The transmitting window of an ONU is indicated in the GATE message where start time and length are specified. An ONU begins transmission when its localTime counter matches the start_time value indicated in the GATE message. An ONU concludes its transmission with sufficient margin to ensure that the laser is turned off before the grant length interval has elapsed.

Multiple outstanding grants may be issued to each ONU. The OLT shall not issue more than the maximum supported maximum outstanding grants as advertised by the ONU during registration (see pending grants in 77.3.6.3).

In order to maintain the watchdog timer at the ONU, grants are periodically generated. For this purpose empty GATE messages may be issued periodically.

When registered, the ONU ignores all gate messages where the Discovery flag is set.

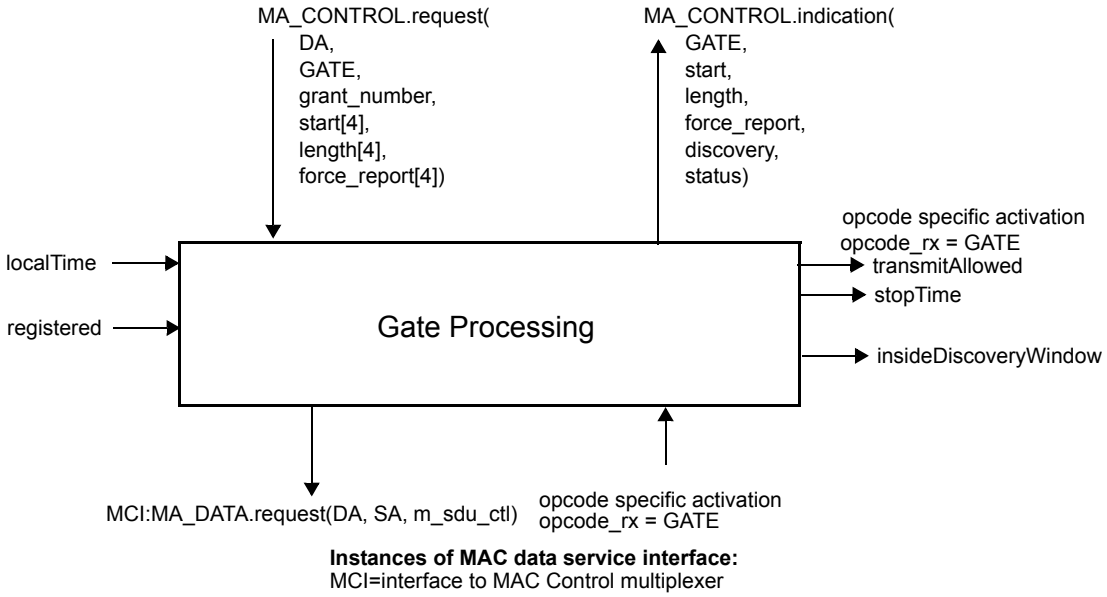

Figure 77–1—Gate Processing Service Interface

77.0.0.1 Constants

~~discoveryGrantLength~~
~~TYPE: 32 bit unsigned~~
~~This constant represents the duration of ONU's transmission during discovery attempt. discoveryGrantLength is equal to one FEC codeword (see FEC_CODEWORD_SIZE in 77.2.2.1) expressed in units of time_quanta.~~
~~VALUE: 13~~

gate_timeout
TYPE: 32–bit unsigned
This constant represents the maximum allowed interval of time between two GATE messages generated by the OLT to the same ONU.
VALUE: 0x002FAF08 (50 milliseconds)

max_future_grant_time
TYPE: 32 bit unsigned
This constant holds the time limiting the future time horizon for a valid incoming grant.
VALUE: 0x03B9ACA0 (1 second)

min_processing_time
TYPE: 32 bit unsigned
This constant is the time required for the ONU processing time.
VALUE: 0x00000400 (16.384 us)

minGrantLength
TYPE: 32 bit unsigned
This constant represents the minimum data portion of a grant. minGrantLength is equal to one FEC codeword (see FEC_CODEWORD_SIZE in 77.2.2.1), less the initial 16 idle octets, expressed in units of time_quanta.
VALUE: 12

tqSize
This constant is defined in 77.2.2.1.

77.0.0.2 Variables

BEGIN
TYPE: Boolean
This variable is used when initiating operation of the functional block state diagram. It is set to true following initialization and every reset.

BurstOverhead
TYPE: integer
This variable represents the burst overhead and equals the sum of laserOnTime, laserOffTime, syncTime and an additional two time_quanta to account for END_BURST_DELIMITER and two leading IDLE vectors of the payload. This variable is expressed in units of time_quanta.

counter
TYPE: integer
This variable is used as a loop iterator counting the number of incoming grants in a GATE message.

currentGrant
TYPE:
structure
{
DA: 48 bit unsigned, a.k.a MAC address type
start 32 bit unsigned
length 16 bit unsigned
force_report Boolean
discovery Boolean
}
This variable is used for local storage of a pending grant state during processing. It is dynamically set by the Gate Processing functional block and is not exposed.
The state is a structure field composed of multiple subfields.

data_rx
This variable is defined in 77.2.2.3.

.

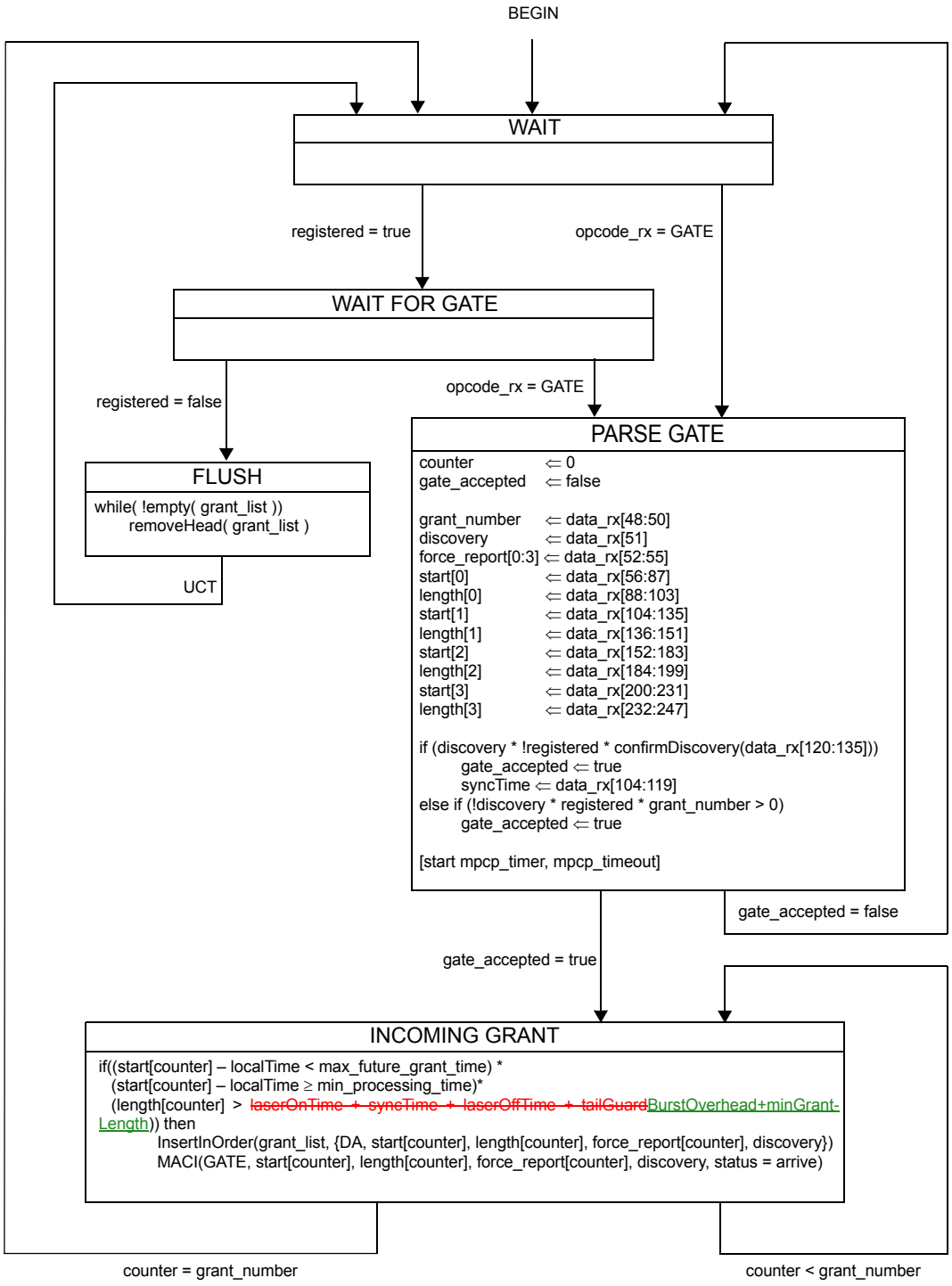

Figure 77–2—Gate Processing ONU Programing state diagram

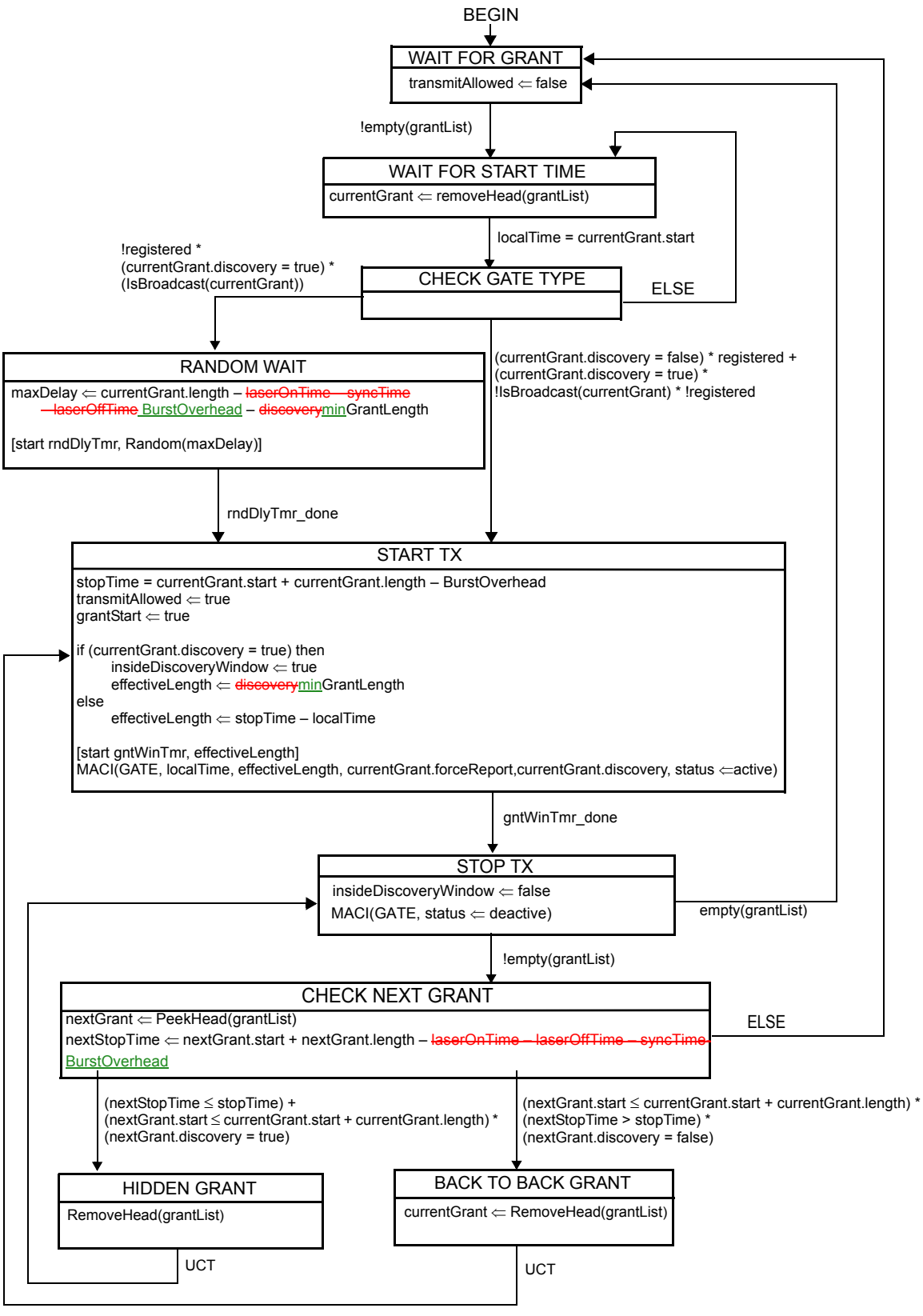

Figure 77–3—Gate Processing ONU Activation state diagram