

The AT clock(s)

mjk, 4 Oct 1986

1. Nomenclature. The AT clocks will maintain an approximation to IAT (cf. AT/25.1/020). Since it will be an approximation, it might best to emphasize this aspect by giving it a different name : CAT (Culgoora Atomic Time) for example. CAT is related to IAT by:

$$\text{IAT} = \text{CAT} + \text{offset} + \text{rate} * \text{CAT}$$

2. The LO synchronising cycle works in terms of 5 seconds CAT. It will be initialised by a pulse from an event generator, which will have been set to one of the allowed integration start times (on the hour (CAT) and every 5 seconds thereafter).

3. The ephemeris routines will compute :

phase offset, and first and second derivatives for the LO;  
phase offset and first derivative for the sampler;  
delay for the correlator.

These will be calculated for the START time of each integration period - one of the allowed 5 second CAT times. It will be necessary to translate this start time to IAT; which means that the clock offset and rate will need to be measured, stored in the database, and passed to the ephemeris task.