

Protocol D: Positive ACK with Retransmission (PAR)

(can handle lost or corrupted segments, whether data or ACKs)

Sender

$seqnum \leftarrow 0$
 Get initial AL data from socket
 repeat forever
 [Construct TL segment with header (including seqnum)
 Give segment to NL to xmit
 Set timer
 Wait for event (ACK or timeout)
 IF ^{valid} ACK
 Then Cancel timer
 Get next AL data from socket
 Update seqnum
]

Receiver

$expected \leftarrow 0$
 repeat forever
 [wait for segment from NL
 Process segment, compute checksum
 IF valid segment
 Then IF $seqnum = expected$
 Then Remove TL header
 Deliver data to AL
 Construct ACK
 Give ACK to NL to xmit
 Update $expected$ seqnum
 Else Discard segment
 Construct ACK
 Give ACK to NL to xmit
]
 else Discard segmt

