

ZTE中兴

Problems with NACK REGISTER_ACK in Figure 77-22/77-28 state diagrams



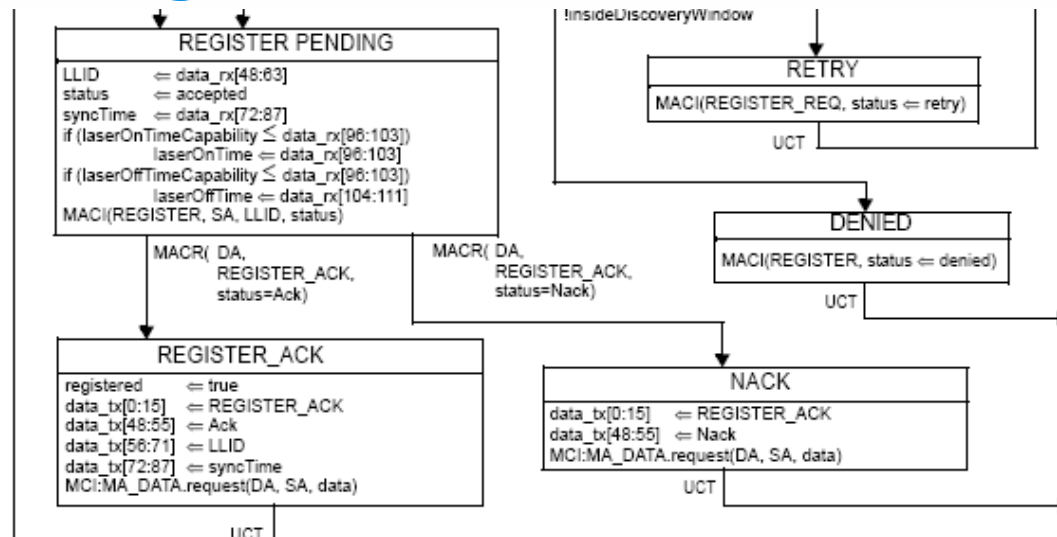
Stronger
Together

Marek Hajduczenia (marek.hajduczenia@zte.com.cn)

ZTE Corporation



NACK in Figure 77-22

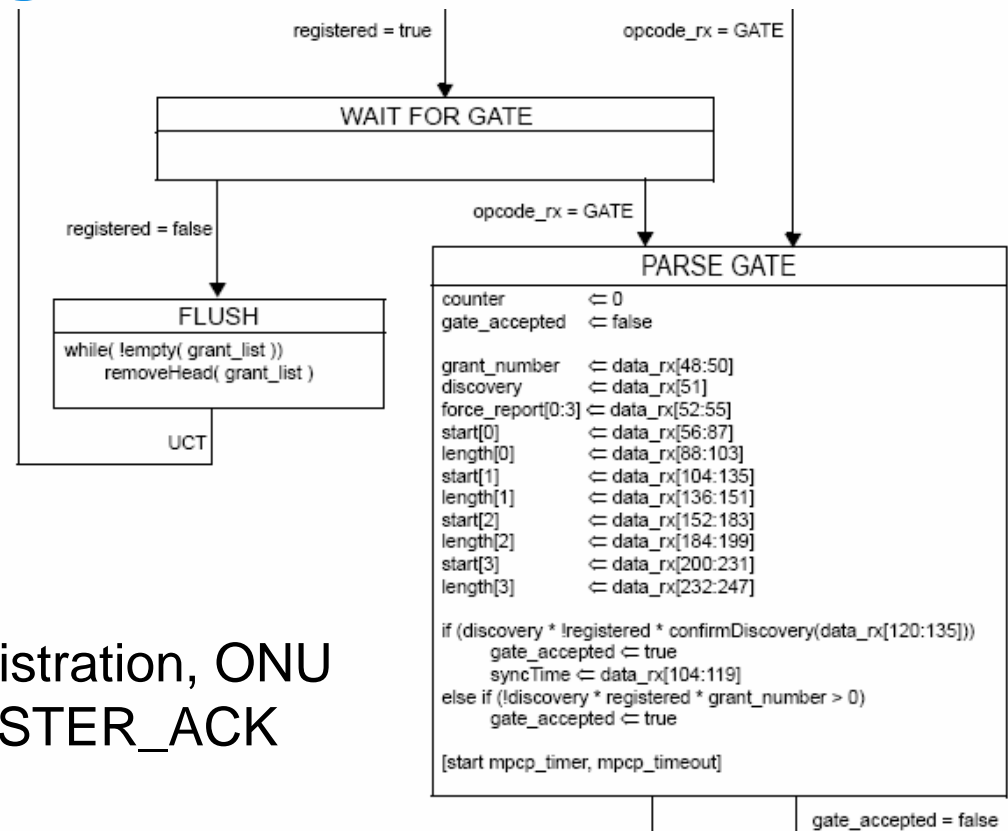


- From REGISTER_PENDING state, state diagram transitions to REGISTER_ACK / NACK state, depending on Ack / Nack from DBA agent.
- If Nack is received, state diagram moves to NACK state to send REGISTER_ACK with NACK flag enabled to indicate that registration is refused. Variable „registered” is set to false.
- OLT sends a regular GATE MPCPDU to allow ONU to send REGISTER_ACK MPCPDU – otherwise, discovery process times out



Figure 77-28 state diagram

- During Discovery Process, all grant frames are transmitted using regular GATE MPCPDU (except Discovery grant)
- ONU receives regular grants when variable „registered” is true
- If ONU DBA client denies registration, ONU will not be able to send REGISTER_ACK MPCPDU
- State diagram 77-28 needs to be extended to accommodate NACK condition to transition to INCOMING_GRANT state (not shown)





Problem statement

- If NACK is received from ONU DBA client, **registered** is false
- If **registered** is false and a regular (non-discovery) GATE MPCPDU is received, according to Figure 77-28, such a GATE is dropped
 - if (**discovery** * !**registered** * **confirmDiscovery**(data_rx[120:135]))
 - gate_accepted ← true
 - syncTime ← data_rx[104:119]
 - else if (!**discovery** * **registered** * grant_number > 0)
 - gate_accepted ← true
- This means that an ONU cannot transmit REGISTER_ACK with NACK flag set to OLT
- Figure 77-28 and Figure 77-22 state diagrams need extension to signal NACK state in discovery process on ONU side



Proposed changes

- Add a new variable to 77.3.3.2

register_nack

TYPE: Boolean

This variable indicates whether registration was denied by ONU DBA client. It is set to true in NACK state on Figure 77-22 and set to false otherwise.

- Modify Figure 77-22 as depicted on slide 6

- add „**register_nack** <= false” in state **WAIT**
- add „**register_nack** <= true” in state **NACK**

- Modify Figure 77-28 as depicted on slide 6

- modify condition

„else if (!discovery * **registered** * grant_number > 0)”
to read

„else if (!discovery * (**registered + register_nack**) * grant_number > 0)”

- see 3av_0809_hajduczenia_5.pdf for details of changes



Changes to Figure 77-22 and Figure 72-28

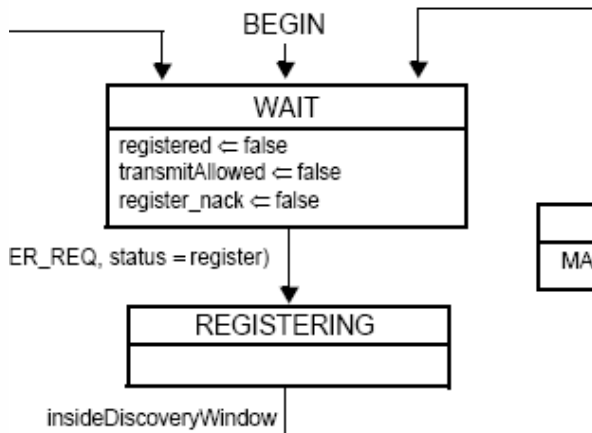


Figure 77-22

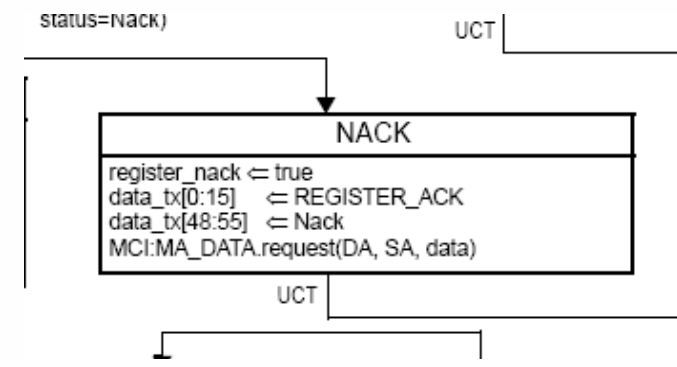


Figure 77-28

```

    [register] ← data_tx[232:247]
    if (discovery * !registered * confirmDiscovery(data_rx[120:135]))
        gate_accepted ← true
        syncTime ← data_rx[104:119]
    else if (!discovery * (registered + register_nack) * grant_number > 0)
        gate_accepted ← true
    [start mpcp_timer, mpcp_timeout]
    gate_accepted = false
    
```

ZTE中兴

Thank You for Your attention



Stronger
Together

