputs	cat /home/gerb/Buffers/Meteosat/A/Buffer/20002141300_T2.log :
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l`
	`Start time=Aug 07 10:13:06`
	`PID=32246`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141300aivhir010.pif`
	`End time=Aug 07 10:13:06`
	cat /home/gerb/Archive/Meteosat/A/rawwv/20002141230awwv014.log:
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l`
	`Start time=Aug 07 10:13:13`
	`PID=32246`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141300aivhir010.pif`
	`End time=Aug 07 10:13:13`

Pass/fail criterion	The log files are created and contain the correct information
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the log file creation for raw Meteosat A format image of type “wv”
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -l`” Check that the file log files have been created (ls of `BUFFER_WV` and `ARCH_WV`)

Outputs	cat /home/gerb/Buffers/Meteosat/A/Buffer_WV/20002141230_T1_WV.log
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l`
	`Start time=Aug 07 11:02:59`
	`PID=594`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141230awwv014.pif`
	`End time=Aug 07 11:02:59`
	cat /home/gerb/Archive/Meteosat/A/rawwv/20002141230awwv014.log :
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l`
	`Start time=Aug 07 11:03:09`
	`PID=594`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141230awwv014.pif`
	`End time=Aug 07 11:03:09`

Pass/fail criterion	The log files are created and contain the correct information
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the deletion of raw Meteosat A format image of type “vis” (check the `-d` option)
Inputs	Raw Meteosat A data (file 20002141300aivhvis009.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -d`” Check that the file has been correctly removed (ls of `IN_DIR`)
Outputs	Images in `BUFFER_VIS` (name: 20002141300_S1.rma) and `ARCH_VIS` (name: 20002141300aivhvis009.pgm.gz)
Pass/fail criterion	The input file has been removed (ls of `IN_DIR`)
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the deletion of raw Meteosat A format image of type “ir” (check the `-d` option)
Inputs	Raw Meteosat A data (file 20002141300aivhir010.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -d`” Check that the file has been correctly removed (ls of `IN_DIR`)
Outputs	Images in `BUFFER_IR` (name: 20002141300_T2.rma) and `ARCH_IR` (name: 20002141300aivhir010.pgm.gz)
Pass/fail criterion	The input file has been removed (ls of `IN_DIR`)
Date of test	07 08 2000
Status of test	Pass

Purpose of the test	Test the deletion of raw Meteosat A format image of type “wv” (check the `-d` option)
Inputs	Raw Meteosat A data (file 20002141230awwv014.pif) Configuration file (transfer_ms7_A_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_A transfer_ms7_A_cfg.txt -d`” Check that the file has been correctly removed (ls of `IN_DIR`)
Outputs	Images in `BUFFER_WV` (name: 20002141230_T1_WV.rma) and `ARCH_WV` (name: 20002141230awwv014.pgm.gz)
Pass/fail criterion	The input file has been removed (ls of `IN_DIR`)
Date of test	07 08 2000
Status of test	Pass

4.2 transfer_ms7_B

4.2.1 Description

The Meteosat data coming from the EUMETSAT distribution arrives at the electronic laboratory of the RMIB. This data must be transformed for archiving and processing purpose. This transformation is essentially an image format transformation and a copy to buffer directories for further processing and to an archive directory for further tape archiving.

The program “transfer_ms7_B” do this job for the B format. The B format covers the North hemisphere.

4.2.2 Help

```
/*HELP ==========================================================
```

```
USAGE :

     transfer_ms7_B  config.txt [OPTIONS]


OPTIONS :

     -h  : display this help

     -v  : verbose mode

     -l  : create a log file for each processed file

     -n N: only process N files of each type

     -d : delete files after successful transfer

This program converts the input Meteosat images

from the pif format into the pgm format and  transfers

these images into the archive directories and the buffer

directories.

The configuration file has the following directory path information:
IN_DIR, BUFFER_VIS, BUFFER_WV,BUFFER_IR, ARCH_VIS, ARCH_WV, ARCH_IR
and the flag DEL_FLAG with 0 or 1 as value.
The format is <keyword> = value. For example:
IN_DIR = /home/gerb/in_dir
BUFFER_VIS = /home/gerb/buffer_vis
...

A list of the files in IN_DIR directory is created. The files name
must fit the regular expression ".*b.*.pif$". The list is sorted in
order that the most recent files are listed before. This sorting is
based on the name of the files. According to the presence of 3 keywords
in the file, a specific processing is applied. These keywords are "vis",
"wv" and "ir".
The processing for "vis" ("wv"|"ir"):
   - Checking if the size of the file is 3195392 (799232|799232) and
     stop if it is different.
     In this case, we suppose that the transfer from the acquisition
     laboratory to the IN_DIR directory is not finished.
   - The file is read as an unsigned char binary image of 1248 (624|624)
     lines by 2560 (1280|1280) columns and a header size of 256 bytes
     is discarded.
   - A sub image region is extracted from line 0 (0|0) to 1246 (623|623)
     and column 0  (0|0) to 2496 (1248|1248).
   - The name of the files is transformed to <slot>_S1.rma
     (<slot>_T1_WV.rma|<slot>_T2.rma) where slot is the slot extracted from
     the original image name. Actually, the slot is just
     extracted taking the first 11 characters. The image is then saved in
     the rma format with its new name in the directory BUFFER_VIS
     (BUFFER_WV|BUFFER_IR). If the option "-l" is used, a log file
     with the following information is created: command line, start time
     of the program, pid of the process, version of the program, original
     image name and end time of the program.
   - The original prefix of the file is transformed from ".pif" to ".pgm.gz".
     The image is then saved in the pgm format with its new name and
     compressed using gzip in the directory ARCH_VIS (ARCH_WV|ARCH_IR). If
     the option "-l" is used, a log file with the following information is
     created: command line, start time of the program, pid of the process,
     version of the program, original image name and end time of the program.
   - If the option "-d" is used, the original file is removed from the
```

```
     IN_DIR directory.

This program does not check if the data has already been transferred. In
particular, if a log file already exits, it is silently removed and replaced
when the option -l is used.

The function returns -1 if something goes wrong else it returns 0.

NICOLAS CLERBAUX, October 1999, April 2000

LUIS GONZALEZ, April 2000, August 2000

============================================================ */
```

4.2.3 Test of the program

The input config file is:

```
IN_DIR = $METEOSAT_B_IN

BUFFER_VIS =  $METEOSAT_B_BUFFER
BUFFER_WV  =  $METEOSAT_B_BUFFER_WV
BUFFER_IR  =  $METEOSAT_B_BUFFER

ARCH_VIS =   $ARCHIVE_METEOSAT/B/rawvis
ARCH_WV  =   $ARCHIVE_METEOSAT/B/rawwv
ARCH_IR  =   $ARCHIVE_METEOSAT/B/rawir

DEL_FLAG = 0
```

with the environment variables:

```
METEOSAT_B_IN=/home/gerb/Buffers/Meteosat/In
METEOSAT_B_BUFFER=/home/gerb/Buffers/Meteosat/B/Buffer
METEOSAT_B_BUFFER_WV=/home/gerb/Buffers/Meteosat/B/Buffer_WV
ARCHIVE_METEOSAT=/home/gerb/Archive/Meteosat
```

Purpose of the test	Test the help display
Inputs	No inputs
Method	Type the command line:“ `transfer_ms7_B -h`” Check that the help is displayed
Outputs	see § 4.2.2
Pass/fail criterion	The help is displayed
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test that bad option constructions are checked
Inputs	No inputs
Method	Type bad command lines : `transfer_ms7_B`, `transfer_ms7_B bad_file_name`, `transfer_ms7_B -x` , ... Check that the an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed for each bad option The status (available trough “echo $status”) is -1
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test that bad input file is checked
Inputs	Configuration file (transfer_ms7_B_cfg.txt)
Method	Change the configuration file parameters to invalid data Check that the an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed The status (available trough "echo $status") is -1
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of raw Meteosat B format image of type "vis"
Inputs	Raw Meteosat B data (file 20002141230bivvis011.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:" `transfer_ms7_B transfer_ms7_B_cfg.txt`" Check that the file has been correctly transferred (ls of `BUFFER_VIS` and `ARCH_VIS`) Check the size with "im_info"
Outputs	Images in `BUFFER_VIS` (name: 20002141230_S1.rma) and `ARCH_VIS` (name: 20002141230bivvis011.pgm.gz)
Pass/fail criterion	The image is correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of raw Meteosat B format image of type "ir"
Inputs	Raw Meteosat B data (file 20002141230bivir012.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:" `transfer_ms7_B transfer_ms7_B_cfg.txt`" Check that the file has been correctly transferred (ls of `BUFFER_IR` and `ARCH_IR`) Check the size with "im_info"
Outputs	Images in `BUFFER_IR` (name: 20002141230_T2.rma) and `ARCH_IR` (name: 20002141230bivir012.pgm.gz)
Pass/fail criterion	The image is correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of Raw Meteosat B format image of type "wv"
Inputs	Raw Meteosat B data (file 20002141200bwwv013.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:" `transfer_ms7_B transfer_ms7_B_cfg.txt`" Check that the file has been correctly transferred (ls of `BUFFER_WV` and `ARCH_WV`) Check the size with "im_info"
Outputs	Images in `BUFFER_WV` (name: 20002141200_T1_WV.rma) and `ARCH_WV` (name: 20002141200bwwv013.pgm.gz)
Pass/fail criterion	The image is correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of several Raw Meteosat B format images of type “vis”
Inputs	Raw Meteosat B data (file 20002141230bivvis011.pif , 20002141200bivvis011.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt`” Check that the file have been correctly transferred (ls of `BUFFER_VIS` and `ARCH_VIS`)
Outputs	Images in `BUFFER_VIS` (name: 20002141230_S1.rma, 20002141200_S1.rma) Images in `ARCH_VIS` (name: 20002141230bivvis011.pgm.gz, 20002141200bivvis011.pif.pgm.gz)
Pass/fail criterion	The images are correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of several raw Meteosat B format images of type “ir”
Inputs	Raw Meteosat B data (file 20002141230bivir012.pif, 20002141200bivir012.pif) configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt`” Check that the files have been correctly transferred (ls of `BUFFER_IR` and `ARCH_IR`)
Outputs	Images in `BUFFER_IR` (name: 20002141230_T2.rma, 20002141200_T2.rma) Images in `ARCH_IR` (name: 20002141230bivir012.pgm.gz, 20002141200bivir012.pgm.gz)
Pass/fail criterion	The images are correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of several raw Meteosat B format images of type “wv”
Inputs	Raw Meteosat B data (file 20002141200bwwv013.pif, 20002141100bwwv013.pif) configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input files in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt`” Check that the files have been correctly transferred (ls of `BUFFER_WV` and `ARCH_WV`)
Outputs	Images in `BUFFER_WV` (name: 20002141200_T1_WV.rma, 20002141100_T1_WV.rma) Images in `ARCH_WV` (name: 20002141200bwwv013.pgm.gz, 20002141100bwwv013.pgm.gz)
Pass/fail criterion	The images are correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of most recent Raw Meteosat B format image of type "vis" and option "-n"
Inputs	Raw Meteosat B data (file 20002141230bivvis011.pif , 20002141200bivvis011.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input files in IN_DIR Start a process by typing the command line:" transfer_ms7_B transfer_ms7_B_cfg.txt -n 1" Check that the file have been correctly transferred (ls of BUFFER_VIS and ARCH_VIS)
Outputs	Images in BUFFER_VIS (name: 20002141230_S1.rma, 20002141200_S1.rma) Images in ARCH_VIS (name: 20002141230bivvis011.pgm.gz, 20002141200aivhvis009.pgm.gz)
Pass/fail criterion	The first image is correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of most recent Raw Meteosat B format image of type "ir" and option "-n"
Inputs	Raw Meteosat B data (file 20002141230bivir012.pif, 20002141200bivir012.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input files in IN_DIR Start a process by typing the command line:" transfer_ms7_B transfer_ms7_B_cfg.txt -n 1" Check that the files have been correctly transferred (ls of BUFFER_VIS and ARCH_VIS)
Outputs	Image in BUFFER_IR (name: 20002141230_T2.rma) Image in ARCH_IR (name: 20002141230bivir012.pgm.gz)
Pass/fail criterion	The first image is correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the correct transfer of most recent raw Meteosat B format image of type "wv" and option "-n"
Inputs	Raw Meteosat B data (file 20002141200bwwv013.pif, 20002141100bwwv013.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input files in IN_DIR Start a process by typing the command line:" transfer_ms7_B transfer_ms7_B_cfg.txt -n 1" Check that the files have been correctly transferred (ls of BUFFER_WV and ARCH_WV)
Outputs	Image in BUFFER_WV (name: 20002141200_T1_WV.rma) Image in ARCH_WV (name: 20002141200bwwv013.pgm.gz)
Pass/fail criterion	The first image is correctly copied in the adequate directory in the correct format
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the no transfer of raw Meteosat B format image of type "vis" when size is incorrect
Inputs	Raw Meteosat B data (file 20002141230bivvis011.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Change the size (echo > 20002141230bivvis011.pif). Then, size is 0. Start a process by typing the command line:" `transfer_ms7_B transfer_ms7_B_cfg.txt`" Check that the file has not been transferred (ls of `BUFFER_VIS` and `ARCH_VIS`)
Outputs	No output
Pass/fail criterion	The image has not been transferred
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the no transfer of raw Meteosat B format image of type "ir" when size is incorrect
Inputs	Raw Meteosat B data (file 20002141230bivir012.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Change the size (echo > 20002141230bivir012.pif). Then, size is 0. Start a process by typing the command line:" `transfer_ms7_B transfer_ms7_B_cfg.txt`" Check that the file has not been transferred (ls of `BUFFER_IR` and `ARCH_IR`)
Outputs	No output
Pass/fail criterion	The image has not been transferred
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the no transfer of raw Meteosat B format image of type "wv" when size is incorrect
Inputs	Raw Meteosat B data (file 20002141200bwwv013.pif), Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Change the size (echo > 20002141200bwwv013.pif). Then, size is 0. Start a process by typing the command line:" `transfer_ms7_B transfer_ms7_B_cfg.txt`" Check that the file has not been transferred (ls of `BUFFER_WV` and `ARCH_WV`)
Outputs	No output
Pass/fail criterion	The image has not been transferred
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the log file creation for raw Meteosat B format image of type “vis”
Inputs	Raw Meteosat B data (file 20002141230bivvis011.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt -l`” Check that the file log files have been created (ls of `BUFFER_VIS` and `ARCH_VIS`)

Outputs	cat /home/gerb/Buffers/Meteosat/B/Buffer/20002141230_S1.log:
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 08 13:09:56`
	`PID=11260`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141230bivvis011.pif`
	`End time=Aug 08 13:09:56`
	cat /home/gerb/Archive/Meteosat/B/rawvis/20002141230bivvis011.log:
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 08 13:09:59`
	`PID=11260`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141230bivvis011.pif`
	`End time=Aug 08 13:09:59`

Pass/fail criterion	The log files are created and contain the correct information
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the log file creation for raw Meteosat B format image of type “ir”
Inputs	Raw Meteosat B data (file 20002141200bwwv013.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt -l`” Check that the file log files have been created (ls of `BUFFER_IR` and `ARCH_IR`)

Outputs	cat /home/gerb/Buffers/Meteosat/B/Buffer/20002141230_T2.log :
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 08 13:10:00`
	`PID=11260`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141230bivir012.pif`
	`End time=Aug 08 13:10:00`
	cat /home/gerb/Archive/Meteosat/B/rawwv/20002141200bwwv013.log:
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 08 13:10:00`
	`PID=11260`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141230bivir012.pif`
	`End time=Aug 08 13:10:00`

Pass/fail criterion	The log files are created and contain the correct information
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the log file creation for raw Meteosat B format image of type “wv”
Inputs	Raw Meteosat B data (file 20002141230bivir012.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt -l`” Check that the file log files have been created (ls of `BUFFER_WV` and `ARCH_WV`)

Outputs	cat /home/gerb/Buffers/Meteosat/B/Buffer_WV/20002141200_T1_WV.log
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 08 13:10:01`
	`PID=11260`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141200bwwv013.pif`
	`End time=Aug 08 13:10:01`
	cat /home/gerb/Archive/Meteosat/B/rawwv/20002141200bwwv013.log :
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 08 13:10:02`
	`PID=11260`
	`BATS Lib Version=20002200110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141200bwwv013.pif`
	`End time=Aug 08 13:10:02`

Pass/fail criterion	The log files are created and contain the correct information
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the deletion of raw Meteosat B format image of type “vis” (check the `-d` option)
Inputs	Raw Meteosat B data (file 20002141230bivvis011.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt -d`” Check that the file has been correctly removed (ls of `IN_DIR`)
Outputs	Images in `BUFFER_VIS` (name: 20002141230_S1.rma) and `ARCH_VIS` (name: 20002141230bivvis011.pgm.gz)
Pass/fail criterion	The input file has been removed (ls of `IN_DIR`)
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the deletion of raw Meteosat B format image of type “ir” (check the `-d` option)
Inputs	Raw Meteosat B data (file 20002141230bivir012.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in `IN_DIR` Start a process by typing the command line:“ `transfer_ms7_B transfer_ms7_B_cfg.txt -d`” Check that the file has been correctly removed (ls of `IN_DIR`)
Outputs	Images in `BUFFER_IR` (name: 20002141230_T2.rma) and `ARCH_IR` (name: 20002141230bivir012.pgm.gz)
Pass/fail criterion	The input file has been removed (ls of `IN_DIR`)
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the deletion of raw Meteosat B format image of type “wv” (check the -d option)
Inputs	Raw Meteosat B data (file 20002141200bwwv013.pif) Configuration file (transfer_ms7_B_cfg.txt)
Method	Copy the input file in IN_DIR Start a process by typing the command line:“ transfer_ms7_B transfer_ms7_B_cfg.txt -d” Check that the file has been correctly removed (ls of IN_DIR)
Outputs	Images in BUFFER_WV (name: 20002141200_T1_WV.rma) and ARCH_WV (name: 20002141200bwwv013.pgm.gz)
Pass/fail criterion	The input file has been removed (ls of IN_DIR)
Date of test	08 08 2000
Status of test	Pass

4.3 wv_interpolate

4.3.1 Description

The water vapour image furnished by Meteosat has not the same schedule than the visible and infra-red images. This program estimates the water vapour images at the visible and infra-red acquisition time.

4.3.2 Help

4.3.2.1 Short help

```
/*HELP ========================================================

USAGE : wv_interpolate directory_in directory_out A|B [options]

OPTIONS :

     -l : create a log for each processed file

     -h : display a simple help

     -H : display an extensive help

     -v : verbose mode

The function returns -1 if something went wrong, 0 elsewhere.

NICOLAS CLERBAUX,

LUIS GONZALEZ, August 2000
============================================================ */
```

4.3.2.2 Extensive help

```
/*HELP ========================================================

USAGE : wv_interpolate directory_in directory_out A|B [options]

OPTIONS :

     -l : create a log for each processed file

     -h : display a simple help

     -H : display an extensive help
```

```
    -v : verbose mode


This program interpolates Meteosat water vapour images.
Interpolation is very simplified here. The directory_in directory
is scanned for the files fitting the regular expression "*.rma".
A static table gives the correspondence between the input
name and output name. This table is for the A format:

          0100_T1 0100_T1_WV
          0200_T1 0200_T1_WV
          0300_T1 0300_T1_WV
          0400_T1 0400_T1_WV
          0500_T1 0500_T1_WV
          0600_T1 0630_T1_WV
          0700_T1 0630_T1_WV
          0800_T1 0630_T1_WV
          0900_T1 0930_T1_WV
          1000_T1 0930_T1_WV
          1100_T1 0930_T1_WV
          1200_T1 1230_T1_WV
          1300_T1 1230_T1_WV
          1400_T1 1230_T1_WV
          1500_T1 1530_T1_WV
          1600_T1 1530_T1_WV
          1700_T1 1530_T1_WV
          1800_T1 1830_T1_WV
          1900_T1 1830_T1_WV
          2000_T1 2000_T1_WV
          2100_T1 2000_T1_WV
          2200_T1 2200_T1_WV
          2300_T1 2300_T1_WV
          2400_T1 2400_T1_WV

If the second string is found in the file name, a copy of this file is done
in the directory directory_out with the second string changed by the first
string in the file name. The second column is restricted to available
Meteosat data slots and the first column represents all the slots that are
needed in the Meteosat processing.

The table for the B format is:

          0030_T1 0030_T1_WV
          0100_T1 0100_T1_WV
          0130_T1 0130_T1_WV
          0200_T1 0200_T1_WV
          0230_T1 0230_T1_WV
          0300_T1 0300_T1_WV
          0330_T1 0330_T1_WV
          0400_T1 0400_T1_WV
          0430_T1 0430_T1_WV
          0500_T1 0430_T1_WV
          0530_T1 0600_T1_WV
          0600_T1 0600_T1_WV
          0630_T1 0600_T1_WV
          0700_T1 0700_T1_WV
          0730_T1 0700_T1_WV
          0800_T1 0800_T1_WV
          0830_T1 0800_T1_WV
          0900_T1 0900_T1_WV
          0930_T1 0900_T1_WV
          1000_T1 1000_T1_WV
          1030_T1 1000_T1_WV
          1100_T1 1100_T1_WV
          1130_T1 1100_T1_WV
          1200_T1 1200_T1_WV
          1230_T1 1200_T1_WV
```

```
            1300_T1 1300_T1_WV
            1330_T1 1300_T1_WV
            1400_T1 1400_T1_WV
            1430_T1 1400_T1_WV
            1500_T1 1500_T1_WV
            1530_T1 1500_T1_WV
            1600_T1 1600_T1_WV
            1630_T1 1600_T1_WV
            1700_T1 1700_T1_WV
            1730_T1 1700_T1_WV
            1800_T1 1800_T1_WV
            1830_T1 1800_T1_WV
            1900_T1 1900_T1_WV
            1930_T1 1900_T1_WV
            2000_T1 2000_T1_WV
            2030_T1 2030_T1_WV
            2100_T1 2100_T1_WV
            2130_T1 2130_T1_WV
            2200_T1 2200_T1_WV
            2230_T1 2230_T1_WV
            2300_T1 2300_T1_WV
            2330_T1 2330_T1_WV
            2400_T1 2400_T1_WV

    The log files of the output data are stored with the same name but with
    ".log" as suffix.
    The log file of the input data is copied in the directory defined by the
    environment variable $METEOSAT_A_LOGS or $METEOSAT_B_LOGS for A or B
    format respectively. If this variable is not set and the option -l is
    used, the program fails.


   The function returns -1 if something went wrong, 0 elsewhere.

   NICOLAS CLERBAUX,

   LUIS GONZALEZ, August 2000
   ============================================================ */
```

4.3.3 Test of the program

Purpose of the test	Test the help display
Inputs	No inputs
Method	Type the command line:“ `wv_interpolate -h`” Check that the short help is displayed
Outputs	see § 4.3.2.1
Pass/fail criterion	The short help is displayed
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test the help display
Inputs	No inputs
Method	Type the command line:“ `wv_interpolate -H`” Check that the extensive help is displayed
Outputs	see § 4.3.2.2
Pass/fail criterion	The extensive help is displayed
Date of test	08 08 2000
Status of test	Pass

Purpose of the test	Test that bad option constructions are checked
Inputs	No inputs
Method	Type bad command lines : `wv_interpolate`, `wv_interpolate -x`, `wv_interpolate bad_path bad_path C, ...` Check that the an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed for each bad option The status (available trough "echo $status") is -1
Date of test	08 08 2000
Status of test	Pass

4.3.3.1 Test for the Meteosat A format image For the tests, a complete set of data for one day in format A has been transferred with "transfer_ms7_A" (see § 4.1) in the directory /home/gerb/Buffers/Meteosat/A/Buffer_WV/.
The files are: 20002140100_T1_WV.log, 20002140100_T1_WV.rma, 20002140200_T1_WV.log, 20002140200_T1_WV.rma, 20002140300_T1_WV.log, 20002140300_T1_WV.rma, 20002140400_T1_WV.log, 20002140400_T1_WV.rma, 20002140500_T1_WV.log, 20002140500_T1_WV.rma, 20002140630_T1_WV.log, 20002140630_T1_WV.rma, 20002140930_T1_WV.log, 20002140930_T1_WV.rma, 20002141230_T1_WV.log ,20002141230_T1_WV.rma, 20002141530_T1_WV.log, 20002141530_T1_WV.rma, 20002141830_T1_WV.log, 20002141830_T1_WV.rma, 20002142000_T1_WV.log, 20002142000_T1_WV.rma, 20002142200_T1_WV.log, 20002142200_T1_WV.rma, 20002142300_T1_WV.log, 20002142300_T1_WV.rma, 20002142400_T1_WV.log, 20002142400_T1_WV.rma.
The environment variable are:

```
$METEOSAT_A_LOGS=/home/gerb/Archive/Meteosat/A/logs
$METEOSAT_A_BUFFER=/home/gerb/Buffers/Meteosat/A/Buffer
$METEOSAT_A_BUFFER_WV=/home/gerb/Buffers/Meteosat/A/Buffer_WV
```

Purpose of the test	Test the correct execution for the A format
Inputs	One day of Meteosat data in the A format
Method	Type command line : `wv_interpolate $METEOSAT_A_BUFFER_WV $METEOSAT_A_BUFFER A` Check that the files have been correctly copied in the output directory
Outputs	Files in the output directory

Pass/fail criterion	The status (available trough “echo $status”) is 0
	The following command lines should return no difference between the images:
	`imdiff $METEOSAT_A_BUFFER/20002140100_T1.rma $METEOSAT_A_BUFFER_WV/20002140100_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140200_T1.rma $METEOSAT_A_BUFFER_WV/20002140200_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140300_T1.rma $METEOSAT_A_BUFFER_WV/20002140300_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140400_T1.rma $METEOSAT_A_BUFFER_WV/20002140400_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140500_T1.rma $METEOSAT_A_BUFFER_WV/20002140500_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140600_T1.rma $METEOSAT_A_BUFFER_WV/20002140630_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140700_T1.rma $METEOSAT_A_BUFFER_WV/20002140630_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140800_T1.rma $METEOSAT_A_BUFFER_WV/20002140630_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002140900_T1.rma $METEOSAT_A_BUFFER_WV/20002140930_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141000_T1.rma $METEOSAT_A_BUFFER_WV/20002140930_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141100_T1.rma $METEOSAT_A_BUFFER_WV/20002140930_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141200_T1.rma $METEOSAT_A_BUFFER_WV/20002141230_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141300_T1.rma $METEOSAT_A_BUFFER_WV/20002141230_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141400_T1.rma $METEOSAT_A_BUFFER_WV/20002141230_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141500_T1.rma $METEOSAT_A_BUFFER_WV/20002141530_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141600_T1.rma $METEOSAT_A_BUFFER_WV/20002141530_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141700_T1.rma $METEOSAT_A_BUFFER_WV/20002141530_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141800_T1.rma $METEOSAT_A_BUFFER_WV/20002141830_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002141900_T1.rma $METEOSAT_A_BUFFER_WV/20002141830_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002142000_T1.rma $METEOSAT_A_BUFFER_WV/20002142000_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002142100_T1.rma $METEOSAT_A_BUFFER_WV/20002142000_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002142200_T1.rma $METEOSAT_A_BUFFER_WV/20002142200_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002142300_T1.rma $METEOSAT_A_BUFFER_WV/20002142300_T1_WV.rma`
	`imdiff $METEOSAT_A_BUFFER/20002142400_T1.rma $METEOSAT_A_BUFFER_WV/20002142400_T1_WV.rma`

Date of test	09 08 2000
Status of test	Pass

Purpose of the test	Test the log files for the A format
Inputs	20002140100_T1_WV.rma and 20002140100_T1_WV.log in `$METEOSAT_A_BUFFER_WV`
Method	Type command line : `wv_interpolate $METEOSAT_A_BUFFER_WV $METEOSAT_A_BUFFER A -l` Check that the log of the output file has been correctly copied in the output directory
	Check that the log of the input file has been correctly copied in the `$METEOSAT_A_LOGS` directory
Outputs	Files in the output directory

Pass/fail criterion	cat /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.log:
	`Program=wv_interpolate /home/gerb/Buffers/Meteosat/A/Buffer_WV /home/gerb/Buffers/Meteosat/A/Buffer A -l -v`
	`Start time=Aug 09 10:23:13`
	`PID=20315`
	`BATS Lib Version=20002220110`
	`Input 0=/home/gerb/Buffers/Meteosat/A/Buffer_WV/20002140100_T1_WV.rma`
	`End time=Aug 09 10:23:13`
	cat /home/gerb/Archive/Meteosat/A/logs/20002140100_T1_WV.log:
	`Program=transfer_ms7_A /home/gerb/Data/Meteosat/transfer_ms7_A_cfg.txt -v -l -d`
	`Start time=Aug 09 10:15:56`
	`PID=20292`
	`BATS Lib Version=20002220110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002140100aiwwv014.pif`
	`End time=Aug 09 10:15:56`

Date of test	09 08 2000
Status of test	Pass

4.3.3.2 Test for the Meteosat B format image For the tests, a complete set of data for one day in format B has been transferred with “transfer_ms7_B” (see § 4.2.2) in the directory /home/gerb/Buffers/Meteosat/B/Buffer_WV/. The files are: 20002140030_T1_WV.log, 20002140030_T1_WV.rma, 20002140100_T1_WV.log, 20002140100_T1_WV.rma, 20002140130_T1_WV.log, 20002140130_T1_WV.rma, 20002140200_T1_WV.log, 20002140200_T1_WV.rma, 20002140230_T1_WV.log, 20002140230_T1_WV.rma, 20002140300_T1_WV.log, 20002140300_T1_WV.rma, 20002140330_T1_WV.log, 20002140330_T1_WV.rma, 20002140400_T1_WV.log, 20002140400_T1_WV.rma, 20002140430_T1_WV.log, 20002140430_T1_WV.rma, 20002140600_T1_WV.log, 20002140600_T1_WV.rma, 20002140700_T1_WV.log, 20002140700_T1_WV.rma, 20002140800_T1_WV.log, 20002140800_T1_WV.rma, 20002140900_T1_WV.log, 20002140900_T1_WV.rma, 20002141000_T1_WV.log, 20002141000_T1_WV.rma, 20002141100_T1_WV.log, 20002141100_T1_WV.rma, 20002141200_T1_WV.log, 20002141200_T1_WV.rma, 20002141300_T1_WV.log, 20002141300_T1_WV.rma, 20002141400_T1_WV.log, 20002141400_T1_WV.rma, 20002141500_T1_WV.log, 20002141500_T1_WV.rma, 20002141600_T1_WV.log, 20002141600_T1_WV.rma, 20002141700_T1_WV.log, 20002141700_T1_WV.rma, 20002141800_T1_WV.log, 20002141800_T1_WV.rma, 20002141900_T1_WV.log, 20002141900_T1_WV.rma, 20002142000_T1_WV.log, 20002142000_T1_WV.rma, 20002142030_T1_WV.log, 20002142030_T1_WV.rma, 20002142100_T1_WV.log, 20002142100_T1_WV.rma, 20002142130_T1_WV.log, 20002142130_T1_WV.rma, 20002142200_T1_WV.log, 20002142200_T1_WV.rma, 20002142230_T1_WV.log, 20002142230_T1_WV.rma, 20002142300_T1_WV.log, 20002142300_T1_WV.rma, 20002142330_T1_WV.log, 20002142330_T1_WV.rma, 20002142400_T1_WV.log, 20002142400_T1_WV.rma.
The environment variable are:

```
$METEOSAT_B_LOGS=/home/gerb/Archive/Meteosat/B/logs
$METEOSAT_B_BUFFER=/home/gerb/Buffers/Meteosat/B/Buffer
$METEOSAT_B_BUFFER_WV=/home/gerb/Buffers/Meteosat/B/Buffer_WV
```

Purpose of the test	Test the correct execution for the B format
Inputs	One day of Meteosat data in the B format
Method	Type command line : `wv_interpolate $METEOSAT_B_BUFFER_WV $METEOSAT_B_BUFFER B` Check that the files have been correctly copied in the output directory
Outputs	Files in the output directory

Pass/fail criterion	The status (available trough “echo $status”) is 0
	The following command lines should return no difference between the images:
	`imdiff $METEOSAT_B_BUFFER/20002140030_T1.rma $METEOSAT_B_BUFFER_WV/20002140030_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140100_T1.rma $METEOSAT_B_BUFFER_WV/20002140100_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140130_T1.rma $METEOSAT_B_BUFFER_WV/20002140130_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140200_T1.rma $METEOSAT_B_BUFFER_WV/20002140200_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140230_T1.rma $METEOSAT_B_BUFFER_WV/20002140230_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140300_T1.rma $METEOSAT_B_BUFFER_WV/20002140300_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140330_T1.rma $METEOSAT_B_BUFFER_WV/20002140330_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140400_T1.rma $METEOSAT_B_BUFFER_WV/20002140400_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140430_T1.rma $METEOSAT_B_BUFFER_WV/20002140430_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140500_T1.rma $METEOSAT_B_BUFFER_WV/20002140430_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140530_T1.rma $METEOSAT_B_BUFFER_WV/20002140600_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140600_T1.rma $METEOSAT_B_BUFFER_WV/20002140600_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140630_T1.rma $METEOSAT_B_BUFFER_WV/20002140600_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140700_T1.rma $METEOSAT_B_BUFFER_WV/20002140700_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140730_T1.rma $METEOSAT_B_BUFFER_WV/20002140700_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140800_T1.rma $METEOSAT_B_BUFFER_WV/20002140800_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140830_T1.rma $METEOSAT_B_BUFFER_WV/20002140800_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140900_T1.rma $METEOSAT_B_BUFFER_WV/20002140900_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002140930_T1.rma $METEOSAT_B_BUFFER_WV/20002140900_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002141000_T1.rma $METEOSAT_B_BUFFER_WV/20002141000_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002141030_T1.rma $METEOSAT_B_BUFFER_WV/20002141000_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002141100_T1.rma $METEOSAT_B_BUFFER_WV/20002141100_T1_WV.rma`
	`imdiff $METEOSAT_B_BUFFER/20002141130_T1.rma $METEOSAT_B_BUFFER_WV/20002141100_T1_WV.rma`

	imdiff $METEOSAT_B_BUFFER/20002141200_T1.rma $METEOSAT_B_BUFFER_WV/20002141200_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141230_T1.rma $METEOSAT_B_BUFFER_WV/20002141200_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141300_T1.rma $METEOSAT_B_BUFFER_WV/20002141300_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141330_T1.rma $METEOSAT_B_BUFFER_WV/20002141300_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141400_T1.rma $METEOSAT_B_BUFFER_WV/20002141400_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141430_T1.rma $METEOSAT_B_BUFFER_WV/20002141400_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141500_T1.rma $METEOSAT_B_BUFFER_WV/20002141500_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141530_T1.rma $METEOSAT_B_BUFFER_WV/20002141500_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141600_T1.rma $METEOSAT_B_BUFFER_WV/20002141600_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141630_T1.rma $METEOSAT_B_BUFFER_WV/20002141600_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141700_T1.rma $METEOSAT_B_BUFFER_WV/20002141700_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141730_T1.rma $METEOSAT_B_BUFFER_WV/20002141700_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141800_T1.rma $METEOSAT_B_BUFFER_WV/20002141800_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141830_T1.rma $METEOSAT_B_BUFFER_WV/20002141800_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141900_T1.rma $METEOSAT_B_BUFFER_WV/20002141900_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002141930_T1.rma $METEOSAT_B_BUFFER_WV/20002141900_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142000_T1.rma $METEOSAT_B_BUFFER_WV/20002142000_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142030_T1.rma $METEOSAT_B_BUFFER_WV/20002142030_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142100_T1.rma $METEOSAT_B_BUFFER_WV/20002142100_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142130_T1.rma $METEOSAT_B_BUFFER_WV/20002142130_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142200_T1.rma $METEOSAT_B_BUFFER_WV/20002142200_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142230_T1.rma $METEOSAT_B_BUFFER_WV/20002142230_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142300_T1.rma $METEOSAT_B_BUFFER_WV/20002142300_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142330_T1.rma $METEOSAT_B_BUFFER_WV/20002142330_T1_WV.rma
	imdiff $METEOSAT_B_BUFFER/20002142400_T1.rma $METEOSAT_B_BUFFER_WV/20002142400_T1_WV.rma
Date of test	09 08 2000
Status of test	Pass

Purpose of the test	Test the log files for the B format
Inputs	20002140100_T1_WV.rma and 20002140100_T1_WV.log in `$METEOSAT_B_BUFFER_WV`
Method	Type command line : `wv_interpolate $METEOSAT_B_BUFFER_WV $METEOSAT_B_BUFFER B -l` Check that the log of the output file has been correctly copied in the output directory
	Check that the log of the input file has been correctly copied in the `$METEOSAT_A_LOGS` directory
Outputs	Files in the output directory

Pass/fail criterion	cat /home/gerb/Buffers/Meteosat/B/Buffer/20002140100_T1.log:
	`Program=wv_interpolate Buffers/Meteosat/B/Buffer_WV Buffers/Meteosat/B/Buffer B -l -v`
	`Start time=Aug 09 15:01:42`
	`PID=21170`
	`BATS Lib Version=20002220110`
	`Input 0=Buffers/Meteosat/B/Buffer_WV/20002140100_T1_WV.rma`
	`End time=Aug 09 15:01:42`
	cat /home/gerb/Archive/Meteosat/B/logs/20002140100_T1_WV.log:
	`Program=transfer_ms7_B /home/gerb/Data/Meteosat/transfer_ms7_B_cfg.txt -v -l`
	`Start time=Aug 09 14:52:35`
	`PID=21139`
	`BATS Lib Version=20002220110`
	`Original name=/home/gerb/Buffers/Meteosat/In/20002141000bwwv013.pif`
	`End time=Aug 09 14:52:35`

Date of test	09 08 2000
Status of test	Pass

4.4 transfer_ms7

4.4.1 Description

The complete transfer of raw Meteosat data is the successive transfer of A format, B format and water vapour interpolation. This can be done by a simple shell script or by a C program in order to take advantage of all the log functions. The portability of C is also better than a shell script. The program “transfer_ms7” is this C program.

4.4.2 Help

4.4.3 Short help

```
Usage:
         transfer_ms7 [options]

   Options:
     -h: display a short help

     -H: display an extensive help

     -v: verbose mode

     -d: removes input files

     -l: create a log for each processed file

     -A: transfer the A format (default is A and B format)
```

```
      -B: transfer the B format (default is A and B format)

       The function returns -1 if something went wrong, otherwise 0.

      Luis Gonzalez, March 2000, August 2000
```

4.4.4 Extensive help

```
Usage:
         transfer_ms7 [options]

    Options:
      -h: display a short help

      -H: display an extensive help

      -v: verbose mode

      -d: removes input files

      -l: create a log for each processed file

      -A: transfer the A format (default is A and B format)

      -B: transfer the B format (default is A and B format)


    This program is the successive call to, for the A format:
      rm -f $METEOSAT_A_IN/*a*ir008*.pif
      transfer_ms7_A $DATA/transfer_ms7_A_cfg.txt #del -n 1 #log #verbose
      rm -f $METEOSAT_A_BUFFER/*1830_T2.rma
      rm -f $METEOSAT_A_BUFFER/*1830_T2.log
      rm -f $METEOSAT_A_BUFFER/*2100_S1.rma
      rm -f $METEOSAT_A_BUFFER/*2100_S1.log
      wv_interpolate $METEOSAT_A_BUFFER_WV $METEOSAT_A_BUFFER A #verbose #log
    where #del     is -d if the option has been set or is empty otherwise
          #verbose is -v if the option has been set or is empty otherwise
          #log     is -l if the option has been set or is empty otherwise

    For the B format:
      transfer_ms7_B $DATA/transfer_ms7_B_cfg.txt #del -n 1 #log #verbose
      rm -f $METEOSAT_B_BUFFER/*1930_S1.rma
      rm -f $METEOSAT_B_BUFFER/*1930_S1.log
      wv_interpolate $METEOSAT_B_BUFFER_WV $METEOSAT_B_BUFFER A #verbose #log
    where #del     is -d if the option has been set or is empty otherwise
          #verbose is -v if the option has been set or is empty otherwise
          #log     is -l if the option has been set or is empty otherwise

       The function returns -1 if something went wrong, otherwise 0.

      Luis Gonzalez, March 2000, August 2000
```

4.4.5 Test

Purpose of the test	Test the short help display
Inputs	No inputs
Method	Type the command line:“ `transfer_ms7 -h`” Check that the short help is displayed
Outputs	See § 4.4.3
Pass/fail criterion	The short help is displayed
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test the extensive help display
Inputs	No inputs
Method	Type the command line:“ `transfer_ms7 -H`” Check that the extensive help is displayed
Outputs	See § 4.4.3
Pass/fail criterion	The extensive help is displayed
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that bad option constructions are checked
Inputs	No inputs
Method	Type bad command lines : `transfer_ms7 -x, ...` Check that the an error message is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed for each bad option The status (available trough “`echo $status`”) is -1
Date of test	10 08 2000
Status of test	Pass

4.4.5.1 Test for the Meteosat A format image The directory `$METEOSAT_A_IN` has the following files: 20002140100aiwir010.pif, 20002140100aiwwv014.pif, 20002140200aiwir010.pif, 20002140200aiwwv014.pif, 20002140300aiwir010.pif, 20002140300aiwwv014.pif, 20002140400aiwir010.pif, 20002140400aiwwv014.pif, 20002140500aiwir010.pif, 20002140500aiwwv014.pif, 20002140600aivhir010.pif, 20002140600aivhvis009.pif, 20002140630awwv014.pif, 20002140700aivhir010.pif, 20002140700aivhvis009.pif, 20002140800aivhir010.pif, 20002140800aivhvis009.pif, 20002140900aivhir010.pif, 20002140900aivhvis009.pif, 20002140930awwv014.pif, 20002141000aivhir010.pif, 20002141000aivhvis009.pif, 20002141100aivhir010.pif, 20002141100aivhvis009.pif, 20002141200aivhir010.pif, 20002141200aivhvis009.pif, 20002141230awwv014.pif, 20002141300aivhir010.pif, 20002141300aivhvis009.pif, 20002141400aivhir010.pif, 20002141400aivhvis009.pif, 20002141500aivhir010.pif, 20002141500aivhvis009.pif, 20002141530awwv014.pif, 20002141600aivhir010.pif, 20002141600aivhvis009.pif, 20002141700aivhir010.pif, 20002141700aivhvis009.pif, 20002141800aivhir010.pif, 20002141800aivhvis009.pif, 20002141830aiwir010.pif, 20002141830aiwwv014.pif, 20002141900aivhir010.pif, 20002141900aivhvis009.pif, 20002142000aiwir010.pif, 20002142000aiwwv014.pif, 20002142100aivhir010.pif, 20002142100aivhvis009.pif, 20002142200aiwir010.pif, 20002142200aiwwv014.pif, 20002142300aiwir010.pif, 20002142300aiwwv014.pif, 20002142400aiwir010.pif, 20002142400aiwwv014.pif

The environment variables are :

```
METEOSAT_A_IN=/home/gerb/Buffers/Meteosat/In
METEOSAT_A_BUFFER=/home/gerb/Buffers/Meteosat/A/Buffer
METEOSAT_A_BUFFER_WV=/home/gerb/Buffers/Meteosat/A/Buffer_WV
DATA_METEOSAT=/home/gerb/Data/Meteosat
```

Purpose of the test	Test the correct execution for the A format
Inputs	One day of Meteosat raw data in the A format

Method	Save the input data in a different directory
	Type command line until all the data is processed: “`transfer_ms7 -d -l -A -v`“
	Save the results in a different directory:
	`cp -r $METEOSAT_A_BUFFER /home/gerb/test/$METEOSAT_A_BUFFER`
	`cp -r $ARCHIVE_METEOSAT/A/rawvis /home/gerb/test/$ARCHIVE_METEOSAT/A/rawvis`
	`cp -r $ARCHIVE_METEOSAT/A/rawir /home/gerb/test/$ARCHIVE_METEOSAT/A/rawir`
	`cp -r $ARCHIVE_METEOSAT/A/rawwv /home/gerb/test/$ARCHIVE_METEOSAT/A/rawwv`
	`cp -r $METEOSAT_A_LOGS /home/gerb/test/$METEOSAT_A_LOGS`
	Copy the input data in the input directory
	Type the commands:
	`rm -f $METEOSAT_A_IN/*a*ir008*.pif`
	`transfer_ms7_A $DATA_METEOSAT/transfer_ms7_A_cfg.txt -d -n 1 -l -v`
	`rm -f $METEOSAT_A_BUFFER/*1830_T2.rma`
	`rm -f $METEOSAT_A_BUFFER/*1830_T2.log`
	`rm -f $METEOSAT_A_BUFFER/*2100_S1.rma`
	`rm -f $METEOSAT_A_BUFFER/*2100_S1.log`
	`wv_interpolate $METEOSAT_A_BUFFER_WV $METEOSAT_A_BUFFER A -v -l`
	Compare the results:
	`diff $METEOSAT_A_BUFFER /home/gerb/test/$METEOSAT_A_BUFFER`
	`diff $ARCHIVE_METEOSAT/A/rawvis /home/gerb/test/$ARCHIVE_METEOSAT/A/rawvis`
	`diff $ARCHIVE_METEOSAT/A/rawir /home/gerb/test/$ARCHIVE_METEOSAT/A/rawir`
	`diff $ARCHIVE_METEOSAT/A/rawwv /home/gerb/test/$ARCHIVE_METEOSAT/A/rawwv`
	`diff $METEOSAT_A_LOGS /home/gerb/test/$METEOSAT_A_LOGS`

Outputs	Files in the output directory
Pass/fail criterion	The status (available trough “`echo $status`”) is 0 There are no differences between the images. The log files contains equivalent information: input files, parameters, ... are identical but PID, Start time, ... are different.
Date of test	10 08 2000
Status of test	Pass

4.4.5.2 Test for the Meteosat B format image The directory `$METEOSAT_B_IN` has the following files: 20002140030biwir012.pif, 20002140030biwwv013.pif, 20002140100biwir012.pif, 20002140100biwwv013.pif, 20002140130biwir012.pif, 20002140130biwwv013.pif, 20002140200biwir012.pif, 20002140200biwwv013.pif, 20002140230biwir012.pif, 20002140230biwwv013.pif, 20002140300biwir012.pif, 20002140300biwwv013.pif, 20002140330biwir012.pif, 20002140330biwwv013.pif, 20002140400biwir012.pif, 20002140400biwwv013.pif, 20002140430biwir012.pif, 20002140430biwwv013.pif, 20002140500bivir012.pif, 20002140500bivvis011.pif, 20002140530bivir012.pif, 20002140530bivvis011.pif, 20002140600bivir012.pif, 20002140600bivvis011.pif, 20002140600bwwv013.pif, 20002140630bivir012.pif, 20002140630bivvis011.pif, 20002140700bivir012.pif, 20002140700bivvis011.pif, 20002140700bwwv013.pif, 20002140730bivir012.pif, 20002140730bivvis011.pif, 20002140800bivir012.pif, 20002140800bivvis011.pif, 20002140800bwwv013.pif, 20002140830bivir012.pif, 20002140830bivvis011.pif, 20002140900bivir012.pif, 20002140900bivvis011.pif, 20002140900bwwv013.pif, 20002140930bivir012.pif, 20002140930bivvis011.pif, 20002141000bivir012.pif, 20002141000bivvis011.pif, 20002141000bwwv013.pif, 20002141030bivir012.pif, 20002141030bivvis011.pif, 20002141100bivir012.pif, 20002141100bivvis011.pif, 20002141100bwwv013.pif, 20002141130bivir012.pif, 20002141130bivvis011.pif, 20002141200bivir012.pif, 20002141200bivvis011.pif, 20002141200bwwv013.pif, 20002141230bivir012.pif, 20002141230bivvis011.pif, 20002141300bivir012.pif, 20002141300bivvis011.pif, 20002141300bwwv013.pif, 20002141330bivir012.pif, 20002141330bivvis011.pif, 20002141400bivir012.pif, 20002141400bivvis011.pif, 20002141400bwwv013.pif, 20002141430bivir012.pif, 20002141430bivvis011.pif, 20002141500bivir012.pif, 20002141500bivvis011.pif, 20002141500bwwv013.pif, 20002141530bivir012.pif, 20002141530bivvis011.pif, 20002141600bivir012.pif, 20002141600bivvis011.pif, 20002141600bwwv013.pif, 20002141630bivir012.pif, 20002141630bivvis011.pif, 20002141700bivir012.pif, 20002141700bivvis011.pif, 20002141700bwwv013.pif, 20002141730bivir012.pif, 20002141730bivvis011.pif, 20002141800bivir012.pif, 20002141800bivvis011.pif, 20002141800bwwv013.pif, 20002141830bivir012.pif, 20002141830bivvis011.pif, 20002141900bivir012.pif, 20002141900bivvis011.pif, 20002141900bwwv013.pif, 20002141930bivir012.pif, 20002141930bivvis011.pif, 20002142000biwir012.pif, 20002142000biwwv013.pif, 20002142030biwir012.pif, 20002142030biwwv013.pif, 20002142100biwir012.pif, 20002142100biwwv013.pif, 20002142130biwir012.pif, 20002142130biwwv013.pif, 20002142200biwir012.pif, 20002142200biwwv013.pif, 20002142230biwir012.pif, 20002142230biwwv013.pif, 20002142300biwir012.pif, 20002142300biwwv013.pif, 20002142330biwir012.pif, 20002142330biwwv013.pif, 20002142400biwir012.pif, 20002142400biwwv013.pif

The environment variables are :

```
METEOSAT_B_IN=/home/gerb/Buffers/Meteosat/In
METEOSAT_B_BUFFER=/home/gerb/Buffers/Meteosat/B/Buffer
METEOSAT_B_BUFFER_WV=/home/gerb/Buffers/Meteosat/B/Buffer_WV
DATA_METEOSAT=/home/gerb/Data/Meteosat
```

Purpose of the test	Test the correct execution for the B format
Inputs	One day of Meteosat raw data in the B format

Method	Save the input data in a different directory
	Type command line until all the data is processed: "`transfer_ms7 -d -l -B -v`"
	Save the results in a different directory:
	`cp -r $METEOSAT_B_BUFFER /home/gerb/test/$METEOSAT_B_BUFFER`
	`cp -r $ARCHIVE_METEOSAT/B/rawvis /home/gerb/test/$ARCHIVE_METEOSAT/B/rawvis`
	`cp -r $ARCHIVE_METEOSAT/B/rawir /home/gerb/test/$ARCHIVE_METEOSAT/B/rawir`
	`cp -r $ARCHIVE_METEOSAT/B/rawwv /home/gerb/test/$ARCHIVE_METEOSAT/B/rawwv`
	`cp -r $METEOSAT_B_LOGS /home/gerb/test/$METEOSAT_B_LOGS`
	Copy the input data in the input directory
	Type the commands:
	`transfer_ms7_B $DATA_METEOSAT/transfer_ms7_B_cfg.txt -d -n 1 -l -v`
	`rm -f $METEOSAT_A_BUFFER/*1930_S1.rma`
	`rm -f $METEOSAT_A_BUFFER/*1930_S1.log`
	`wv_interpolate $METEOSAT_B_BUFFER_WV $METEOSAT_B_BUFFER B -v -l`
	Compare the results:
	`diff $METEOSAT_B_BUFFER /home/gerb/test/$METEOSAT_B_BUFFER`
	`diff $ARCHIVE_METEOSAT/B/rawvis /home/gerb/test/$ARCHIVE_METEOSAT/B/rawvis`
	`diff $ARCHIVE_METEOSAT/B/rawir /home/gerb/test/$ARCHIVE_METEOSAT/B/rawir`
	`diff $ARCHIVE_METEOSAT/B/rawwv /home/gerb/test/$ARCHIVE_METEOSAT/B/rawwv`
	`diff $METEOSAT_B_LOGS /home/gerb/test/$METEOSAT_B_LOGS`

Outputs	Files in the output directory
Pass/fail criterion	The status (available trough "echo $status") is 0 There are no differences between the images. The log files contains equivalent information: input files, parameters, ... are identical but PID, Start time, ... are different.
Date of test	10 08 2000
Status of test	Pass

4.5 toa_fluxes

4.5.1 Description

The SEVIRI processing is composed by the successive call to several programs. These programs are mainly scientific oriented and realised with development purpose in mind. Operational constraints implies additional management. This includes computer resource availability check that is realised by startproc. This also includes additional features as log files for processes and data. The core SEVIRI processing programs are not tested here (see ref [TS]).

4.5.2 Help

4.5.2.1 Short help

```
USAGE:      toa_fluxes A|B|S [OPTIONS]

 A : Meteosat A format
 B : Meteosat B format
 S : SEVIRI

OPTIONS:
 -h display this simple help
 -H display an extensive help
 -v verbose mode
 -l 0|1|2 use log files to read|write|read and write data.

 The return status is -1 if something went wrong, 0 otherwise.

 Luis Gonzalez, August 2000
```

4.5.2.2 Extensive help

```
USAGE:      toa_fluxes A|B|S [OPTIONS]

 A : Meteosat A format
 B : Meteosat B format
 S : SEVIRI

OPTIONS:
 -h display this simple help
 -H display an extensive help
 -v verbose mode
 -l 0|1|2 use log files to read|write|read and write data.

DESCRIPTION:
 This is a C version of the batch file toa_fluxes.bat.
 This batch can be summarised by the successive call to
    4 programs:
    1 - imager_process
    2 - spectral_mod
    3 - rad2fluxes
    4 - imager_clean
 The differences are:
    - the data selection is not a separate program
    - the log files can be tested and created
    - only one input file is treated


 If the option -l 0|2 is used, the log files of the input
 data are checked.
 If the option -l 1|2 is used, the log files of the output
 data are created.

 The name of a log file is the same as the data file but
 with "log" or "err" as suffix
 If data has been correctly generated, the suffix is "log".
 If something failed during data generation, the suffix is
 "err".

 If the option -l 0 is used, the input is not processed if:
   - the output data already exists
   - the existence of an error file for at least one of
     the input files

 If the option -l 1 is used, the input is not processed if:
   - the output data already exists
   - the output log file is an error file

 If the option -l 2 is used, the input is not processed if:
   - the output data already exists
```

```
    - the output log file is an error file
    - the existence of an error file for at least one of
      the input files

  Additionally, the program creates a process log file: a log
  where information about the process is stored (pid, name,
  start time, ...). This file is removed if the process ends
  without error. The error information is also redirected
  to this file. The file is created in the directory $LOG
  if it is set and defaults to /tmp

  The following environment variables must be defined for
  the A(B,S) format:
   METEOSAT_A_TMP (METEOSAT_B_TMP, SEVIRI_TMP):
       directory where temporary files are written
       (they are removed after end of processing)
   METEOSAT_A_BUFFER (METEOSAT_B_BUFFER, SEVIRI_BUFFER) :
       directory of input files
   DATA_METEOSAT (DATA_METEOSAT, DATA_SEVIRI):
       directory where configuration files are located
       The configuration file name is ms7_A_cfg.txt
       (ms7_B_cfg.txt, seviri_cfg.txt)

  The return status is -1 if something went wrong, 0 otherwise.

  Luis Gonzalez, August 2000
```

4.5.3 Test of the program

Purpose of the test	Test the short help display
Inputs	No inputs
Method	Type the command line:“ `toa_fluxes -h`” Check that the short help is displayed
Outputs	See § 4.5.2.1
Pass/fail criterion	The short help is displayed
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test the extensive help display
Inputs	No inputs
Method	Type the command line:“ `toa_fluxes -H`” Check that the extensive help is displayed
Outputs	See § 4.5.2.2
Pass/fail criterion	The extensive help is displayed
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that bad option constructions are checked
Inputs	No inputs
Method	Type bad command lines : `toa_fluxes C`, `toa_fluxes -x`, `toa_fluxes A -l 3`, ... Check that the an error message/file is generated
Outputs	Error message
Pass/fail criterion	An error message is displayed/write on the process log file for each bad option The status (available trough "`echo $status`") is -1
Date of test	10 08 2000
Status of test	Pass

4.5.3.1 Test the A format

Purpose of the test	Test that data is not reprocessed
Inputs	Meteosat A raw data (20002140100aiwir010.pif , 20002140100aiwwv014.pif)
Method	Start a process by typing the command line:" `transfer_ms7 A -l -d; toa_fluxes A -v` " Start a process by typing the command line:"`toa_fluxes A -v`"
Outputs	Images of fluxes
Pass/fail criterion	The second command line does not start any processing
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if log files are missing with option "`-l 0`"
Inputs	Meteosat A raw data (20002140100aiwir010.pif , 20002140100aiwwv014.pif)
Method	Start a process by typing the command line:" `transfer_ms7 A -d -v`" Start a process by typing the command line:" `toa_fluxes A -v -l 0`"
Outputs	No output
Pass/fail criterion	The command line " `toa_fluxes A -v -l 0`" does not start any processing
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if log files are missing with option "`-l 2`"
Inputs	Meteosat A raw data (20002140100aiwir010.pif , 20002140100aiwwv014.pif)
Method	Start a process by typing the command line:" `transfer_ms7 A -d -v`" Start a process by typing the command line:" `toa_fluxes A -v -l 2`"
Outputs	No output
Pass/fail criterion	The command line " `toa_fluxes A -v -l 2`" does not start any processing
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if an input log file is incorrect (suffix .err) with option "`-l 0`"
Inputs	Meteosat A raw data (20002140100aiwir010.pif , 20002140100aiwwv014.pif)

Method	Start a process by typing the command line:"`transfer_ms7 A -d -l -v`"
	`mv /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.log`
	`/home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.err`
	Start a process by typing the command line:"`toa_fluxes A -v -l 0`"

Outputs	No output
Pass/fail criterion	The command line " `toa_fluxes A -v -l 0`" does not start any processing
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if an input log file is incorrect (suffix .err) with option "`-l 2`"
Inputs	Meteosat A raw data (20002140100aiwir010.pif , 20002140100aiwwv014.pif)

Method	Start a process by typing the command line:"`transfer_ms7 A -d -l -v`"
	`mv /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.log`
	`/home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.err`
	Start a process by typing the command line:"`toa_fluxes A -v -l 2`"

Outputs	No output
Pass/fail criterion	The command line " `toa_fluxes A -v -l 2`" does not start any processing
Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test that a process log file is created if something fails
Inputs	Meteosat A raw data (20002140100aiwir010.pif , 20002140100aiwwv014.pif)

Method	Start a process by typing the command line:"`transfer_ms7 A -d -l -v`"
	Create a dirty input. For example:
	`tail -c 3200256 /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.rma > ~/tmp.rma`
	`tail -c 3200256 /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.rma >> ~/tmp.rma`
	`mv ~/tmp.rma /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.rma`
	Start a process by typing the command line:"`toa_fluxes A -v -l 2`"

Outputs	No output

Pass/fail criterion	The command line " `toa_fluxes A -v -l 2`" does not start any processing and a process log file is created:
	cat /home/gerb/log/toa_fluxes.10196:
	`Start time=Aug 10 15:43:55`
	`ERROR:'/planet/library/src/lib/lib_gerb/src/test_im.c':`
	`line 47:'IP_ImageHeaderTest':imh->width!=width !`
	`ERROR:'/home/gerb/gerblib/src/lib/lib_app/src/_imager_process.c':`
	`line 267:'toa_fluxes: imager_process': bad image /home/gerb/Buffers/Meteosat/A/Buffer/20002140100_T1.rma !`
	`ERROR : '/home/gerb/gerblib/src/app/Batch/toa_fluxes.c':`
	`line 399:'toa_fluxes':imager_process failed !`

Date of test	10 08 2000
Status of test	Pass

Purpose of the test	Test the correct execution of the A Meteosat format Test the output file log creation
Inputs	Meteosat A raw data for a complete day (see § 4.4.5.1)
Method	Start a process by typing the command line:“ `transfer_ms7 A -l -d; toa_fluxes A -v -l 2`” and repeat it until all the data is processed Check that the outputs are identical to the development version outputs Check that log files are created.
Outputs	Images of fluxes

Pass/fail criterion	The outputs are identical to the development version outputs
	A log file is created for each output file. For the solar flux:
	`2000214xx00_sol_flux_int2.rma.gz` where `xx` takes the values `[06,07,...,19]`
	For the thermal flux:
	`2000214xx00_th_flux_int2.rma.gz` where `xx` takes the values `[01,02,...,24]`

Date of test	10 08 2000
Status of test	Pass

4.5.3.2 Test the B format

Purpose of the test	Test that data is not reprocessed
Inputs	Meteosat B raw data (20002140030biwir012.pif, 20002140030biwwv013.pif)
Method	Start a process by typing the command line:“ `transfer_ms7 B -l -d; toa_fluxes B -v` ” Start a process by typing the command line:“`toa_fluxes B -v`”
Outputs	Image of fluxes
Pass/fail criterion	The second command line does not start any processing
Date of test	11 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if log files are missing with option “`-l 0`”
Inputs	Meteosat B raw data (20002140030biwir012.pif, 20002140030biwwv013.pif)
Method	Start a process by typing the command line:“ `transfer_ms7 B -d -v`” Start a process by typing the command line:“ `toa_fluxes B -v -l 0`”
Outputs	No output
Pass/fail criterion	The command line “ `toa_fluxes B -v -l 0`” does not start any processing
Date of test	11 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if log files are missing with option “`-l 2`”
Inputs	Meteosat B raw data (20002140030biwir012.pif, 20002140030biwwv013.pif)
Method	Start a process by typing the command line:“ `transfer_ms7 B -d -v`” Start a process by typing the command line:“ `toa_fluxes B -v -l 2`”
Outputs	No output
Pass/fail criterion	The command line “ `toa_fluxes B -v -l 2`” does not start any processing
Date of test	11 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if an input log file is incorrect (suffix .err) with option "`-l 0`"
Inputs	Meteosat B raw data (20002140030biwir012.pif, 20002140030biwwv013.pif)
Method	Start a process by typing the command line:" `transfer_ms7 B -d -l -v`" `mv /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.log /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.err` Start a process by typing the command line:" `toa_fluxes B -v -l 0`"
Outputs	No output
Pass/fail criterion	The command line " `toa_fluxes B -v -l 0`" does not start any processing
Date of test	11 08 2000
Status of test	Pass

Purpose of the test	Test that data is not processed if an input log file is incorrect (suffix .err) with option "`-l 2`"
Inputs	Meteosat B raw data (20002140030biwir012.pif, 20002140030biwwv013.pif)
Method	Start a process by typing the command line:" `transfer_ms7 B -d -l -v`" `mv /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.log /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.err` Start a process by typing the command line:" `toa_fluxes B -v -l 2`"
Outputs	No output
Pass/fail criterion	The command line " `toa_fluxes B -v -l 2`" does not start any processing
Date of test	11 08 2000
Status of test	Pass

Purpose of the test	Test that a process log file is created if something fails
Inputs	Meteosat B raw data (20002140030biwir012.pif, 20002140030biwwv013.pif)

Method	Start a process by typing the command line:" `transfer_ms7 B -d -l -v`"
	Create a dirty input. For example:
	`tail -c 1555264 /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.rma > ~/tmp.rma`
	`tail -c 1555264 /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.rma >> ~/tmp.rma`
	`mv ~/tmp.rma /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.rma`
	Start a process by typing the command line:" `toa_fluxes B -v -l 2`"

Outputs	No output

Pass/fail criterion	The command line " `toa_fluxes B -v -l 2`" does not start any processing and a process log file is created:
	cat /home/gerb/log/toa_fluxes.17388:
	`Start time=Aug 11 07:57:32`
	`ERROR : '/planet/library/src/lib/lib_gerb/src/test_im.c' :`
	`line 47 : 'IP_ImageHeaderTest' : imh->width!=width !`
	`ERROR : '/home/gerb/gerblib/src/lib/lib_app/src/_imager_process.c' :`
	`line 267 : 'toa_fluxes: imager_process' : bad image /home/gerb/Buffers/Meteosat/B/Buffer/20002140030_T1.rma !`
	`ERROR : '/home/gerb/gerblib/src/app/Batch/toa_fluxes.c' :`
	`line 399 : 'toa_fluxes' : imager_process failed !`

Date of test	11 08 2000
Status of test	Pass

Purpose of the test	Test the correct execution of the B Meteosat format Test the output file log creation
Inputs	Meteosat B raw data for a complete day (see § 4.4.5.2)
Method	Start a process by typing the command line:“ `transfer_ms7 B -l -d; toa_fluxes B -v -l 2`” and repeat it until all the data is processed Check that the outputs are identical to the development version outputs Check that log files are created.
Outputs	Images of fluxes

Pass/fail criterion	The outputs are identical to the development version outputs
	A log file is created for each output file. For the solar flux:
	`2000214xx00_sol_flux_int2.rma.gz` where `xx` takes the values `[0500,0530,0600,...,1900]`
	For the thermal flux:
	`2000214xx00_th_flux_int2.rma.gz` where `xx` takes the values `[0030,0100,...,2400]`

Date of test	11 08 2000
Status of test	Pass

5 Tests to be done

Many tests are still missing because of the software and/or hadware is not yet available or not integrated:

Tests to be done	
SEVIRI Processing (toa_fluxes S)	Software and hadware available since 01 july, still to be done
Archive(*)	Software available but not integrated, hadware not available
HDF	Software available but not integrated
ARG /BARG product generation	Software not available

(*): Since MSG will not be launched before January 2002, we decided to postpone the purchase of the archiving system.

6 Bibliography

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