

How to generate long data streams

It is possible to fill almost completely the data streams from LS to CDAS with T2 messages. It's a bit tricky but works. To do that one should modify 2 parameters in the acquisition configuration file

- The T2 algorithm: up to now, 4 T2 algorithms are defined:
 - T2_STANDARD_ALGO: compute quality of T1, **not yet implemented**.
 - T2_LED_ALGO: keep only LED triggers, **not yet implemented**.
 - T2_RANDOM_ALGO: generate 20% randomly (used for fakes T1).
 - T2_ALL_ALGO: keep all T1's as T2 up to MAX_T2_RATE
- MAX_T2_RATE: the maximum number of timestamps in one T2 message. By default it is set at 40.

By setting the T2 algo at T2_ALL_ALGO (4), at a T1 rate of 100 Hz, 100 T2 are generated. One should then adjust the MAX_T2_RATE in order to fill the 288 bytes of a pkt sent to CDAS; in one pkt, with only one message, there is an offset of 12 bytes (frame header + message header), plus the GPS second (4 bytes); that leaves 272 bytes for the time stamps.

Thus the maximum of timestamps is $272/3 = 90$. The good value however is 89, because in addition to the time stamps, an additional 24 bytes value is added as the Gamma Ray Burst counter (fake for the moment, but ...).

Thus, to set the proper values:

1. Log into the LSC (root, root)
2. `cd /ram0`
3. Change the acquisition configuration file (**a2** means T2 algo, **mx2** means MAX_T2_RATE, see section ??):
 - `acqconfig a2=4 mx2=89`
4. Restart acquisition: `das restart`
5. Restart triggering: `stop -12345 control`

Note In this case, there is no more room available to send any other message. Monitoring messages (sent every 5 minutes) shall never arrive to CDAS, as T2 have the highest priority.

Note After a reboot or power on, the acquisition configuration is taken from /root/LSC/config. Thus it is necessary to repeat the procedure. Going back to the normal behaviour, use

`acqconfig a2=3 mx2=40` (random trigger, maximum t2 rate 40)

Note In order to make this “permanent”, the file `/root/LSC/bin/svrstart` should be modified as follows:

- Before the line `'/root/LSC/bin/srv -v start'` insert `'/root/LSC/bin/acqconfig a2=4 mx2=89'`