MISER TOOL – "FIXHIST".

1. INTRODUCTION

One of the main problems on the fields is a synchronization data values from the end of the previously day with data from the next day beginning. This problem can be occurred for any case. Some times it coming because of information delays which are a consequence of the Host and RTU hardware or connection problem. In Systems where all connections are doing by RTU initiative calling that problem is a permanent one.

The tool, which created for solving this problem, has been named "FIXHIST". It has three main branch lines:

1. READ line, which allow displaying one Point history record sequentially between SINCE end BEFORE dates or on particularly DATE. The Point can be given by it Acronym or by it Record number. The result can be given on screen, printer or into the specified file. Each record of the history file is displayed in one line sequentially.
2. FIXING DST bits line, which allow correcting DST bit for the particular history records for whole database. Like READ line, the FIXING DST one can work on time period between SINCE and BEFORE, OR on inside of the particular DATE. Each record of the history file is read and the DST bit is compared with the one derived from the DST table/rules. The errors are counted up and numbers of errors have been displayed. It also does correction of the DST bits. This line has a very important VERIFY feature, which allow to show report errors with out making any corrections in it.
3. FIXING MIDNIGHT VALUES line, which allows updating the midnight records for whole database, by using values from late receiving data, and values which beyond to the previous day. It points out errors in Midnight record values and allows for correction. In the given day, this program reads the last COS (Change Of Status) of a point from the earlier day's history file and compares it with the midnight record of the given day. Like FIXHIST DST line, it can work in particularly date or on the range of them. It has a similar with FIXHIST DST bits line feature VERIFY. Additionally it has a very important EXCLUDE feature, which allow make a protection for some data from midnight fixing when it is necessary.

2.USING "FIXHIST" TOOL.

Before to start using **"FIXHIST" TOOL** you need to invoke this program by enter the following command:

$ Fixhist :== $mnet$exe:fixhist <enter> (1)

After that you can make a choice what line of FIXHIST have to be a select. There are three basic switches that tell the FIXHIST program what to do.

For a READ operation use: $ FIXHIST /READ (2)

For a DST bit correction operation use: $ FIXHIST /DST (3)

For an updating the Midnight records use: $ FIXHIST /MID (4)

Note:

1. *Read is the default operation and therefore, if all the basic switches are omitted, the FIXHIST will just read the history files.*
2. *System remembers the fixhist definition (1) during the open section. After it closing and starting a new terminal section you will need invoking (1) to repeat.*

2.1. USING FIXHIST/READ

Using the following switches in any orders can specify it using:

2.1.1 Switch: /CN (5)

By default the program displays a page and then displays a '$' on the last line. If a 'q' or a 'Q' is entered, the program is terminated. Otherwise, the next page is displayed. On specifying the /CN switch, the program will not wait for a user interaction.

2.1.2. Switch: /SINCE=dd-mon-year (6)
Example */since=1-Feb-2001.*

After the date has been specified the FIXHIST program will start display the history records from the 00:00 hours of specified date sequentially. This program opens up the history file and reads the records from top to bottom. Therefore, mentioning a time portion of the /SINCE portion has no meaning. Mention only the day portion.

2.1.3. Switch: /BEFORE=dd-mon-year (7)
Example */before=4-Feb-2000.*

After that switch is specified the FIXHIST program will display the history records until the specified date. By default it display a history records by the current date.

2.1.4. Switch: /DATE=dd-mon-year (8)

Displays the history for the specified date.

2.1.5. Switches: /OUTPUT=output_file_name (9)
/FL=output_file_name (10)
Example */output=[XYZ.DATA]LEVEL.DAT*

Outputs the display items into the specified file.

2.1.6. Switch: /SP (11)

Outputs the display items to the printer.

2.1.7. Switch: /ACR=acronym (12)

This switch will make the FIXHIST to display all the records for the specified point, which has been defined by it acronym.

2.1.8. Switch: /NU=point_record_number (13)

This switch will make the FIXHIST to display all the records for the specified point, which has been defined by it point record number.

2.2 USING FIXHIST/DST

2.2.1. When the /DST switch is specified, the FIXHIST program reports/corrects the error in the DST bits in the history records. It derives the DST bit for the particular history record based on the time stamp in the record and the DST tables/rules. If it finds that the DST bit is incorrect, it either reports or corrects this depending on having or not a /VERIFY switch.

2.2.2. The switches that can be specified with this option are: (5), (6), (7), (8), (9), (10), (11), (12), (13).

2.2.3 Switch: /VERIFY (14)

Forced to show only report the errors (if any) and no allow making any correction. Omission of this switch will make the program to correct the DST bits. The message which displayed the verify result will be as follows:

------- DST bit verification over for DD-MON-YEAR Error count = n

where 'n' is the number of errors.

2.3. USING FIXHIST/MID

2.3.1. When the /MID switch is specified, the FIXHIST program checks/updates the midnight record for a particular day. If the day is specified as 'today', this program will open up yesterday's file and get each point's last history record and check the value against the value of the midnight record of today's history file. If these two values are different, update or reporting is done.

2.3.2. The switches that can be specified with this option are: (5), (6), (7), (8), (9), (10), (11), (12), (13), (14).

2.3.3. Switch: /EXCLUDE=exclude_file_name (15)
Example */exclude=[XYZ.DATA]EXCLUDE_COUNT.DAT*

This switch is used to specify a text file, which contains a list of acronyms that will be excluded from the update operation.

The exclude file contains a list of points, which are to be excluded while updating or verifying. The file format is as follows: *Example*

acronym 1<enter>	WAL-DAY-COUN
acronym 2<enter>	WAL-NIGHT-COUN
:	:
:	:
acronym N<enter.>	WAL-MORNING-COUN

==========

EXAMPLES OF USING FIXHIST

1. Invoking FIXHIST

```
UNJMVB$ FIXHIST:==$MNET$EXE:FIXHIST
UNJMVB$
```

2. Examples of using a READ line

Example of using a READ line with /NU, /SINCE, and /BEFORE switches.

Directive:

```
UNJMVB$ fixhist/read/nu=6/since=2-jan-2001/before=4-jan-2001
```

Response:

```
History Date:  2-JAN-2001
-------------------------------------------------------------------------------
File Header:        cmprsd      edit        maxrec
                         0         0         14534
Time                 Pt.Num      Value          type      Intrvl   qual   alarm
-------------------------------------------------------------------------------
00:00:00.0000(1)       6        88.5405884  H_INIT         0        0     *
00:04:00.0000(1)       6        88.5476456  H_ASYNC        0        0     *
00:09:00.0000(1)       6        88.5405884  H_ASYNC        0        0     *
00:39:00.0000(1)       6        88.5335312  H_ASYNC        0        0     *
00:44:00.0000(1)       6        88.5405884  H_ASYNC        0        0     *
```

Example of using a READ line with /ACR and /DATE switches.

Directive:
UNJMVB$ fixhist/read/acr=WEST-RES-LVL/date=3-jan-2001

Response:
History Date: 3-JAN-2001

```
---------------------------------------------------------------------------
File Header:        cmprsd      edit        maxrec
                      0         0         14534
Time                  Pt.Num      Value       type        Intrvl   qual   alarm
---------------------------------------------------------------------------
00:00:00.0000(1)      9        21.4209404  H_INIT        0       0      0
00:30:00.0000(1)      9        21.4362030  H_ASYNC       0       0      0
00:45:00.0000(1)      9        21.4209404  H_ASYNC       0       0      0
01:00:00.0000(1)      9        21.4285717  H_ASYNC       0       0      0
03:30:00.0000(1)      9        21.4362030  H_ASYNC       0       0      0
04:30:00.0000(1)      9        21.4438343  H_ASYNC       0       0      0
05:00:00.0000(1)      9        21.4362030  H_ASYNC       0       0      0
05:45:00.0000(1)      9        21.4438343  H_ASYNC       0       0      0
06:30:00.0000(1)      9        21.4362030  H_ASYNC       0       0      0
?
```

2.3 Example of using a READ line with /ACR , /DATE and FL switches.

Directive:
UNJMVB$ fixhist/read/acr=WEST-RES-LVL/date=3-jan-2001/fl=LVL_WEST.DAT

Response:
Data in the file which name is LVL_WEST.DAT

Typing a file contence.
UNJMVB$ TYPE/PAGE LVL_WEST.DAT
History Date: 3-JAN-2001

```
---------------------------------------------------------------------------
File Header:        cmprsd      edit        maxrec
                      0         0         14534
Time                  Pt.Num      Value       type        Intrvl   qual   alarm
---------------------------------------------------------------------------
00:00:00.0000(1)      9        21.4209404  H_INIT        0       0      0
00:30:00.0000(1)      9        21.4362030  H_ASYNC       0       0      0
00:45:00.0000(1)      9        21.4209404  H_ASYNC       0       0      0
01:00:00.0000(1)      9        21.4285717  H_ASYNC       0       0      0
03:30:00.0000(1)      9        21.4362030  H_ASYNC       0       0      0
```

```
04:30:00.0000(1)    9      21.4438343  H_ASYNC    0    0    0
05:00:00.0000(1)    9      21.4362030  H_ASYNC    0    0    0
05:45:00.0000(1)    9      21.4438343  H_ASYNC    0    0    0
06:30:00.0000(1)    9      21.4362030  H_ASYNC    0    0    0
                Press RETURN to continue
```

3. Examples of using a MID line

Example of using a MID line with /SINCE, BEFORE and VERIFY switches.

Directive:

```
UNJMVB$ fixhist/mid/since=3-jan-2001/before=4-jan-2001/verify
```

AS a response are given only report of the errors with out any corrections:

```
Midnight record different for point number     17
  prev. value =     122.2069550  mid. value =     121.7338181
Midnight record different for point number     18
  prev. value =      79.5299454  mid. value =      76.7299423
Midnight record different for point number     81
  prev. value =      23.8095093  mid. value =      29.3040161
Midnight record different for point number     82
  prev. value =     104.5177002  mid. value =     104.2734985
Midnight record different for point number     93
  prev. value =      63.4157562  mid. value =      62.1337051
Midnight record different for point number     94
  prev. value =      21.1080589  mid. value =      21.0622711
Midnight record different for point number     96
  prev. value =       0.0075321  mid. value =      -0.0000992
Midnight record different for point number     98
  prev. value =      54.7777786  mid. value =      54.7155075
Midnight record different for point number    106
  prev. value =      57.4175797  mid. value =      56.9291840
Midnight record different for point number    108
  prev. value =      82.0000000  mid. value =      81.9899979
Midnight record different for point number    119
  prev. value =     100.0000000  mid. value =      99.3589783
```

3.2 Example of using a MID line with /SINCE and BEFORE switches.

Directive:

```
UNJMVB$ fixhist/mid/since=3-jan-2001/before=4-jan-2001
```

Response show the result of point values updating:

```
Midnight rec updated for point      1 with value =      0.0000000
Midnight rec updated for point      2 with value =      0.0000000
Midnight rec updated for point      3 with value =      0.0000000
```

```
 Midnight rec updated for point       4 with value =       0.0000000
 Midnight rec updated for point       5 with value =       0.0000000
 Midnight rec updated for point       6 with value =      88.4417877
 Midnight rec updated for point       7 with value =      71.1706390
 Midnight rec updated for point       8 with value =      70.7161560
 Midnight rec updated for point       9 with value =      21.4209404
 Midnight rec updated for point      10 with value =      16.5384617
 Midnight rec updated for point      11 with value =     112.4542084
 Midnight rec updated for point      12 with value =      -0.0000999
 Midnight rec updated for point      13 with value =       0.0763168
 Midnight rec updated for point      14 with value =       0.0000000
 Midnight rec updated for point      15 with value =      94.9308853
 Midnight rec updated for point      16 with value =      20.1538467
 Midnight rec updated for point      17 with value =     122.2069550
 Midnight rec updated for point      18 with value =      79.5299454
 Midnight rec updated for point      19 with value =      18.3899994
```

3.3 Example of using a MID line with /DATE and EXCLUDE switches.

Directive:

```
 UNJMVB$ fixhist/mid/date=3-jan-2001/exclude=[unj.data]fixhist.dat
```

Response, asking for confirmation exclude file name:

```
Does ([UNJ.DATA]FIXHIST.DAT) contain excluded acronyms?   y/n
```

Confirmation

```
y
```

Printing information about exclude file contain.

```
 Exclude file contain     14 Acronym(s),
 from which      14  are valid Acronym(s).
Exclude file contain an Acronim ( DEF-PLANT-PMP )
Exclude file contain an Acronim ( DEF-PWTR-PMP  )
Exclude file contain an Acronim ( DEF-WWTR-PMP  )
Exclude file contain an Acronim ( DEF-RWTR-PMP  )
Exclude file contain an Acronim ( SPRI-RAIN-GAGE)
Exclude file contain an Acronim ( SPRI-LDEF-GAGE)
Exclude file contain an Acronim ( SPRI-STON-GAGE)
Exclude file contain an Acronim ( SPRI-TW20-GAGE)
Exclude file contain an Acronim ( STP-WDF-PMP   )
Exclude file contain an Acronim ( STP-FPF-PMP   )
Exclude file contain an Acronim ( SPRI-LDEF-LVL )
Exclude file contain an Acronim ( SPRI-LDEF-VOL )
Exclude file contain an Acronim ( WNYK-STRM-LVL )
Exclude file contain an Acronim ( WNYK-STRM-VOL )
```

Printing result information about updating result

```
 Midnight rec updated for point       1 with value =       0.0000000
 Midnight rec updated for point       2 with value =       0.0000000
```

```
Midnight rec updated for point      3 with value =      0.0000000
Midnight rec updated for point      4 with value =      0.0000000
Midnight rec updated for point      5 with value =      0.0000000
Midnight rec updated for point      6 with value =     88.4417877
```

3.4 Example of using a MID line with /DATE and EXCLUDE switches and with exclude file which contain some wrong acronyms.

Directive:

```
UNJMVB$ fixhist/mid/date=3-jan-2001/exclude=[unj.data]fixhist.dat
```

Response, asking for confirmation exclude file name:

```
Does ([UNJ.DATA]FIXHIST.DAT) contain excluded acronyms?   y/n
y
```

Response, result of acronyms existing analysis:

```
SPRI-RAIN-GAGi does not a valid ACR name in EXCLUDE file
SPRI-LDEF-GAGo does not a valid ACR name in EXCLUDE file
SPRI-STON-GAGu does not a valid ACR name in EXCLUDE file
SPRI-TW20-GAGc does not a valid ACR name in EXCLUDE file
 Exclude file contain     14 Acronym(s),
 from which      10  are valid Acronym(s).
 UNJMVB$
```