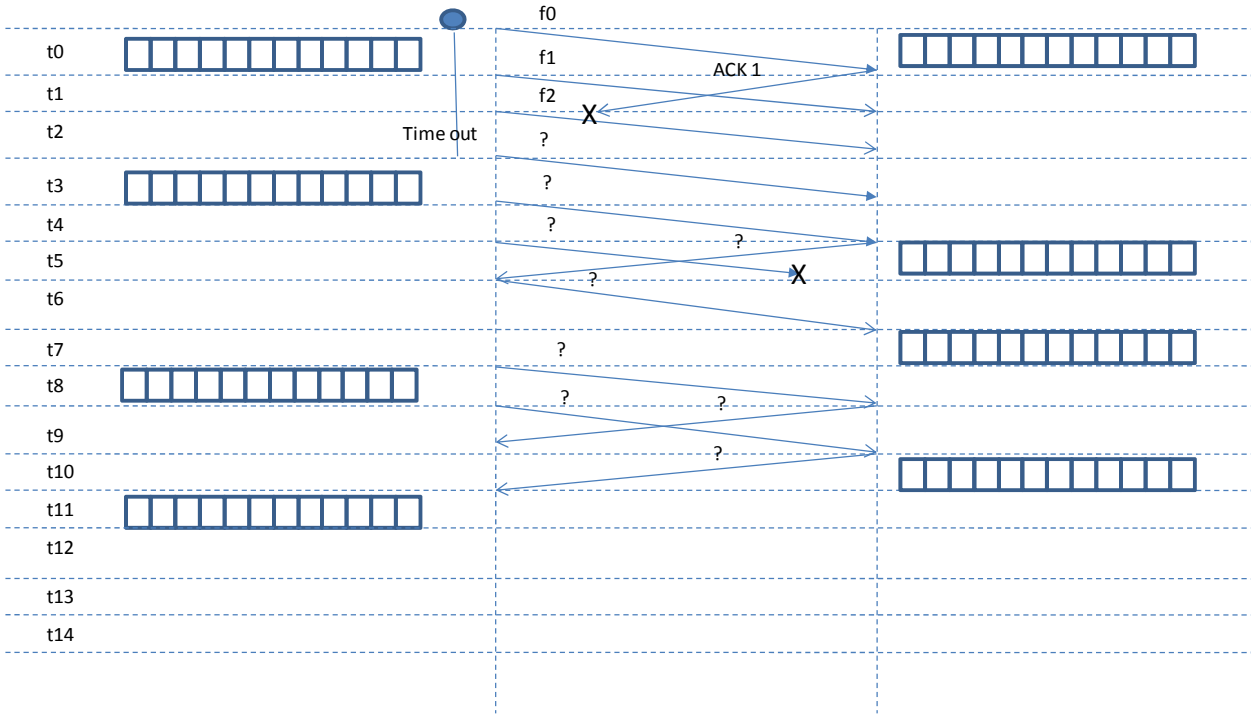
Test 2 – Review

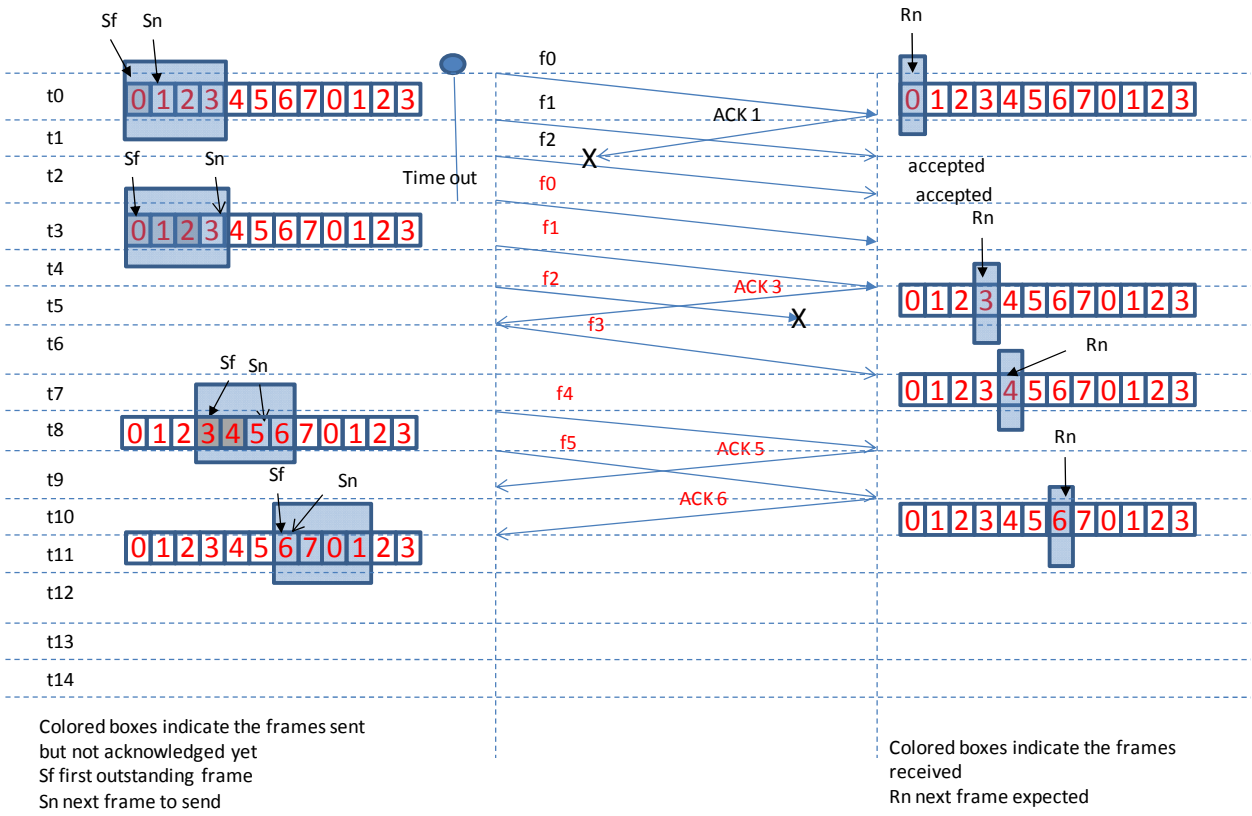
Exercise 1

In this exercise, we are considering the go-back-N protocol. The send window size is 4 and the receive window size is 1. No more than one packet can be transmitted per time unit. In each step (at the time marked with dotted lines) a packet is first received, then the decision which packet is going to be send next is made, then the chosen packet is transmitted, and finally the new state is shown. In the example the time runs from the top to the bottom. Fill in the empty sliding windows and show the state of the window and fill in the missing frames (denoted with ?). The sequence number field of the MAC header is three-bit length.



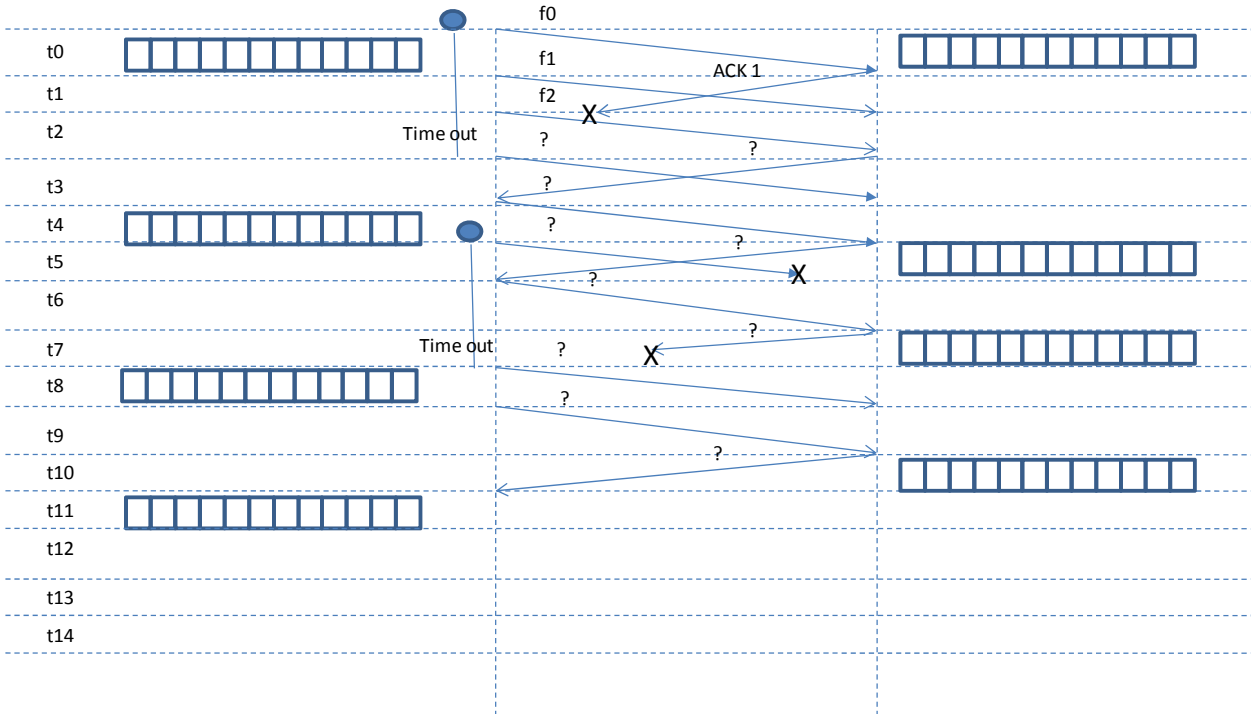
ANSWER

Since the sequence number field is three-bit length, we can have frames whose sequence number is 0 to frames whose sequence number is 7 (f0,f1,f2,…,f7). The size of the send window is 4 which meets the restriction imposed by go-back-n protocol, which is the size of the send window must be <u>less than</u> 2^m (if m=3 3, then $2^m = 2^3 = 8$). The size of the receiver window is always 1.



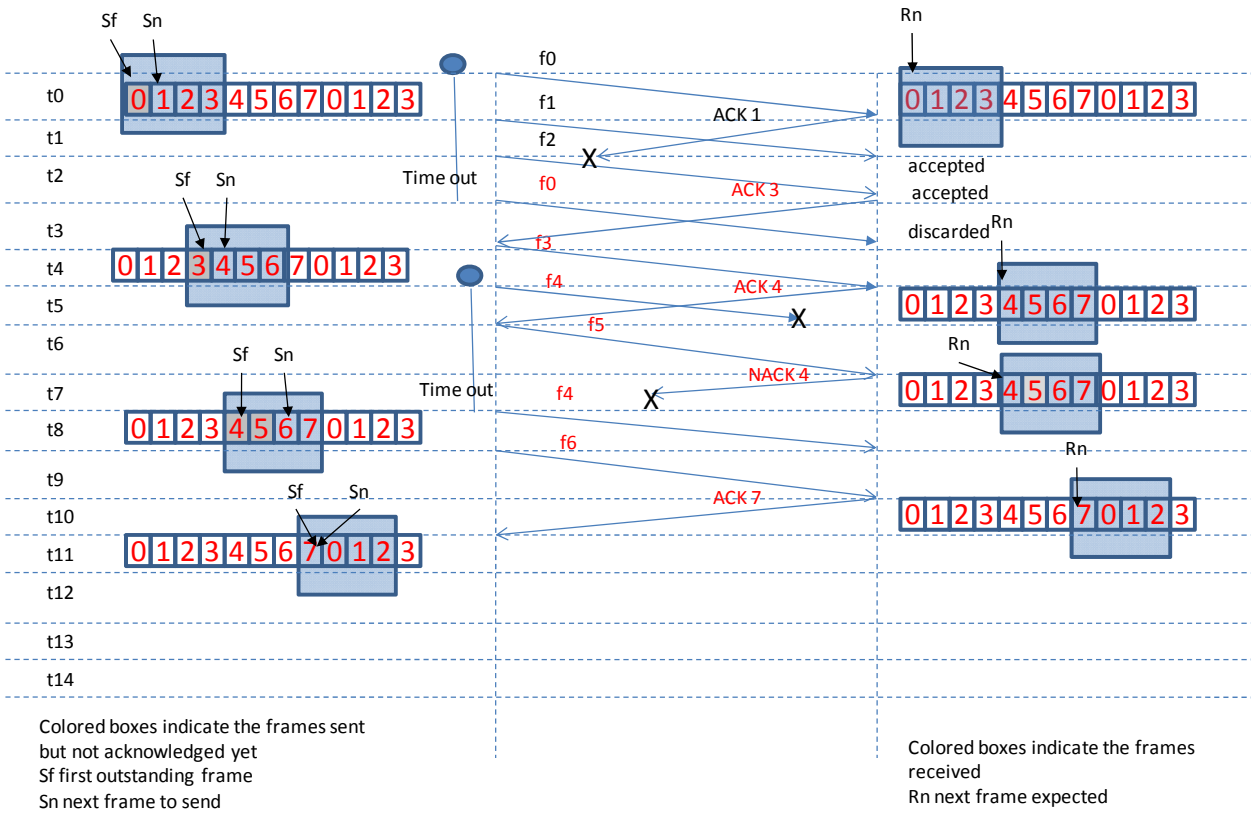
Exercise 2

In this exercise, we are considering the selective-repeat protocol. The send window size is 4 and the receive window size is 4. No more than one packet can be transmitted per time unit. In each step (at the time marked with dotted lines) a packet is first received, then the decision which packet is going to be send next is made, then the chosen packet is transmitted, and finally the new state is shown. In the example the time runs from the top to the bottom. Fill in the empty sliding windows and show the state of the window and fill in the missing frames (denoted with ?). The sequence number field of the MAC header is three-bit length.



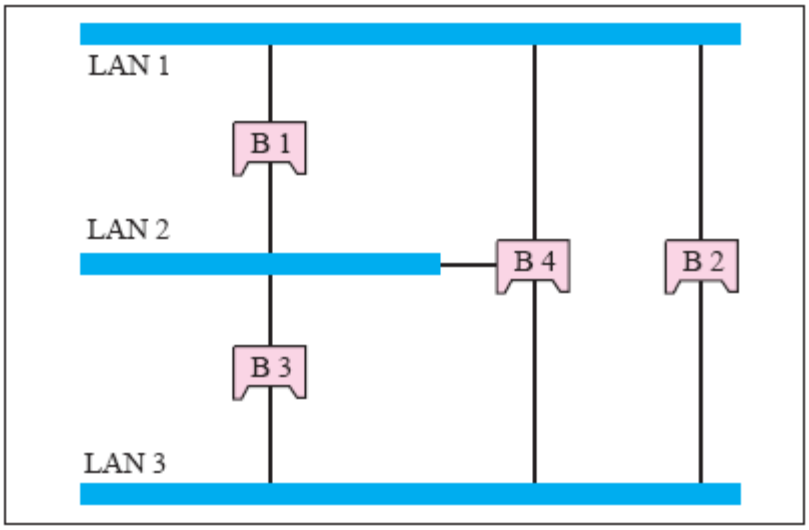
ANSWER

Since the sequence number field is three-bit length, we can have frames whose sequence number is 0 to frames whose sequence number is 7 (f0,f1,f2,…,f7). The size of the sender and receiver window is 4 which meets the restriction imposed by selective-repeat protocol, which is the size of the send and receive window must be <u>at most</u> 2^{m-1} (if m=3 3, then $2^{m-1} = 2^2 = 4$).



Exercise 3

Find the spanning tree for the system in the following figure. Choose B1 as the root bridge. Show forwarding and blocking ports, after applying the spanning tree procedure. *Tip: find the graph representation first.*



ANSWER

The metric used to find the spanning tree was the number of hops from a node to another (for example the number of hops from B1 to LAN 1 is 1)