Go-Back-N

ACK-NAK-Timer

Basic GBN

Sliding Window of size - Ws on transmitter ; Packets are transmitted ,if acknowledged window slid forward ;Receiver waits for Rnext if receved acknowledges it .If window size Ws reached and no acknowledgement - Goes back N (= Ws)

G-Back-N with NAK

Receiver when it receives an out of order packet sends a NAK with the Rnext it has been waiting for .Transmitter then starts retransmitting from this Rnext packet

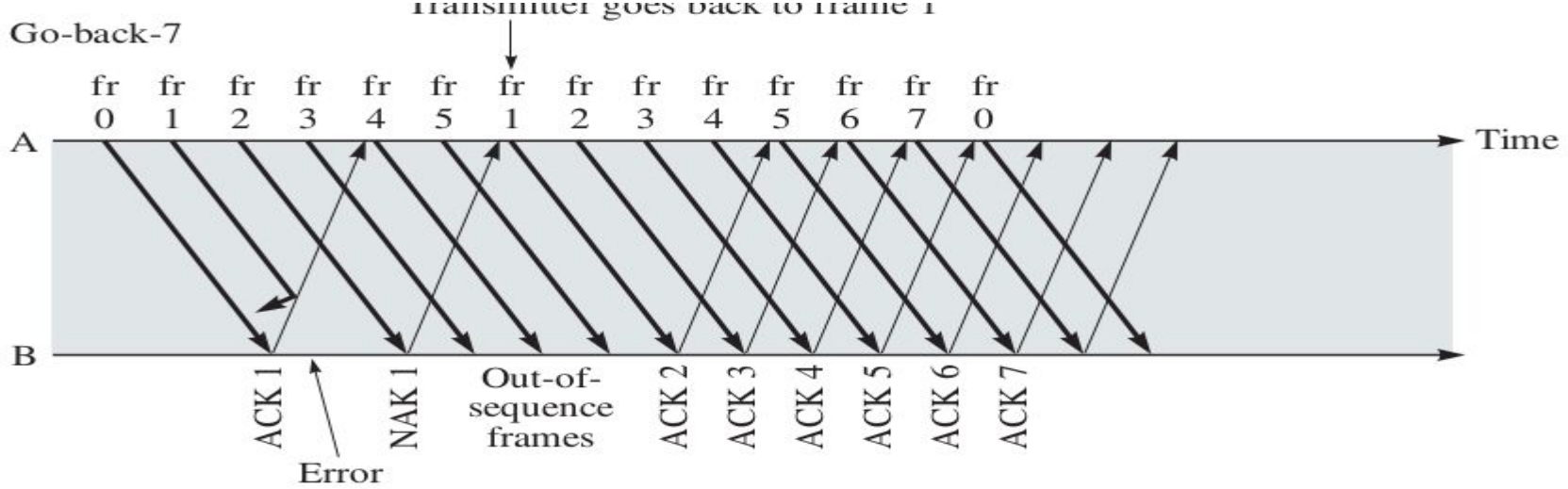

FIGURE 5.17 NAK error recovery

GBN with NAK + Timer

Time out = 5 seconds.

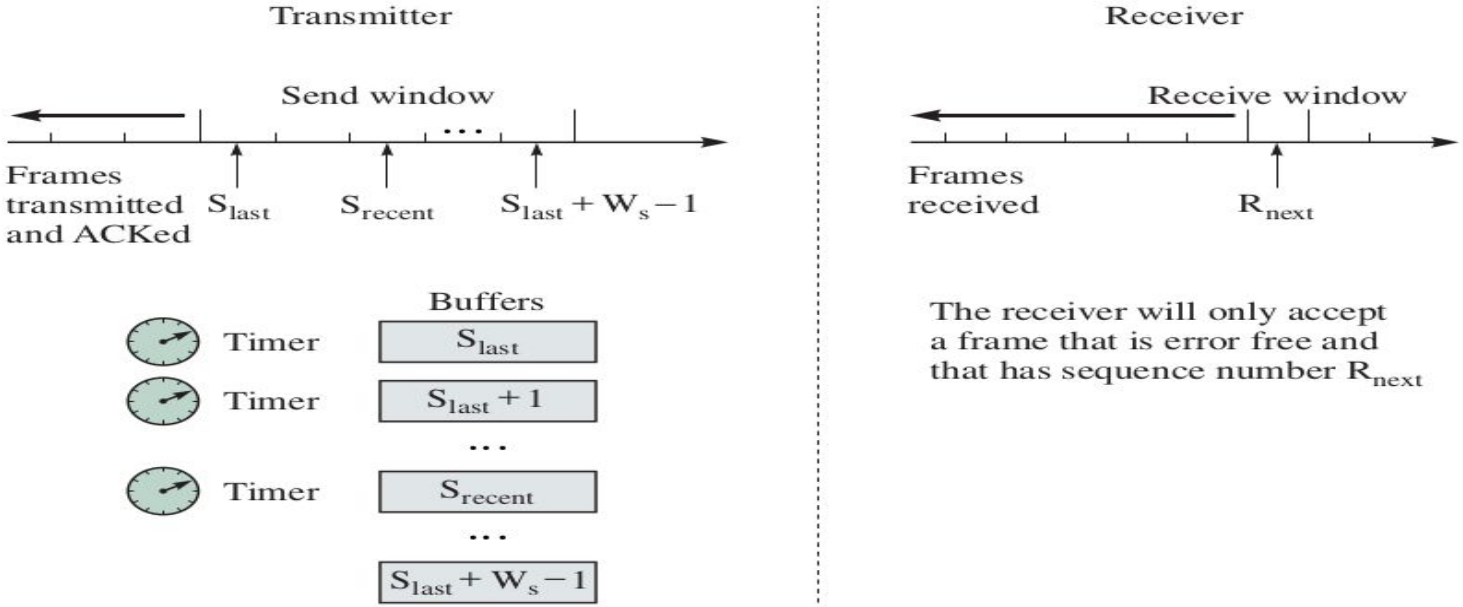

FIGURE 5.15 Go-Back-N ARQ

GBN ACK+Timer

Time - out - 5 seconds chosen arbitrarily as tprop too small. Timer function same as NAK

Channel

Perr - probability error can occur in channel

Results - Basic GBN

Perr	0.001	0.01	0.07	0.2	0.5
Efficiency	0.990	0.961	0.7849	0.535	0.1925

NAK - Slightly better than basic

Perr	0.5	0.2	0.07	0.01	0.001
Efficiency	0.18456	0.4677	0.7898	0.974	0.998

NAK + Timer - Nearly equal to NAK

Perr	0.001	0.01	0.07	0.2	0.5
Efficiency	0.99206	0.98039	0.85034	0.64766	0.2865

Ack + Timer - nearly equal to ACK

Perr	0.5	0.2	0.07	0.001
Efficiency	takes long	0.535	0.68	1