

**Agenda Item:** 9.1  
**Source:** Ericsson  
**Title:** **RLC Control PDUs: RESET/RESET ACK**  
**Document for:** Decision

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## 1 Introduction

This contribution proposes the inclusion of two new control PDU for resetting the connection between two peer RLC entities (RESET and RESET ACK), gives arguments why they are needed and their impacts on the RLC state model.

## 2 Discussion

Due to protocol errors (receiving an unexpected PDU in the current state or retransmission time-out due to bad radio environment) it might be necessary to reset all protocol states, -variables and -timers used by the peer entities. There are two alternatives for which layer that should reset the RLC protocol: RLC and RRC. The reason for using RLC is that (a) there will be a smaller overhead for peer-to-peer RLC control PDU signalling compared to RRC signalling, and, (b) reset of the RLC protocol is faster using RLC control PDUs compared to using RRC elementary procedures.

Based on the above arguments we propose the introduction two RLC control PDUs (RESET and RESET ACK) to handle the peer-to-peer RLC signalling.

## 3 Proposal

### 3.1 Changes to Section 9.1 (Protocol data units)

Add the following text:

f) RESET (Reset)

The RESET PDU is used in acknowledged mode to reset all protocol states, protocol variables and protocol timers of the peer RLC entity in order to synchronise the two peer entities.

g) RESET ACK (Reset Acknowledge)

The RESET ACK PDU is an acknowledgement to the RESET PDU.

### 3.2 Changes to section 9.2.2 (Parameters)

Add two PDU types to the PDU type table : RESET, RESET ACK

### 3.3 Changes to section 9.3 (Protocol states)

Replace the text in sections 9.3.3.2 and 9.3.3.3 with the following:

#### 9.3.3.2 Acknowledged Data Transfer Ready State

In the acknowledged data transfer ready, acknowledged mode data can be exchanged between the entities. Upon reception of a CRLC-CONFIG-Req from higher layer the RLC entity is terminated and the null state is entered.

Upon errors in the protocol, the RLC entity sends a RESET PDU to its peer and enters the reset pending state.

Upon reception of a RESET PDU, the RLC entity resets the protocol and responds to the peer entity with a RESET ACK PDU.

### 9.3.3.3 *Reset Pending State*

In the *reset* pending state the entity waits for a response from its peer entity and no data can be exchanged between the entities. Upon reception of an *CRLC-CONFIG-Req* from higher layer the RLC entity is terminated and the null state is entered.

Upon reception of a RESET ACK PDU, the RLC entity resets the protocol and enters the acknowledged data transfer ready state.

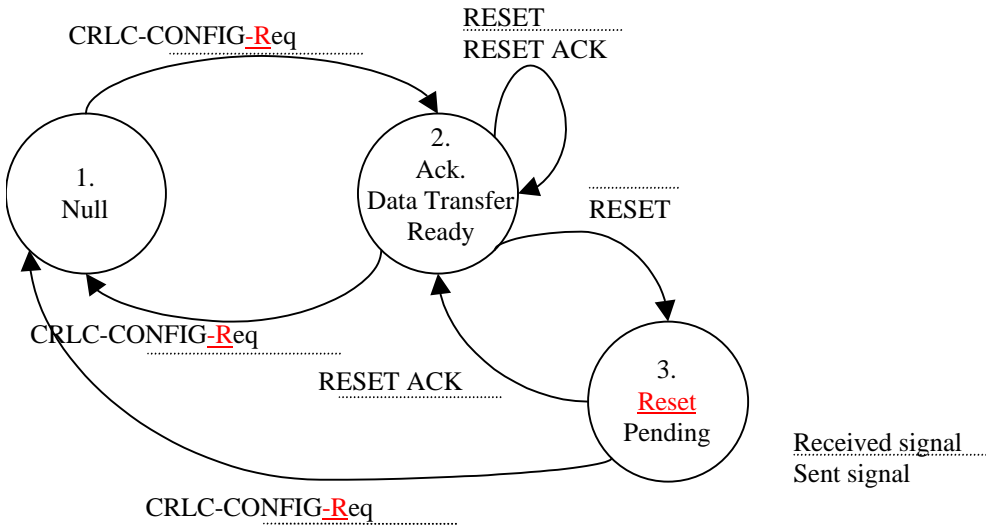


Figure 1. The state model for the acknowledged mode entity.

## 4 References

[1] 3GPP TS 25.322, “Description of the RLC protocol” V1.0.0.