

In CHECK NEXT GRANT state, the Gate Activation process peeks at the next head-of-line grant without actually removing it from the grantList. It calculates nextStopTime and determines if the next grant overlaps with the current grant. If the next grant overlaps the current grant, and the next grant extends beyond the current grant, then the ONU's transmission may continue uninterrupted until the end of the next grant. As shown in Figure 1, there could be two possibilities: a case when the next grant extends beyond the current grant is referred to as *back-to-back* grants. In this case, the Gate Activation process enters the BACK TO BACK GRANT state. The second case, referred to as *hidden* grant, occurs when the next grant does not extend beyond the current grant. In this situation, the process transitions to the HIDDEN GRANT state.

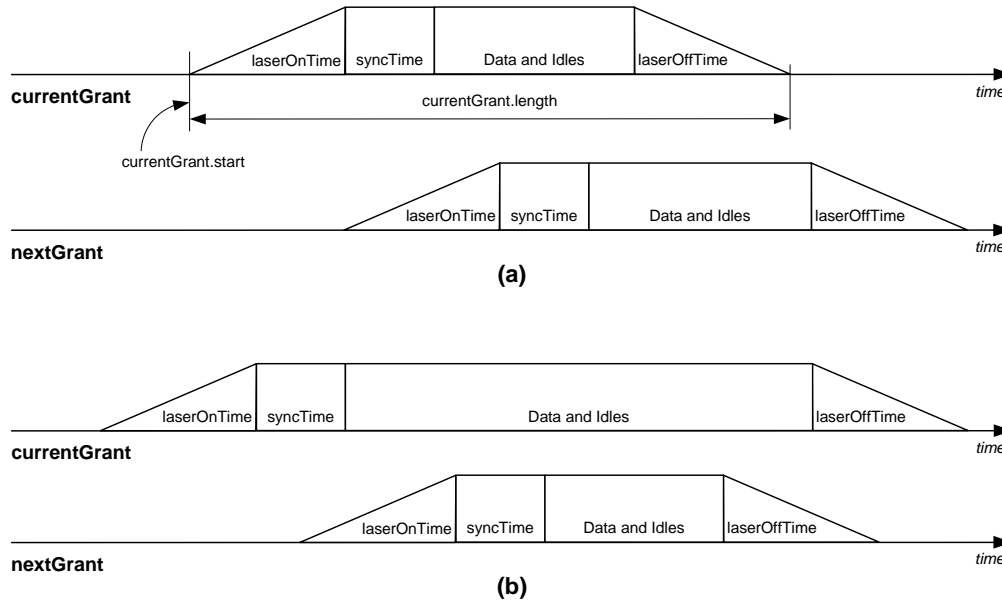


Figure 1: Examples of (a) back-to-back grant and (b) hidden grant.

Please, note that, in the Gate Activation state diagram, the conditions for transitions from the CHECK NEXT GRANT state to states HIDDEN GRANT and BACK TO BACK GRANT are incorrect.

The transition to the HIDDEN GRANT state should be as follows:

```
(nextStopTime ≤ stopTime) +
(nextGrant.start ≤ currentGrant.start + currentGrant.length) *
(nextGrant.discovery == true)
```

The condition for transition to the BACK TO BACK GRANT state should be as follows:

```
(nextGrant.start ≤ currentGrant.start + currentGrant.length) *
(nextStopTime > stopTime) *
(nextGrant.discovery == false)
```

In addition, the calculation of nextStopTime value is also incorrect, and should be changed to:

```
nextStopTime = nextGrant.start + nextGrant.length - laserOnTime
               - laserOffTime - syncTime.
```