Monitoring and setting the AT Distributed Clock".
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ATDC is a simple program that runs on the Correlator Control Computer to set the MK VI AT Distributed Clock. It communicates with the ATDC either over ethernet, or over RS-232.
To invoke ATDC from the *OBSERVER* account type:

$atdc<RET>

Typing:
q<RET> to any question will quit the program.

One running, you will need to select the communications mode:
Communications mode:
1. - TCP/IP socket
2. - Terminal line [1]
The value in [] is the default value. Hitting <RET> will select this value. You may also enter any valid value.
If TCP/IP is selected you will be asked for the network name of the ATDC:

> *Node to connect to: [xxxxx]*
> The value in [] is the default value. Hitting <RET> will select this value. You may also enter any valid value, eg. mpclock.

If Terminal line is selected you will be asked for the terminal name that the ATDC is connected to:

> *Terminal name [mopra_atdc_port:]*
> The value in [] is the default value. Hitting <RET> will select this value. You may also enter any valid terminal port that the ATDC is connected to.

After selecting the communications mode, you will need to select the basic function to perform:
Function:
1. Clock Display
2. Clock Control
Selection [1]
The value in [] is the default value. Hitting <RET> will select this value. You may also enter any valid value.
Selecting 1 will produce a display of the clock data. This is updated about 2 times a second. To exit this display type **q** or if that does not work, **<CTRL>y**.
Selecting 2 will produce a further menu of options to control the ATDC. You will then be prompted for the Super User password. No operation that can alter the ATDC state can be performed without this password.
Enter SU password
Enter the current SU password, and hit **<RET>**

There are 8 functions currently available:
1 Set time, load and activate the IERSA table,
2 Set the time,
3 Load and activate the IERSA table,
4 Slide the clock's time,
5 Auto align the clock's time,
6 Set dUTC,
7 Reset the status,
8 Reboot the ATDC.

1. Set time, load and activate IERSA table.

This option sets the ATDC's time as well as loads and activates the IERSA table. The IERSA table contains the list of dUTC and dUT1 corrections for each value of MJD. The file containing the table needs to be located in the current working directory. See M. Kesteven for more details.
You will be prompted for the current value of dUTC:
Enter dUTC [31]
Type in the value or hit <RET> if value in [] is correct. This value will be used to calculate BAT from the current time.
Enter GMT time in DD MMM YYYY HH MM SS format or
hit <RET> for system time rounded up to a whole 10s + 10s.
If you hit **<RET>**, the current system time will be used (adjusted to GMT), with an additional 10 to 20 seconds added. This will give the user enough time be ready to hit <RET> at the right instant. Otherwise enter the time you want to start the ATDC, eg
4 apr 1998 13 12 00
After successfully entering the time you will be required to hit <RET> during the 1 second immediately following the instant the time becomes valid:
The following time will be sent to the ATDC
TIME - dd mmm yyy hh mm ss DUTC - xx
Hit <RET> to proceed, any other character to abort.
On the 1 second tick after receiving this time, the clock will restart from this new time.
After the time, has been set you will be prompted for the name if the IERSA file:
IERSA file? [at$ephem:iersa.file]
If you hit <RET> the value in [] will be used, otherwise type in the desired name. Upon hitting <RET> the file will be opened and the first 100 entries will be downloaded.

2. Set the time only.

You will be prompted for the current value of dUTC:
Enter dUTC [31]
Type in the value or hit <RET> if value in [] is correct. This value will be used to calculate BAT from the current time.
Enter GMT time in DD MMM YYYY HH MM SS format or
hit <RET> for system time rounded up to a whole 10s + 10s.
If you hit **<RET>**, the current system time will be used (adjusted to GMT), with an additional 10 to 20 seconds added. This will give the user enough time be ready to hit **<RET>** at the right instant. Otherwise enter the time you want to start the ATDC, eg
4 apr 1998 13 12 5
After successfully entering the time you will be required to hit **<RET>** during the 1 second immediately following the instant the time becomes valid:
The following time will be sent to the ATDC
TIME - dd mmm yyy hh mm ss DUTC - xx
Hit <RET> to proceed, any other character to abort.
On the 1 second tick after receiving this time, the clock will restart from this new time.

3. Load and activate the IERSA table only.

This downloads and activates the IERSA table. This table contains the list of dUTC and dUT1 corrections for each value of MJD. The file containing the table needs to be located in the current working directory. See MJK for more details. You will be prompted for the IERSA file name:
IERSA file? [at$ephem:iersa.file]
If you hit **<RET>** the value in [] will be used, otherwise type in the desired name. Upon hitting **<RET>** the file will be opened and the first 100 entries will be downloaded.

4. Slide the clock's time.

This allows the ATDC's time to be manually adjusted. You will be prompted for the number of nanoseconds to slide the clock:
Enter nS to slide clock. [xx]
If you hit **<RET>** the value in [] will be used, otherwise type in the desired value. Entering a positive value will slide the ATDC's time forward, and entering a negative value will slide the ATDC's time

backwards with respect to the external 1 second tick. It should noted that the tick phase can only be adjusted in increments of 200nS.

5. Auto align clock's time.

This function reads the current external tick phase, and then calculated the amount that is required to bring it back into the region between 0 <= t < 200 nS. It should noted that the tick phase can only be adjusted in increments of 200nS.

6. Set dUTC.

This function sets the current value of dUTC (this is normally set when the time is set). You will be prompted with:
Enter dUTC [xx]
If you hit **<RET>** the value in [] will be used, otherwise type in the desired value.

7. Reset the status.

This function resets the status information in the ATDC.

8. Reboot the ATDC.

This function will cause the ATDC to reboot. You will be prompted to confirm your actions. During reboot all frame data except BAT will be indeterminate. The ATDC should resume full operation without any further intervention.