

SDT

rw

/newfs/home/ldaniel/slacp_final/slacp_protocol.sdt

→

rw

/newfs/home/ldaniel/slacp_final/

—

Analysis Model

2

—

Used Files

2

—

s-lacp

2

	slacp_protocol	3	rw	slacp_protocol.ssy
	slacp_sender	7	rw	slacp_sender.sbk
	slacpsender	10	rw	slacpsender.spr
	sendercontrol	25	rw	sendercontrol.spr
	Mac_Layer	34	rw	Mac_Layer.sbk
	Mac_Process	35	rw	Mac_Process.spr
	slacp_receiver	40	rw	slacp_receiver.sbk
	slacpreceiver	43	rw	slacpreceiver.spr
	receivercontrol	59	rw	receivercontrol.spr
	Packet_generator	72	rw	Packet_Generator.sbk
	packet_gen	73	rw	packet_gen.spr

slacp_protocol

[unconnected]

—

TTCN Test Specification

78

—

Other Documents

78

Chapter Analysis Model...

Chapter Analysis Model

Chapter Used Files

Chapter s-lacp

SIGNAL

Open_Channel_Request, Open_Channel_Confirm, Open_Channel_Fail,
 Open_Request(t_Open_Request_paramframe), Open_Confirm(t_Open_Confirm_paramframe),
 Close_Channel_Request, Close_Channel_Confirm, Close_Channel_Fail,
 FIN(t_FINframe), FINACK(t_FINACKframe),
 Send_Packet_Request, Send_Packet_Confirm,
 Flow_Continue, Packet_Loss_Notification, Nothing_to_send(t_nothingtosendframe),
 Packet_Receive, DataFrame(t_slacp_frame), FEC_Data(t_FEC_Dataframe), ACK(t_ACKframe),
 FEC_ACK(t_FEC_ACKframe), Sender_FEC_Redundancy(t_FEC_Redundancyframe),
 Receiver_FEC_Redundancy(t_FEC_Redundancyframe), BufferAvailable,
 BufferAvail, No_MacBuf, No_MBuf, Send_Packet_Dropped, Send_Packet_Quench,
 RXMTPKT_LOSS(integer), Channel_Closing, Channel_Closed;

/* slacp frame*/

```
newtype t_slacp_frame struct
frame_type integer;
frame_seq_no integer ;
frame_length integer;
ip_pkt data_pkt;
endnewtype t_slacp_frame;
```

/* data packet */

```
syntype indexsort = integer
constants 0:6
endsyntype;
newtype data_pkt array (indexsort, integer)
endnewtype;
```

/* Queue of slacp frames */

```
newtype t_slacp_queue array(integer, t_slacp_frame)
endnewtype;
```

```
newtype t_FEC_Dataframe struct
frame_type integer;
FEC_block_no integer;
FEC_seq_no integer;
Data t_slacp_frame;
endnewtype;
```

```
newtype t_nothingtosendframe struct
frame_type integer;
frame_seq_no integer;
endnewtype;
```

```
newtype t_FEC_Redundancyframe struct
frame_type integer;
FEC_rframe_count integer;
Sender_Redundancy boolean;
FEC_block_no integer;
FEC_seq_no integer;
redundant_data t_slacp_frame;
endnewtype;
```



system slap_protocol

2(3)



```
newtype t_sack_block struct
hole boolean;
seq_no integer;
endnewtype;
newtype t_sacks array(integer,t_sack_block);
endnewtype;
```

```
newtype t_fsack_block struct
hole boolean;
seq_no integer;
endnewtype;
newtype t_fsacks array(integer,t_fsack_block);
endnewtype;
```

```
newtype t_ACKframe struct
frametype integer;
Cum_seq_no integer;
holes_exist boolean;
sacks t_sacks;
endnewtype;
```

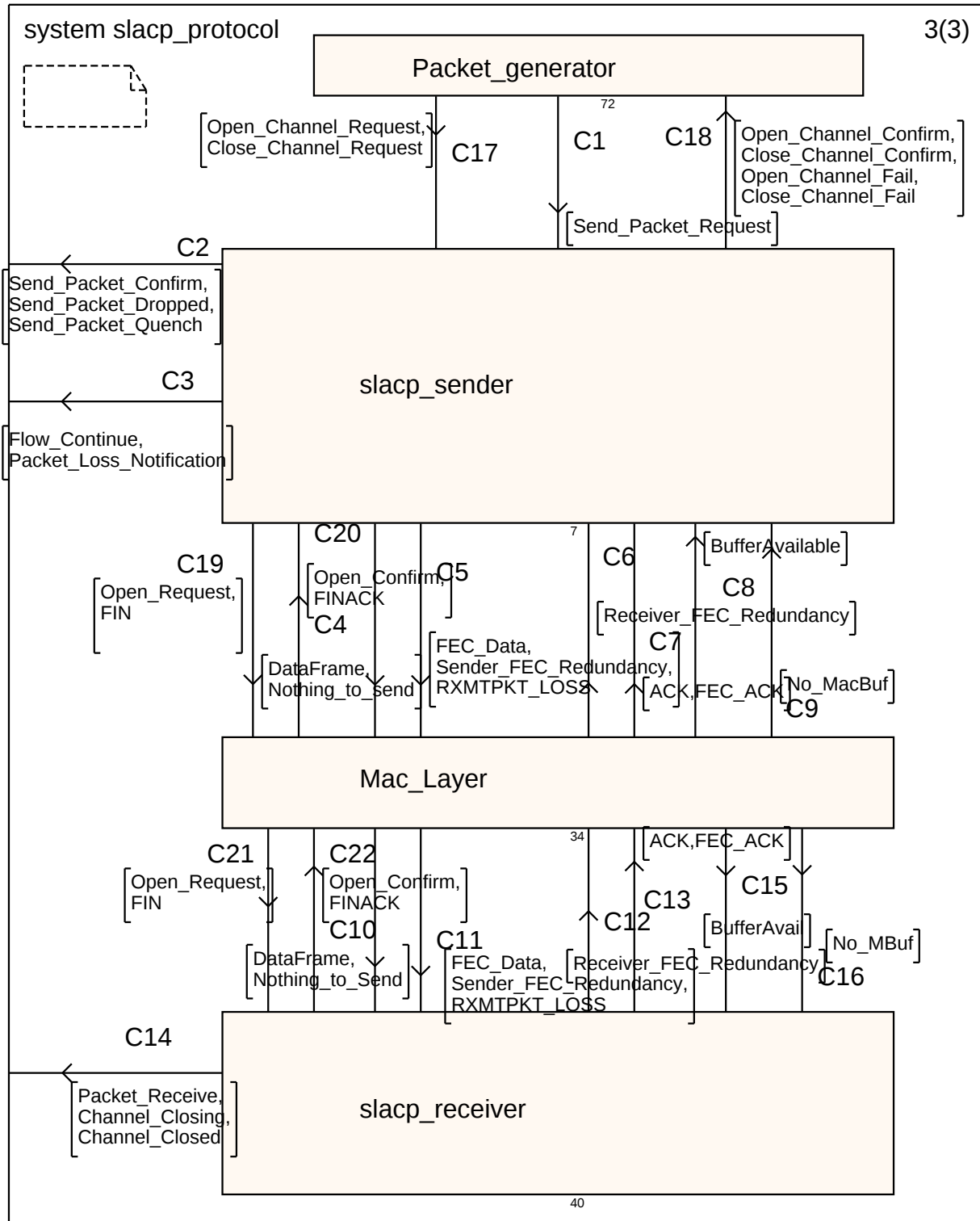
```
newtype t_FEC_ACKframe struct
frametype integer;
fec_block_no integer;
fec_seq_no integer;
holes_exist boolean;
fsacks t_fsacks;
endnewtype;
```

```
newtype t_Open_Request_paramframe struct
seq_no integer;
parameter integer;
endnewtype;
```

```
newtype t_Open_Confirm_paramframe struct
seq_no integer;
parameter integer;
endnewtype;
```

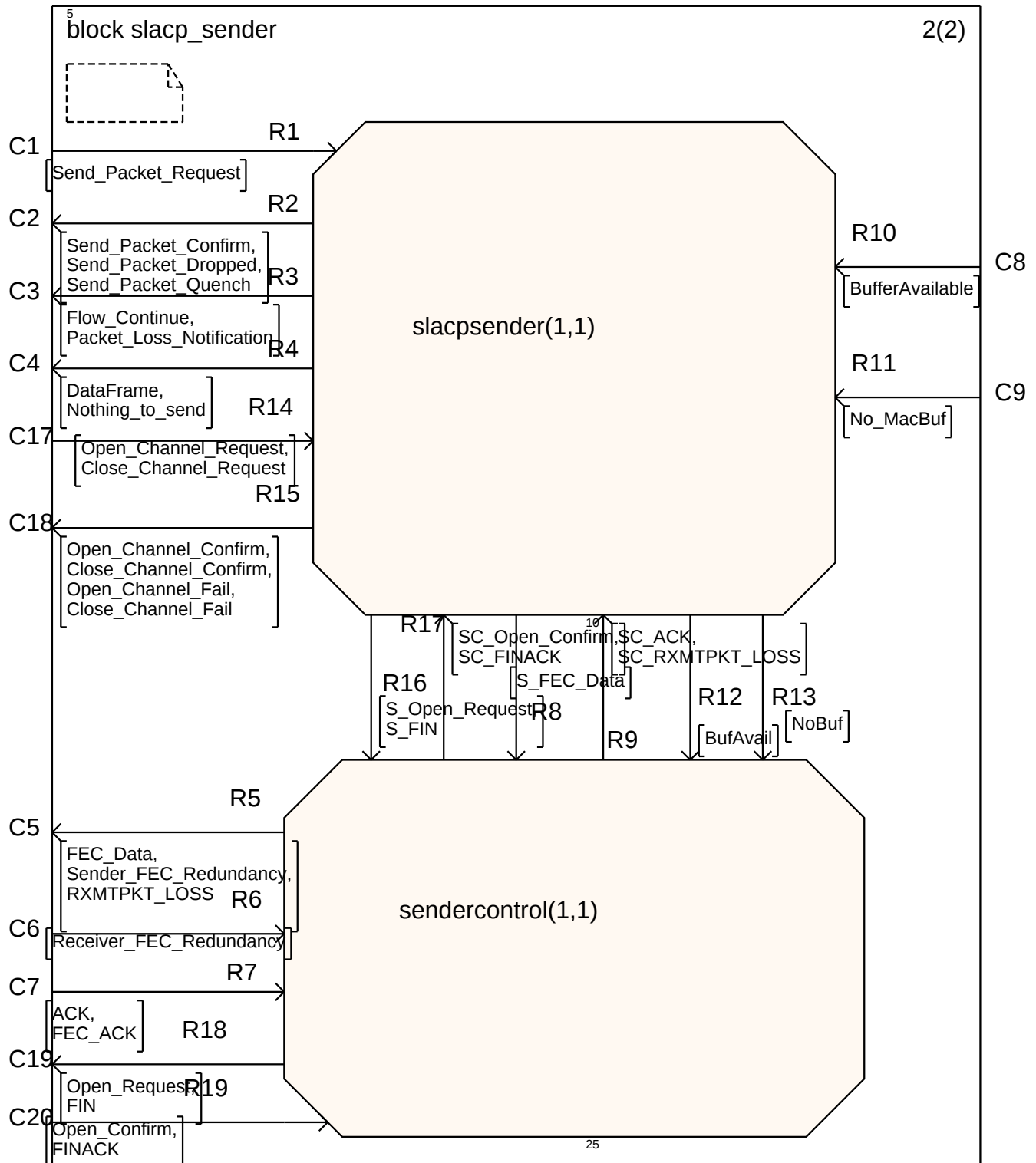
```
newtype t_FINframe struct
seq_no integer;
ACKset boolean;
endnewtype;
```

```
newtype t_FINACKframe struct
seq_no integer;
endnewtype;
```



```
SIGNAL
S_Open_Request(t_Open_Request_paramframe),
SC_Open_Confirm(t_Open_Confirm_paramframe),
S_FEC_Data(t_slacp_frame),
SC_ACK(t_ACKframe),
SC_RXMTPKT_LOSS(t_slacp_frame),BufAvail,NoBuf,
S_FIN(t_FINframe),SC_FINACK(t_FINACKframe);
```



```
dcl slacp_frame t_slacp_frame;
dcl ACKframe t_ACKframe;
dcl ntfame t_nothingtosendframe;
dcl Open_Requestframe t_Open_Request_paramframe;
dcl Open_Confirmframe t_Open_Confirm_paramframe;
dcl FINframe t_FINframe;
dcl FINACKframe t_FINACKframe;
```

```
/* slacp queue variables */
dcl slacp_Buf t_slacp_queue;
/* queue_front first unacknowledged*/
/* queue_next_to_xmit next frame to send out*/
/*queue_tail next frame to enqueue */
dcl slacp_queue_front integer:=0;
dcl slacp_queue_next_to_xmit integer:= 0;
dcl slacp_queue_tail integer:=0;
```

```
Synonym HighWaterMark integer = 80;
Synonym LowWaterMark integer = 60;
Synonym Max_Buf integer = 100;
Synonym Max_slacpqueue_size integer=10;
Synonym DATA integer = 0;
Synonym Max_seq_no integer=65536;
dcl Send_pending integer:=0;
dcl AllframesACKed boolean:=false;
dcl MacBuf_free boolean:=true;
dcl Buf_Len integer:=0;
dcl Frame_Len integer :=10;
dcl seq_counter integer:=0;
dcl hardstop_on boolean :=false;
dcl quenchperiod_on boolean:=false;
dcl window integer :=0;
Synonym Max_window integer=10;
```

```
Timer FIN_Timer;
dcl FIN_timeout duration:=15;
```

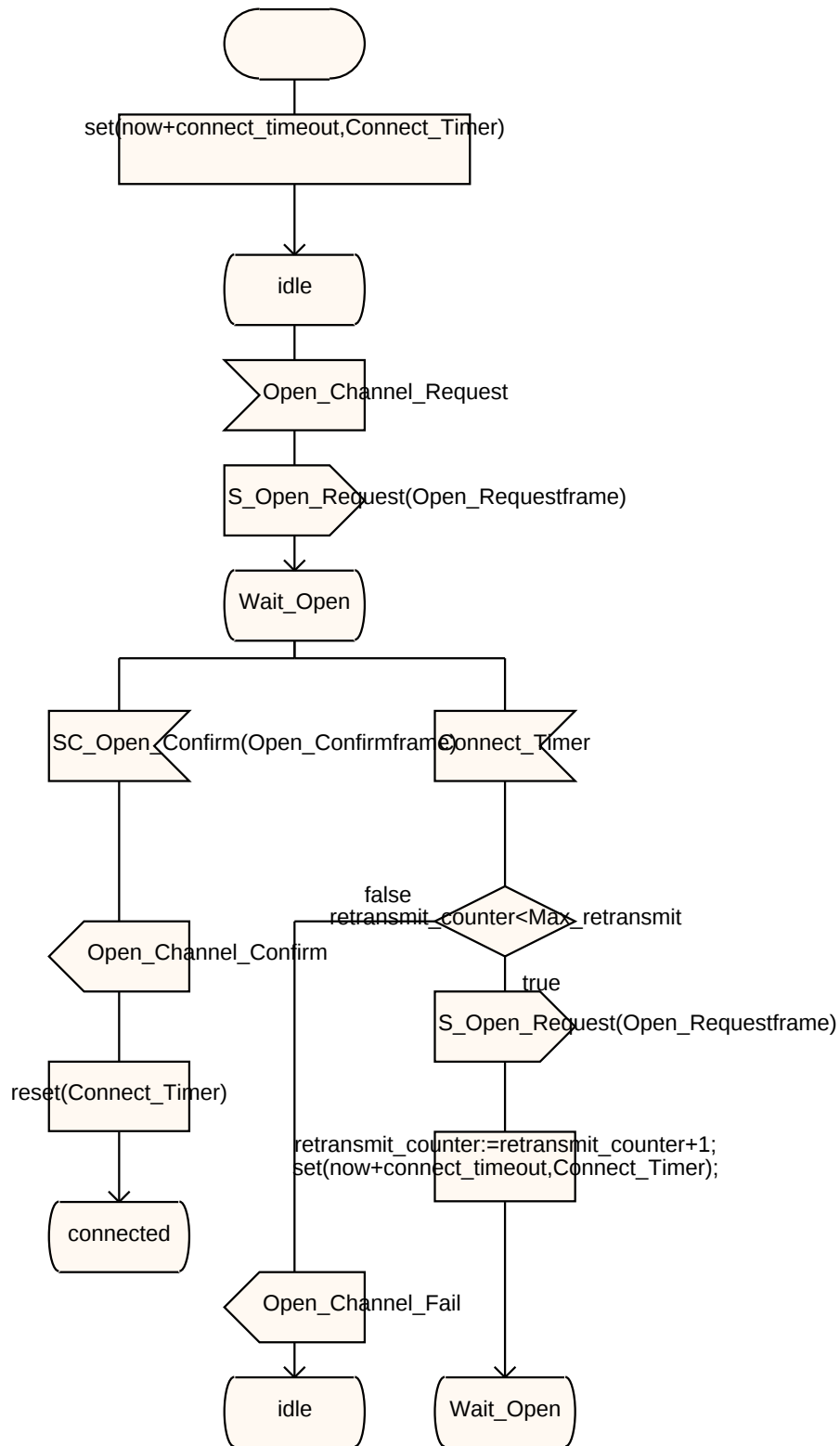
```
newtype sb_entry struct
seq_no integer;
retransmitted boolean;
frame_address integer;
endnewtype;
```

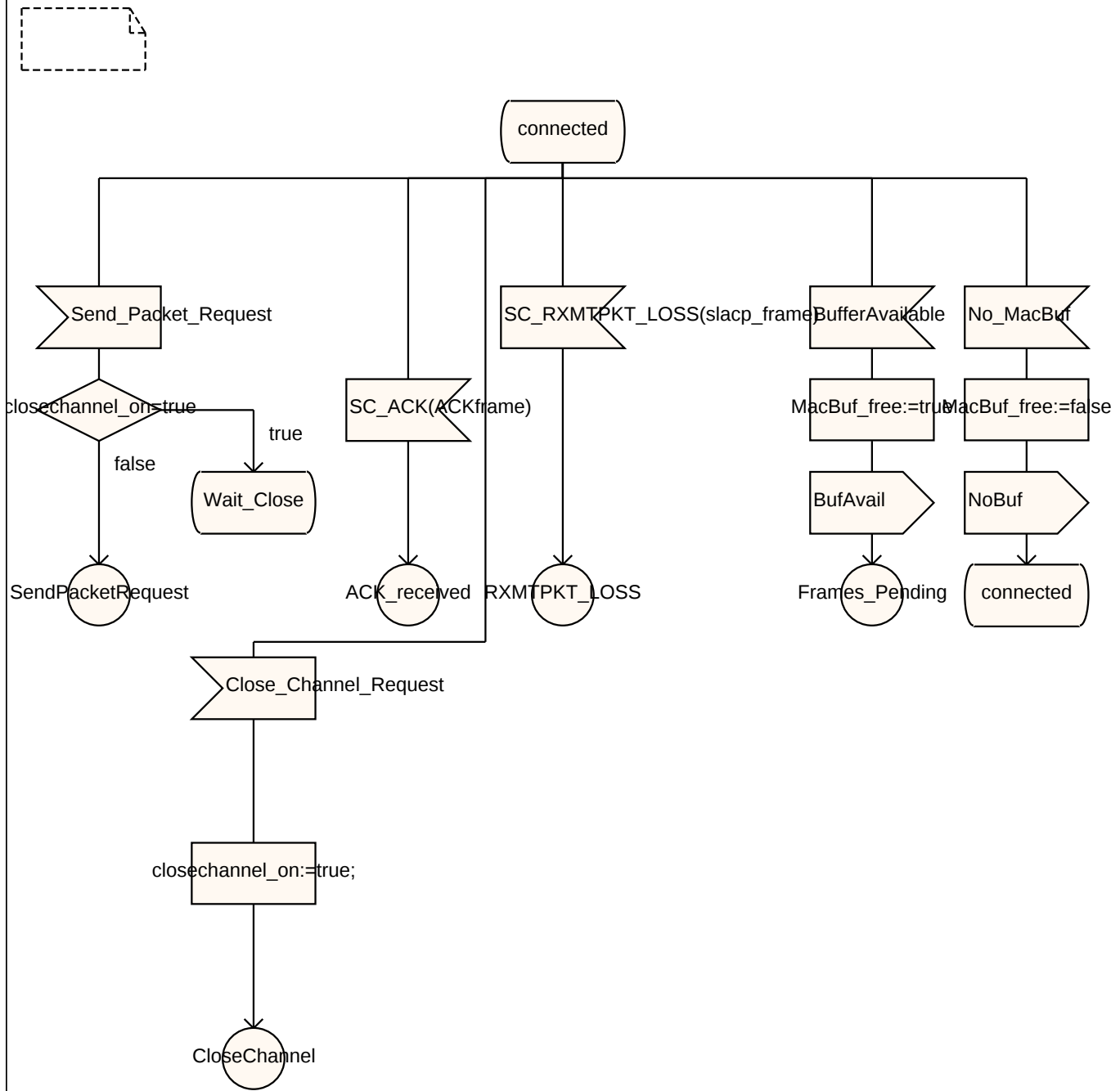
```
newtype scoreboard array (integer,sb_entry)
endnewtype;
```

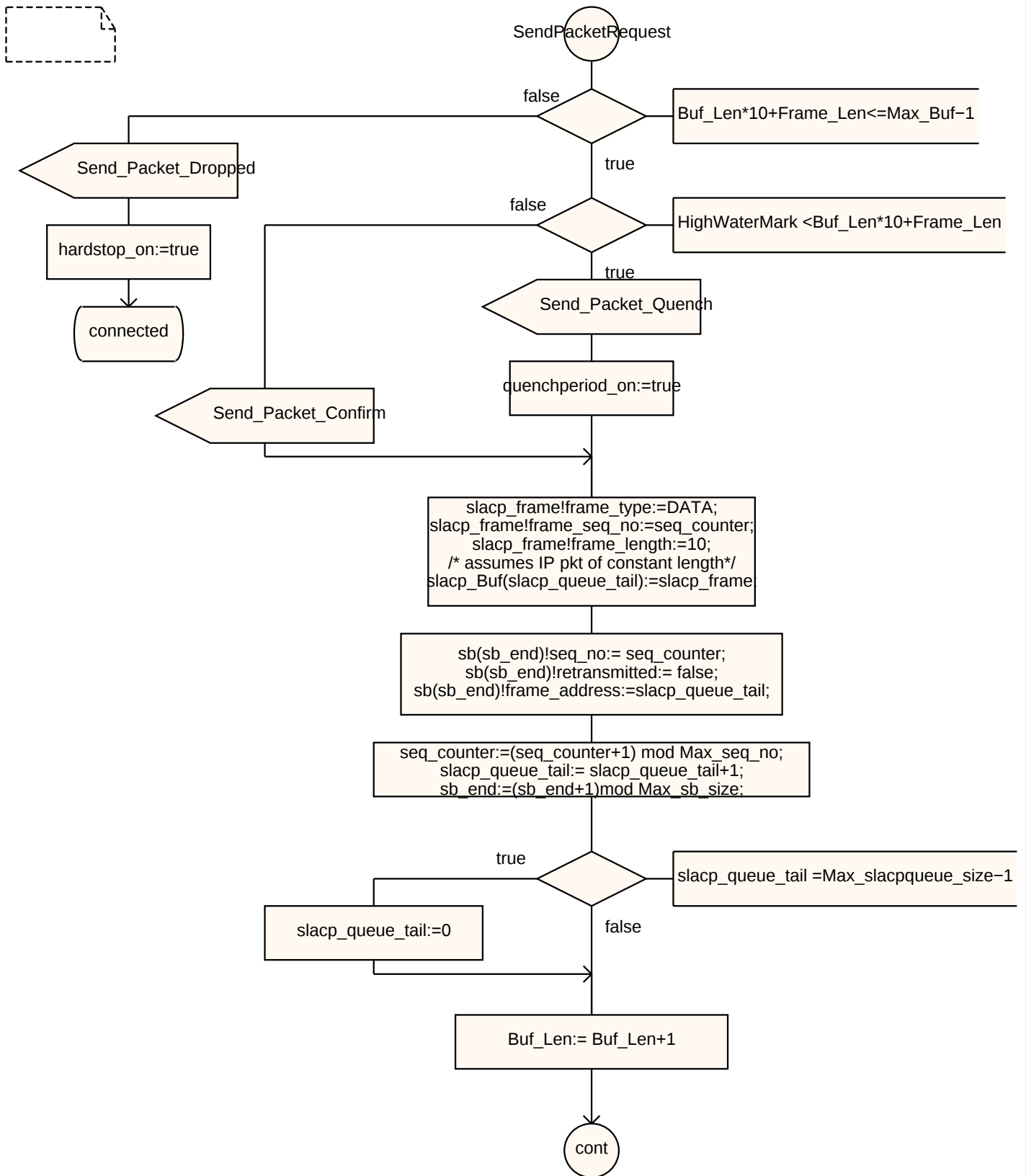
```
dcl sb scoreboard;
dcl sb_begin integer:=0;
dcl sb_end integer:=0;
dcl sb_unacked integer :=0;
dcl deque_no integer:=0;
dcl sack_index integer:=0;
synonym Max_sb_size integer=21;
synonym Max_sacks integer=21;
dcl current_sb_size integer:=0;
```

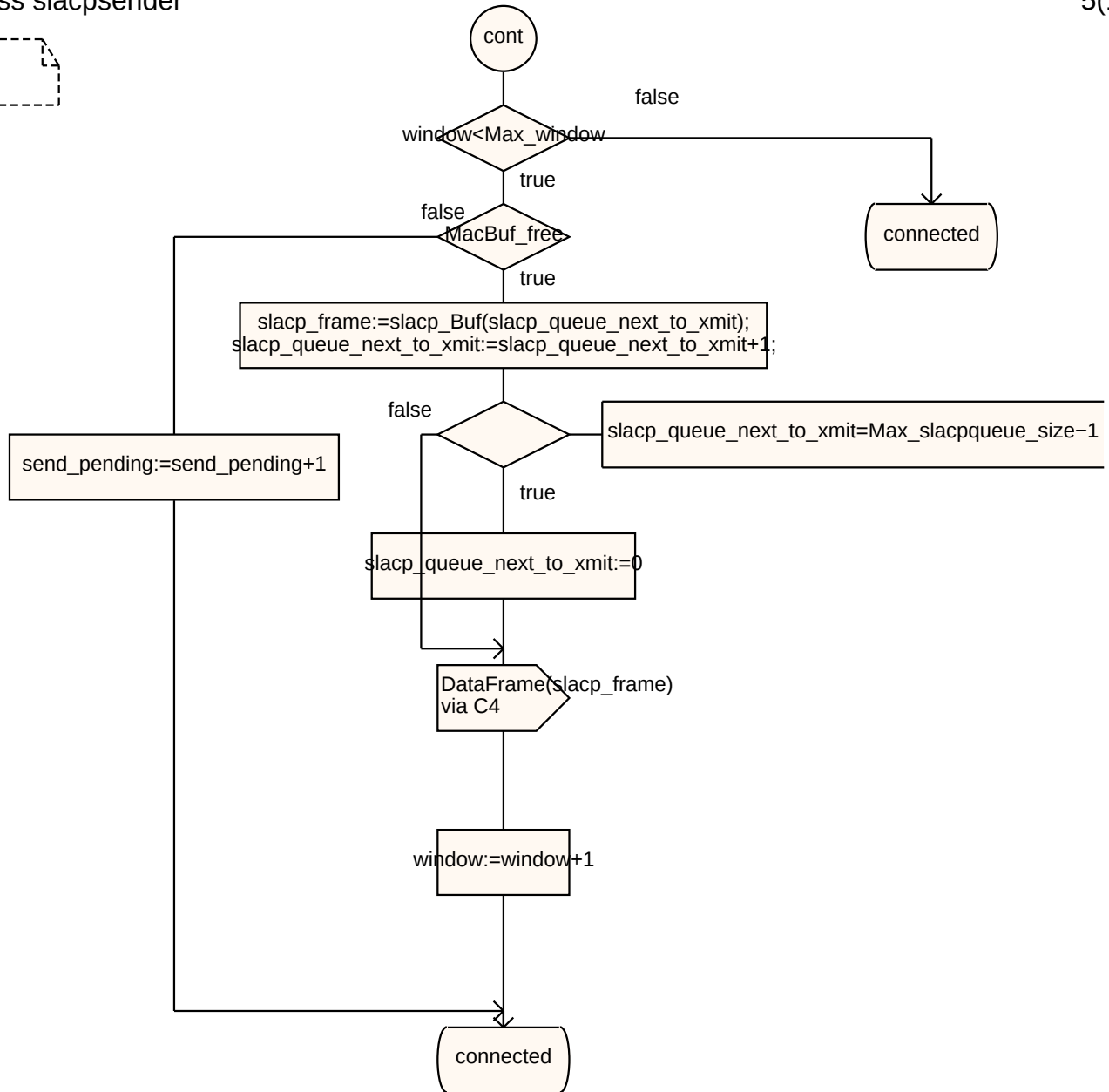
```
Timer Connect_Timer;
dcl connect_timeout duration:=3;
dcl retransmit_counter integer:=0;
Synonym Max_retransmit integer =20;
```

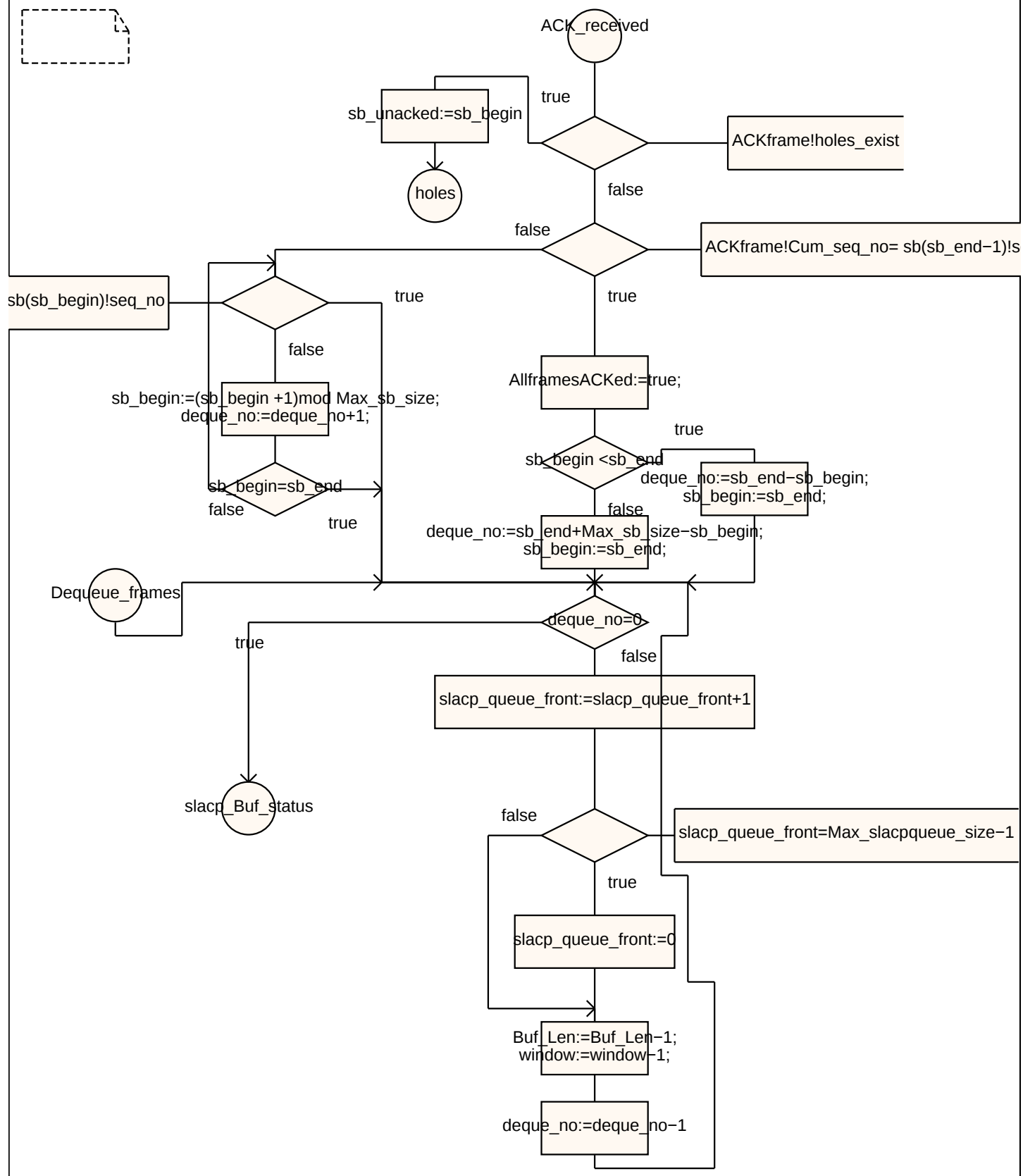
```
dcl closechannel_on boolean :=false;
dcl close_delay duration :=5;
Timer Close_Timer;
dcl close_sent_up boolean:=false;
```

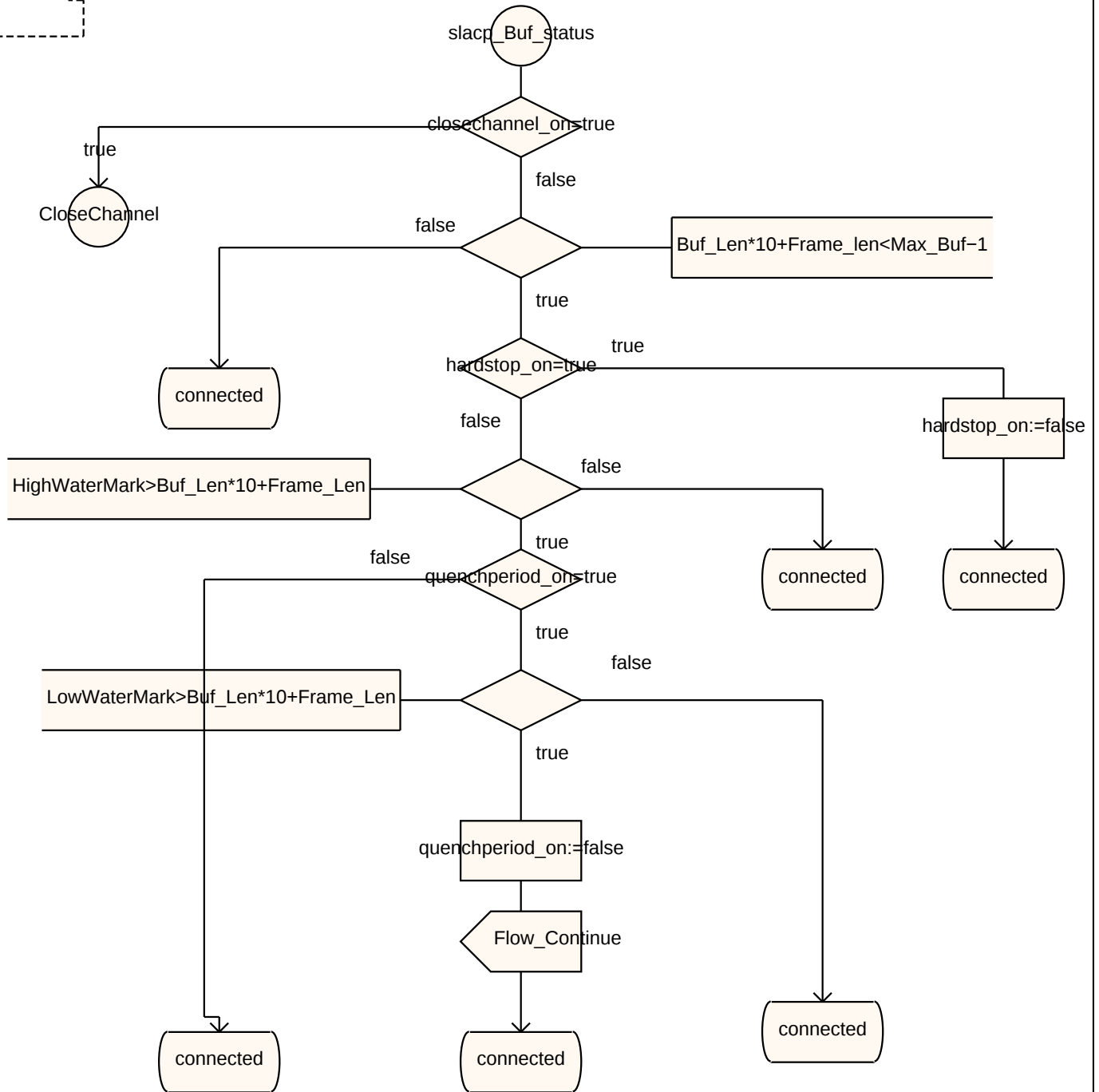


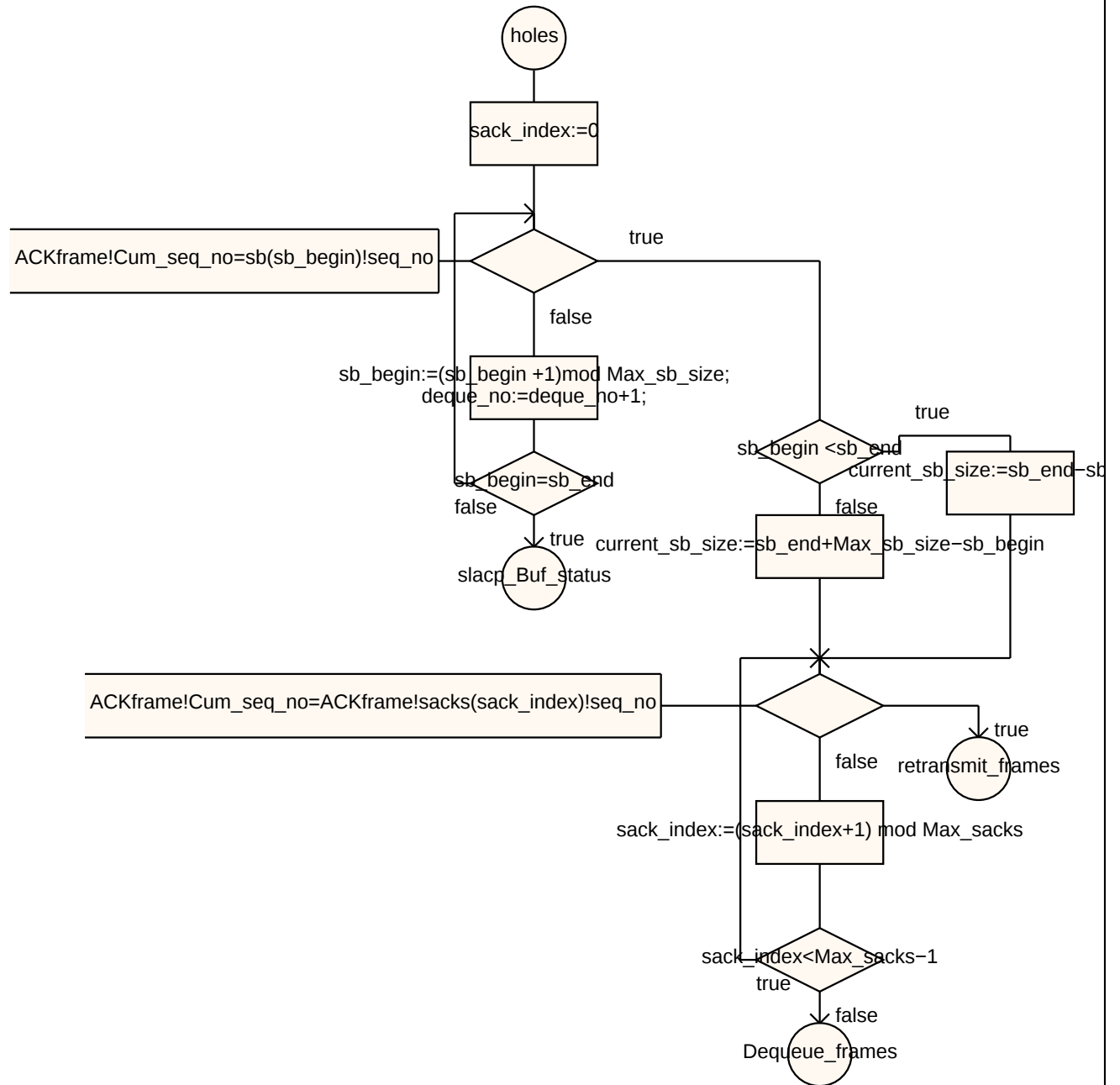


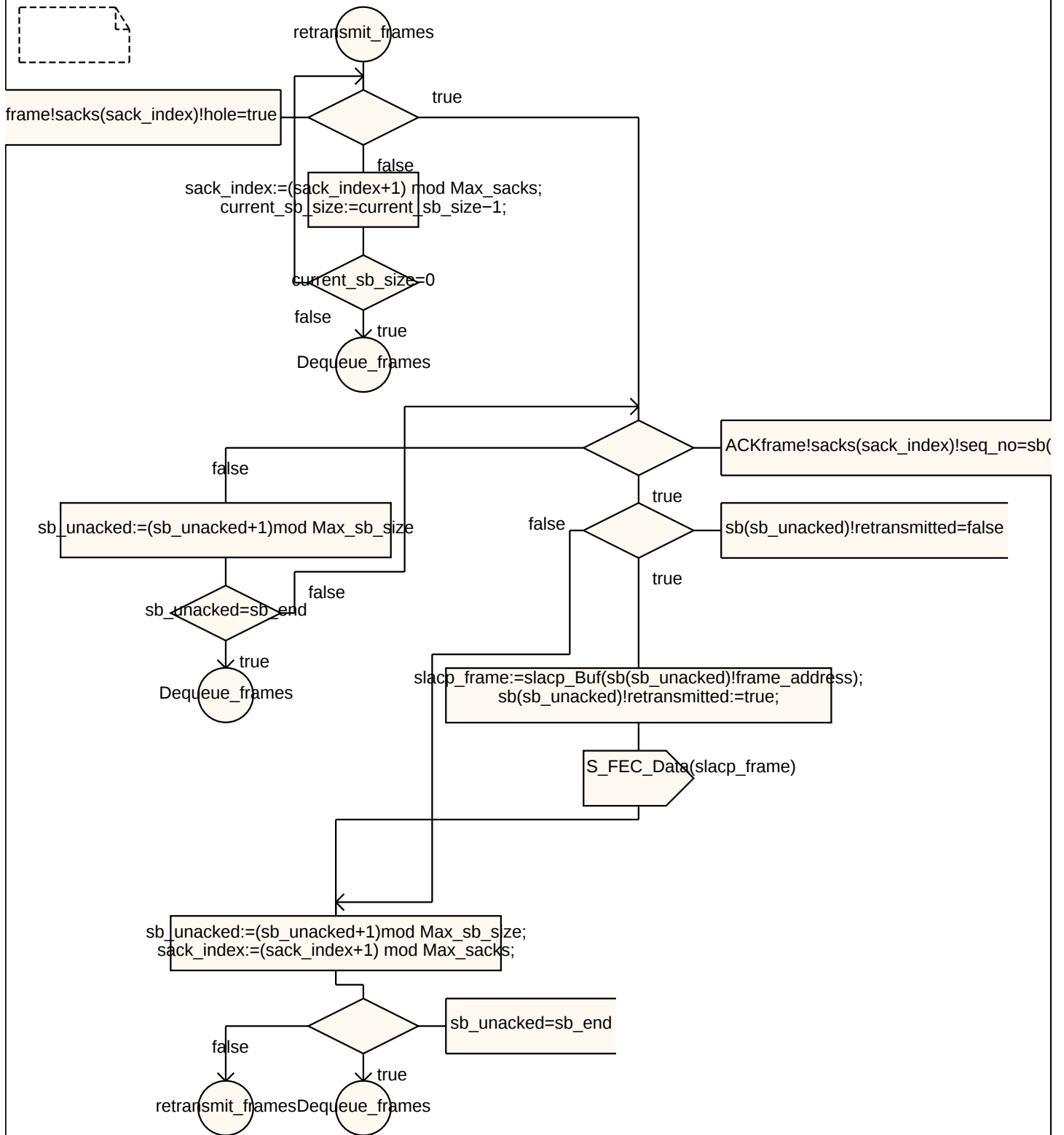


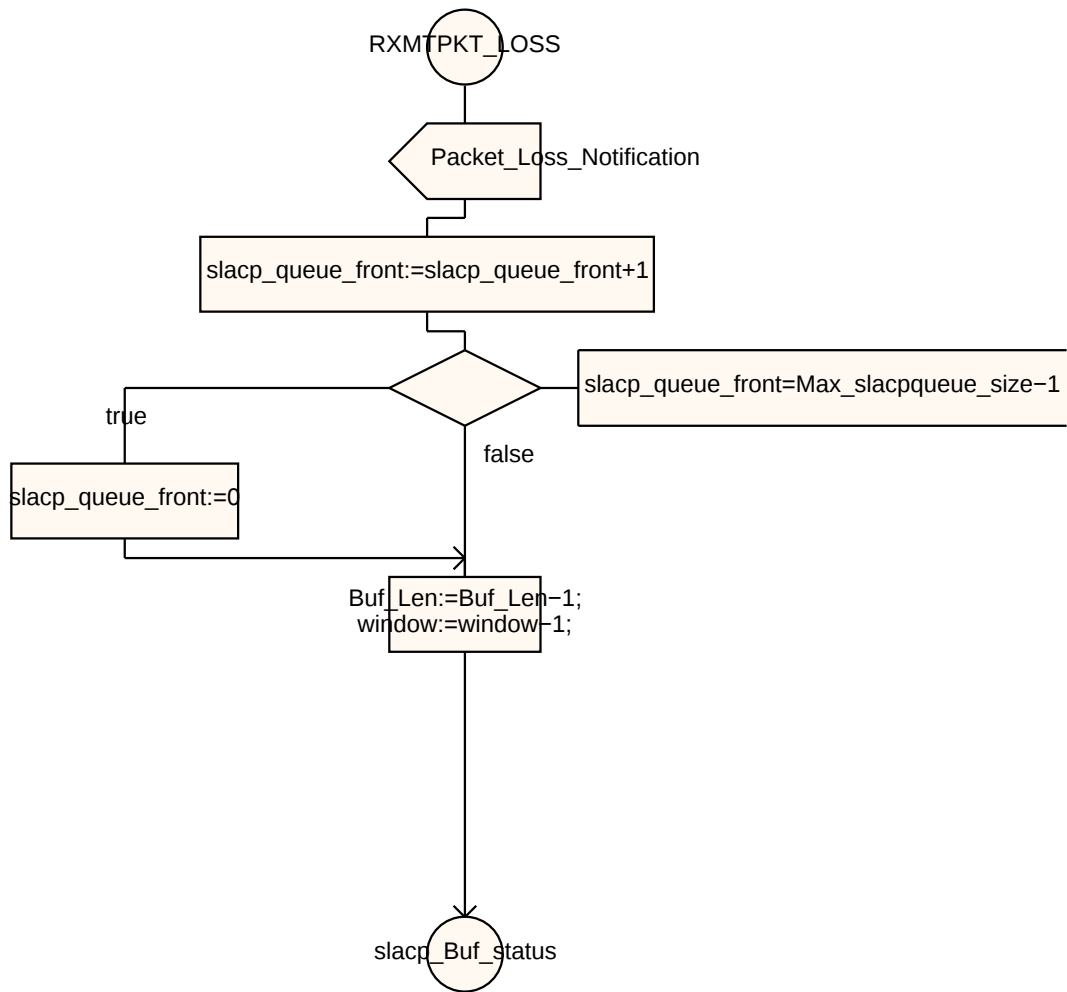


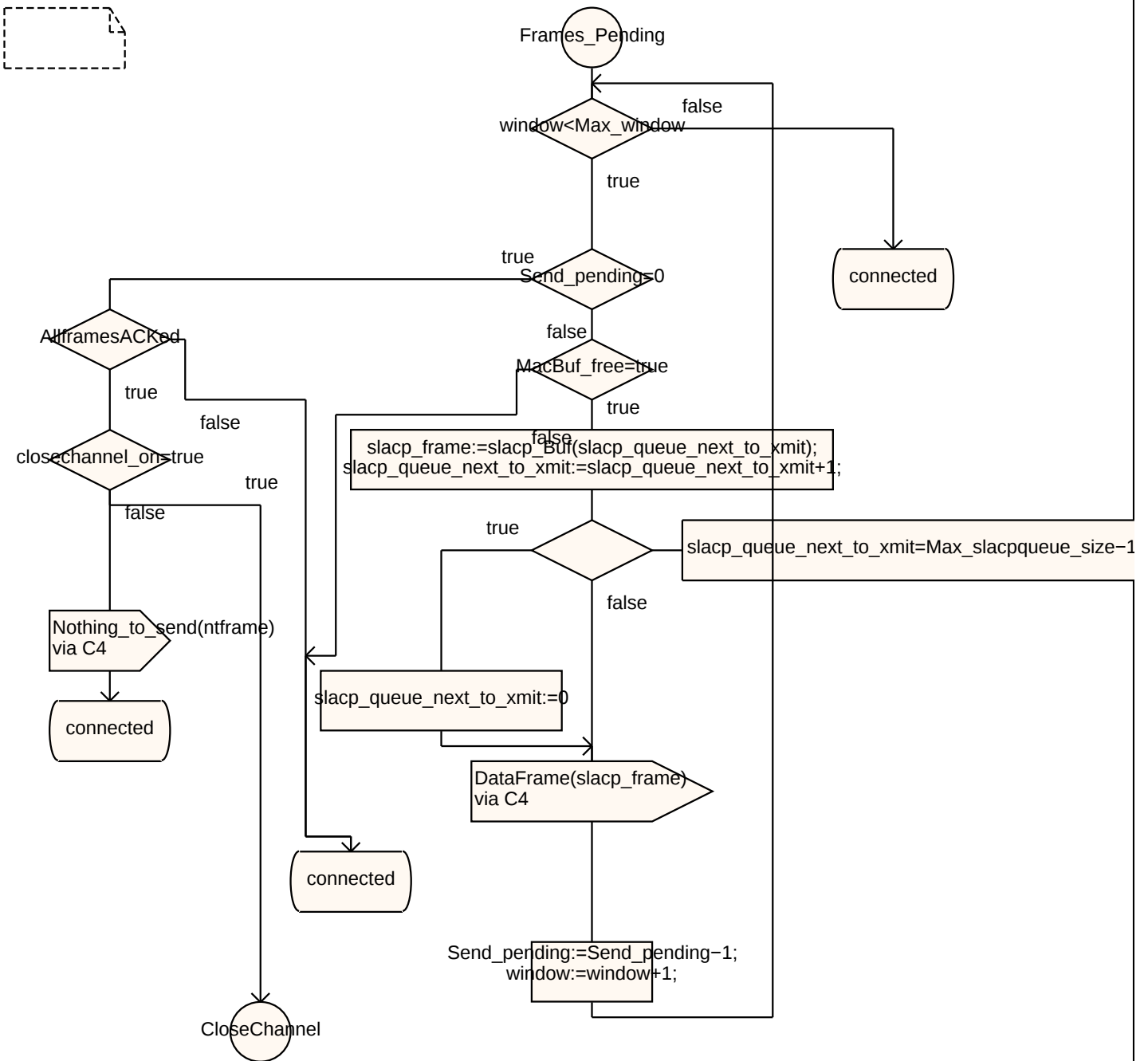


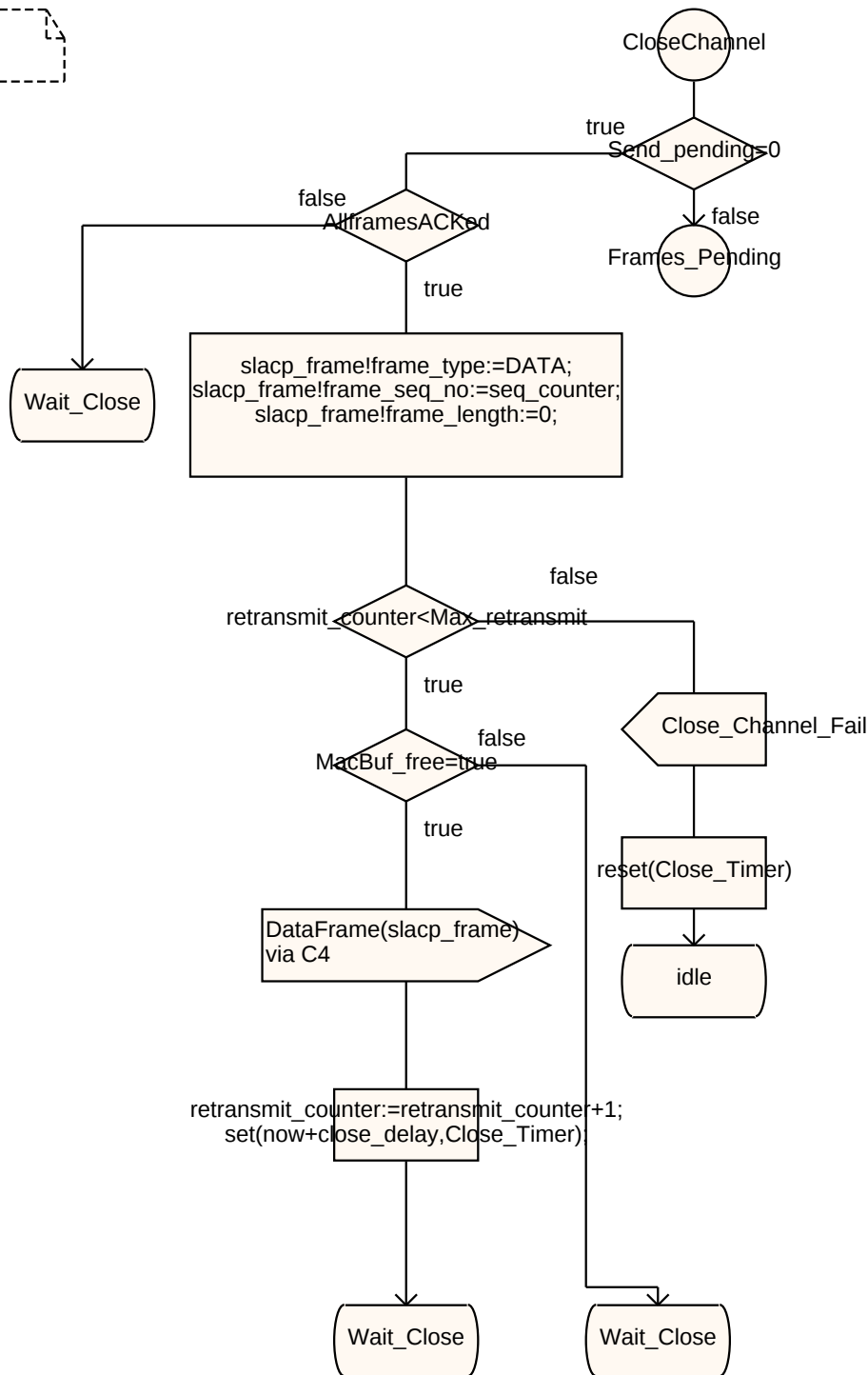


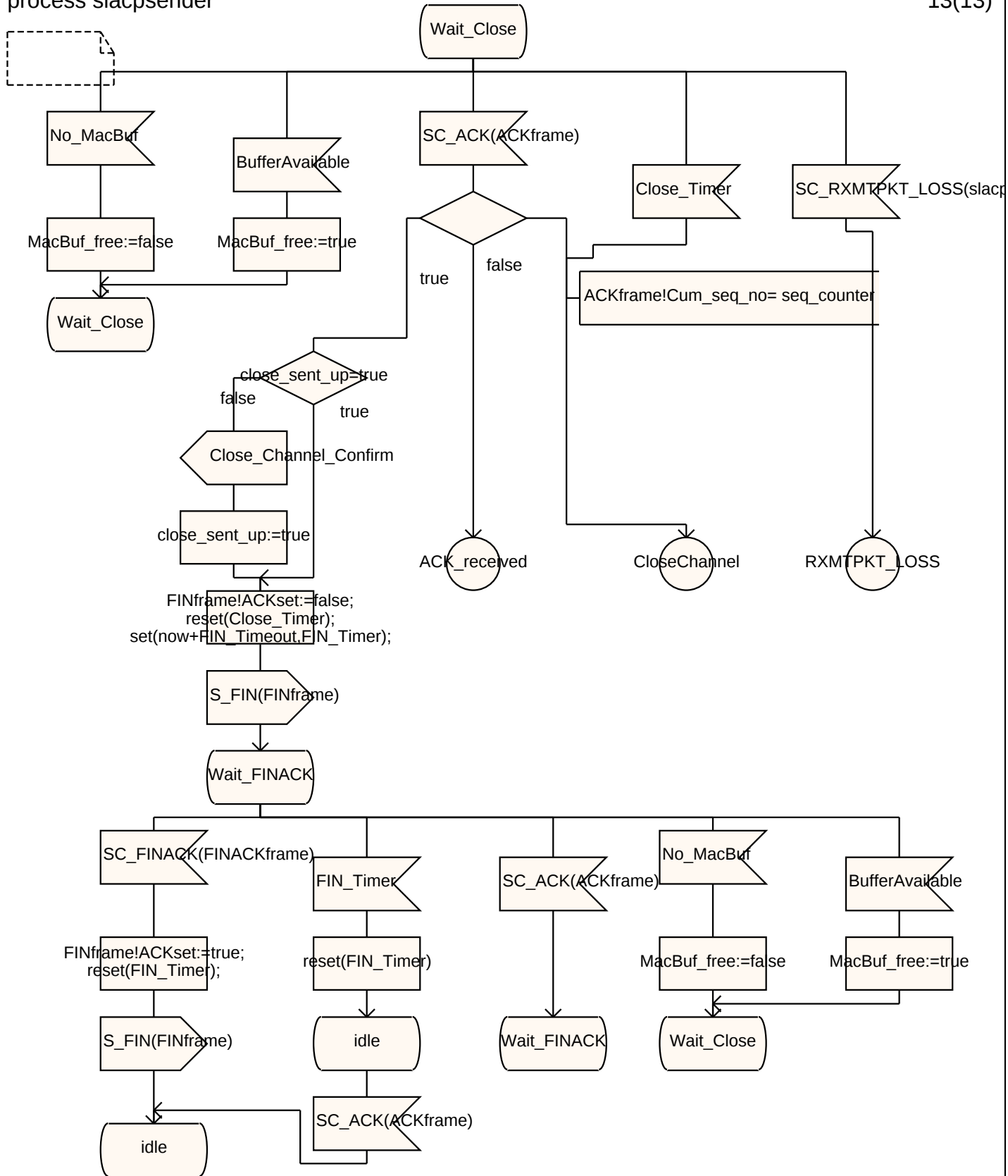












process sendercontrol

1(8)



```
dcl k integer:=0;
dcl i integer:=0;
dcl fec_timeout duration:=2;
timer FEC_Timer;
Synonym Code_Dimension integer=2;
Synonym FECDATA integer =2;
```

```
dcl ACKframe t_ACKframe;
dcl slacp_frame t_slacp_frame;
dcl FEC_Dataframe t_FEC_Dataframe;
dcl FEC_ACKframe t_FEC_ACKframe;
dcl FEC_Rframe t_FEC_Redundancyframe;
dcl FINframe t_FINframe;
dcl FINACKframe t_FINACKframe;
```

```
dcl fec_sb fec_scoreboard;
dcl fec_sb_begin integer:=0;
dcl fec_sb_end integer:=0;
dcl fec_seq_counter integer :=0;
dcl fec_block_counter integer:=0;
dcl fsack_index integer:=0;
synonym Max_fec_sb_size integer=5;
synonym Max_fsacks integer=5;
synonym Max_fec_block_no integer=256;
dcl Send_pending integer:=0;
dcl MacBuf_free boolean:= true;
dcl cwindow integer:=0;
Synonym Max_cwindow integer=2;
```

```
dcl Open_Requestframe t_Open_Request_paramframe;
dcl Open_Confirmframe t_Open_Confirm_paramframe;
```

```
newtype t_FEC_Rblock array(integer,t_FEC_Redundancyframe)
endnewtype;
dcl FEC_RBlock t_FEC_Rblock;
dcl Rblock_index integer :=0;
```

```
newtype fec_sb_entry struct
block_no integer;
seq_no integer;
retransmitted boolean;
frame t_slacp_frame ;
endnewtype;
```

```
newtype fec_scoreboard array (integer,fec_sb_entry)
endnewtype;
```

```
newtype t_SControlframe choice
a t_FEC_Dataframe;
b t_FEC_Redundancyframe;
endnewtype;
```

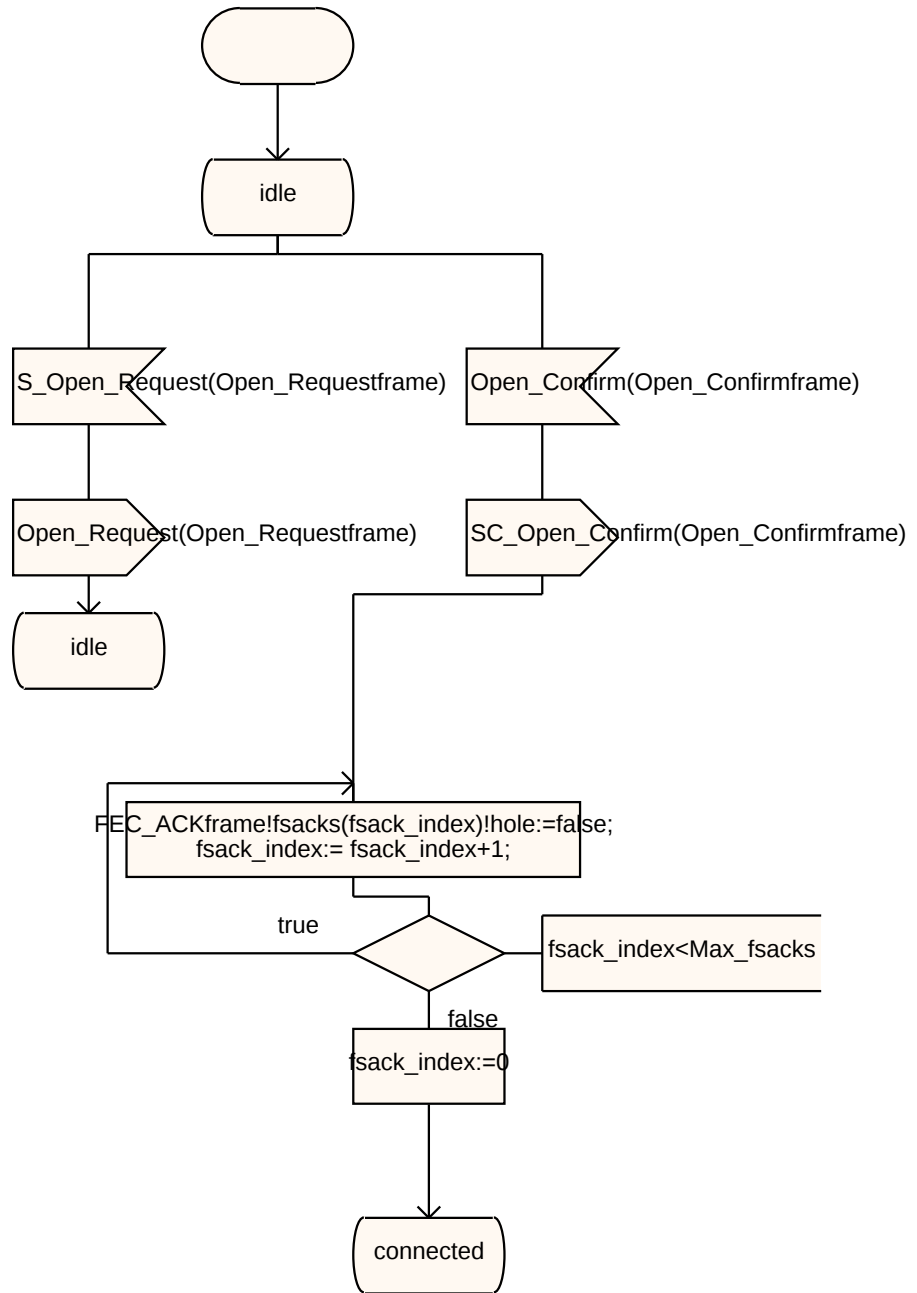
```
/* Queue of Controlframes */
```

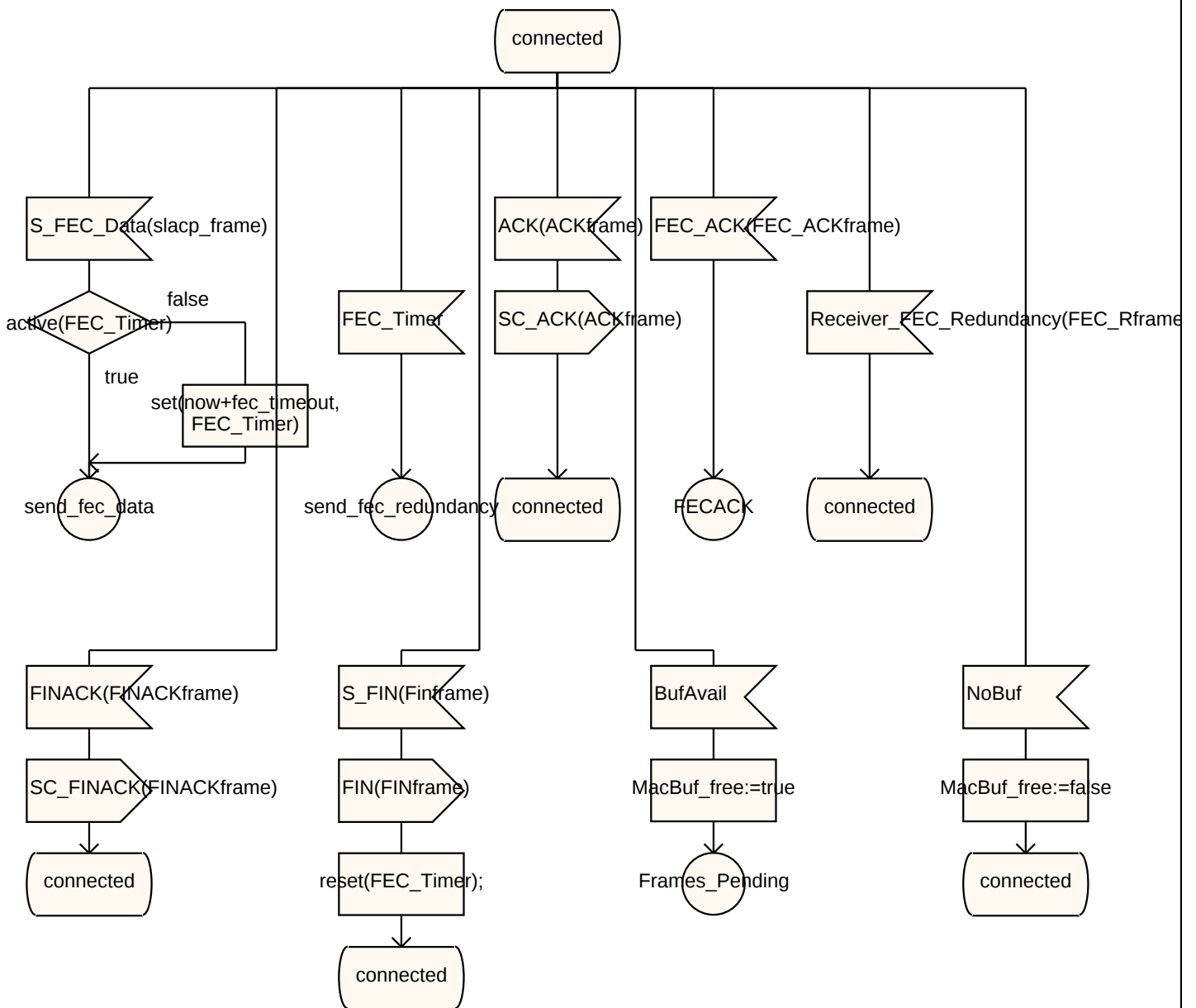
```
newtype t_Control_queue array(integer,t_SControlframe)
endnewtype;
```

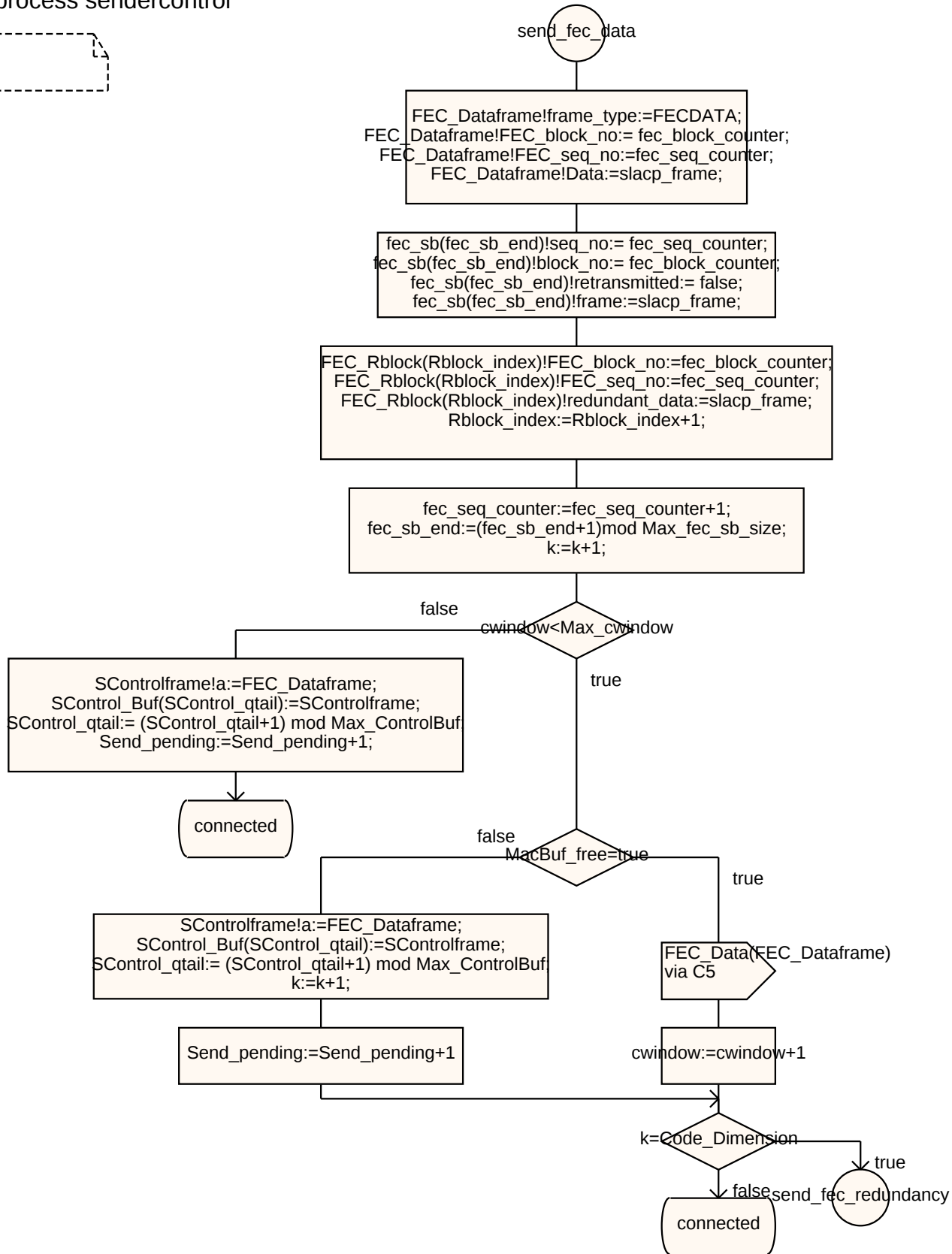
```
/* Control_queue variables */
dcl SControl_Buf t_Control_queue;
```

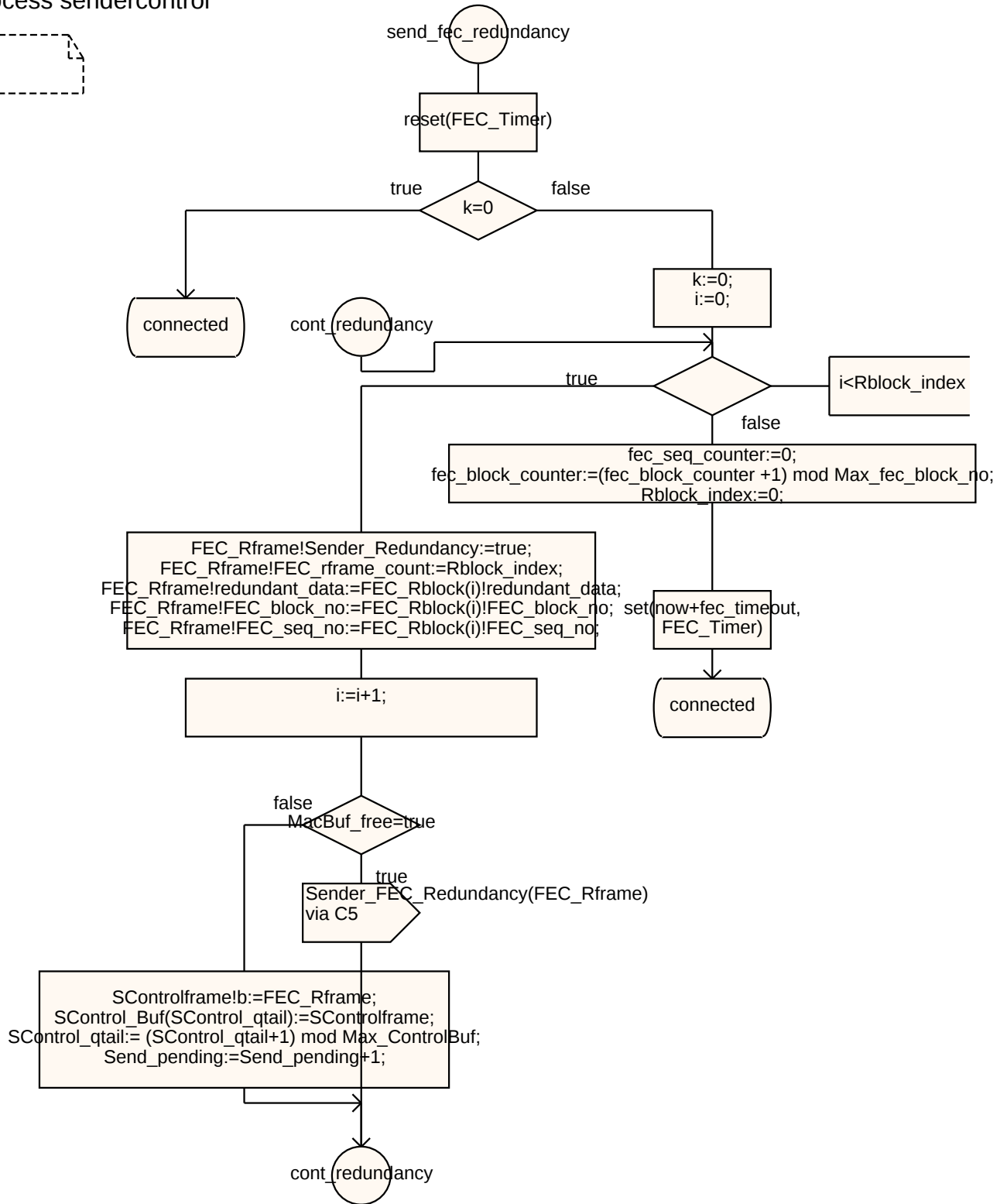
```
dcl SControl_qfront integer:=0;
dcl SControl_qtail integer :=0;
dcl SControlframe t_SControlframe;
Synonym Max_ControlBuf integer=30;
```

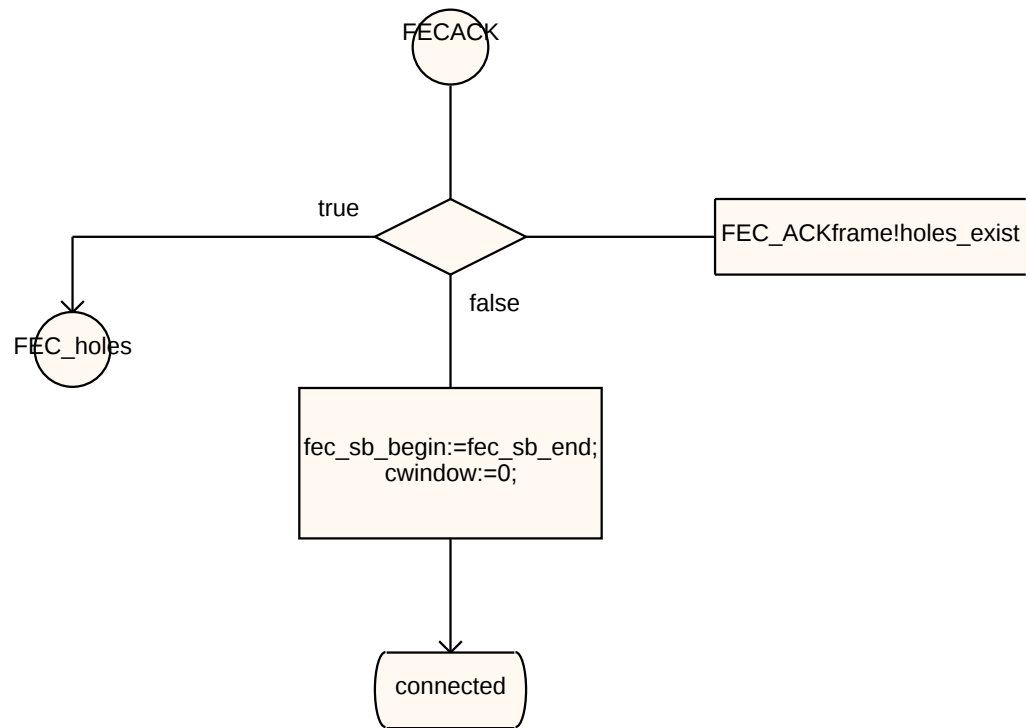
⁸
process sendercontrol

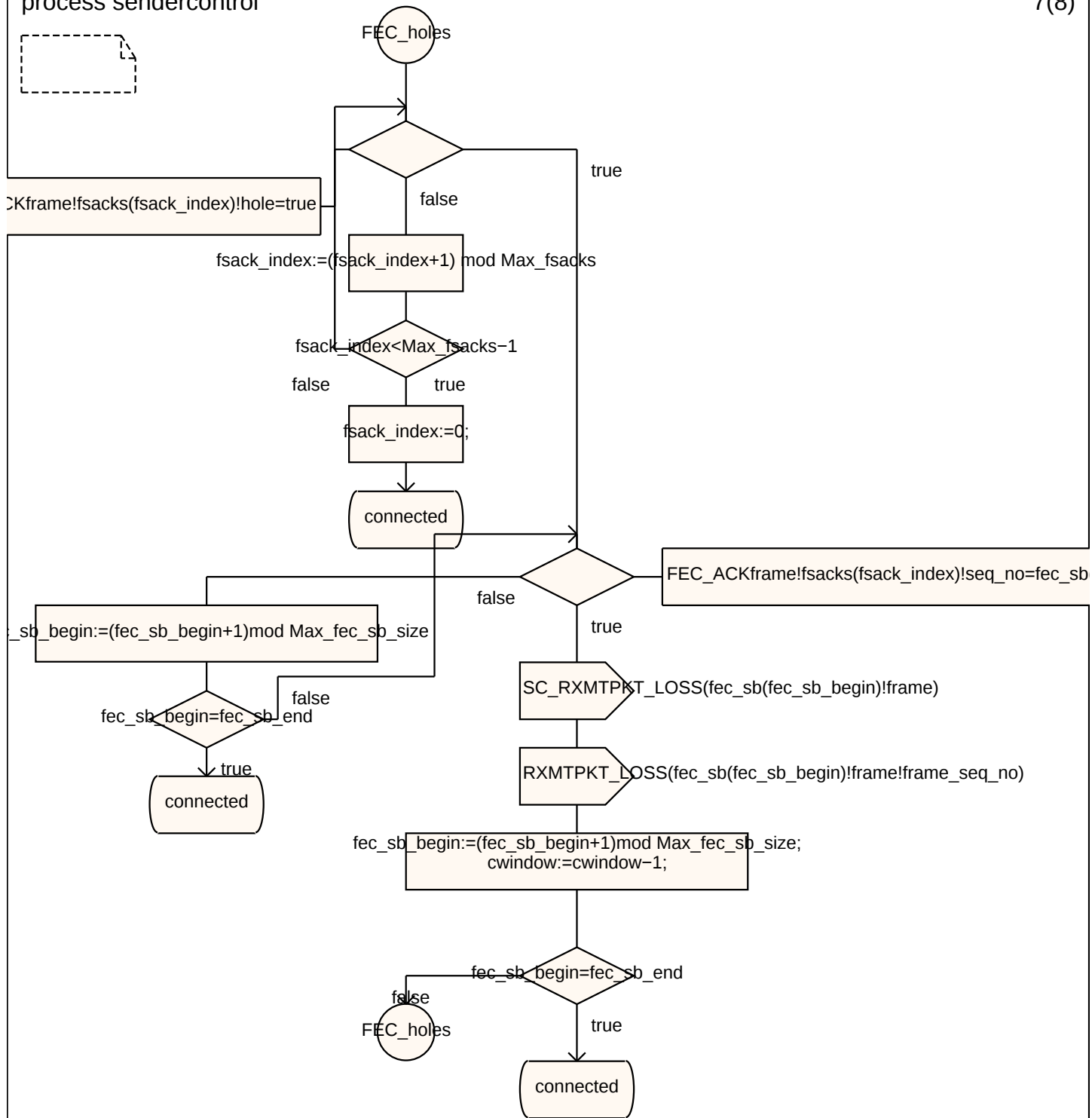


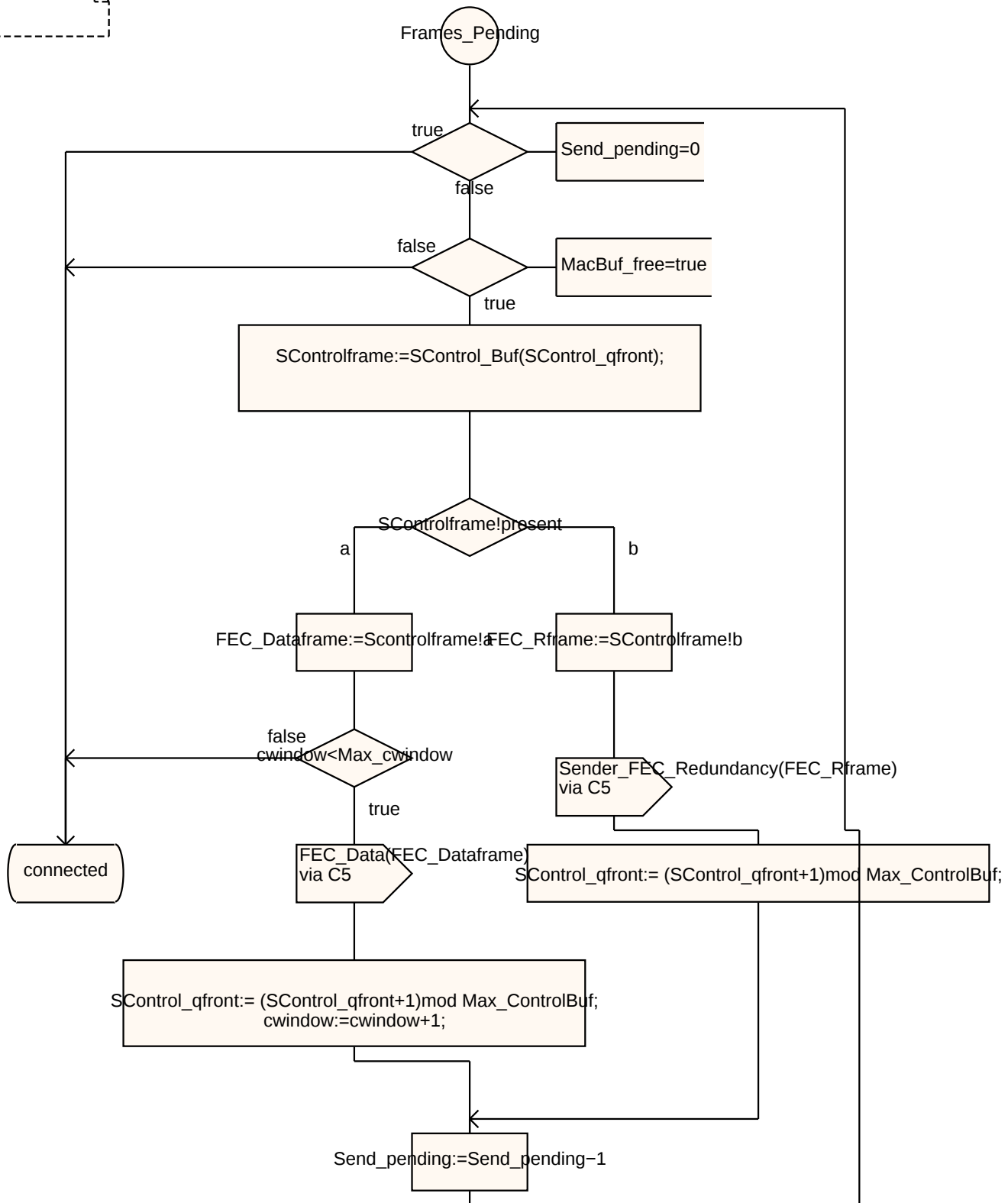


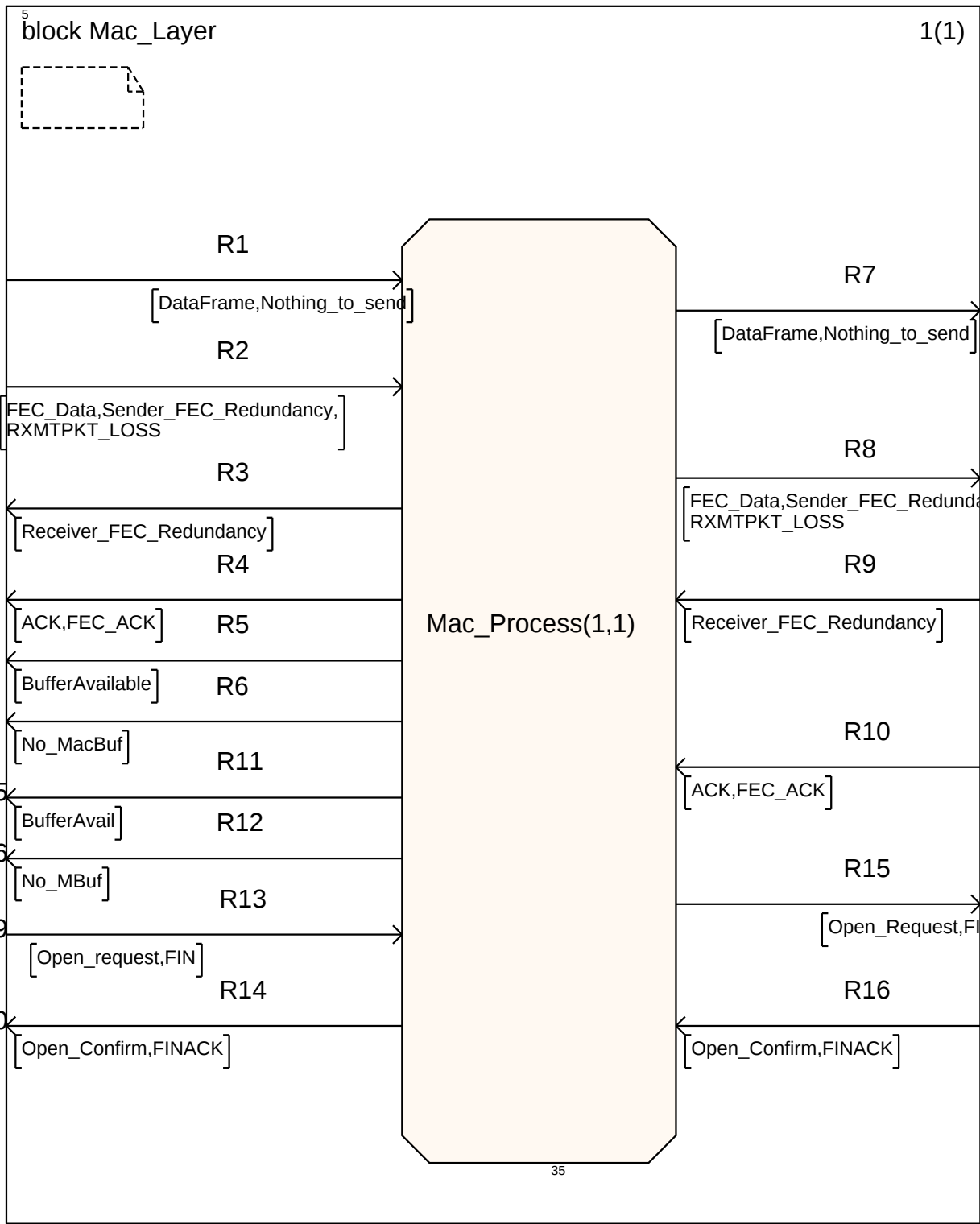












process Mac_Process

1(5)



```

/* Mac_queue variables */
dcl Mac_Buf t_Mac_queue;
dcl Mac_queue_front integer:=0;
dcl Mac_queue_tail integer:=0;

```

```

newtype t_Macframe choice
a t_slacp_frame;
b t_ACKframe;
c t_FEC_Dataframe;
d t_FEC_Redundancyframe;
e t_FEC_ACKframe;
f t_nothingtosendframe;
g t_Open_Request_paramframe;
h t_Open_Confirm_paramframe;
i t_FINframe;
j t_FINACKframe;
k integer;
endnewtype;

```

```

Synonym Max_MacBuf integer=70;
Synonym MacLowWaterMark integer=40;
Synonym Max_Macqueue_size integer=10;
dcl slacp_frame t_slacp_frame;
dcl MacBuf_Len integer:=0;
dcl Frame_Len integer:=10;
dcl Mac_counter integer:=0;
dcl delay_duration:=1;
dcl NoBuf_on boolean:=false;
dcl Bufavail_on boolean:=true;

```

```

dcl ACKframe t_ACKframe;
dcl FEC_ACKframe t_FEC_ACKframe;
dcl FEC_Rframe t_FEC_Redundancyframe;
dcl FEC_Dataframe t_FEC_Dataframe;
dcl Macframe t_Macframe;
dcl ntframe t_nothingtosendframe;
dcl FINframe t_FINframe;
dcl FINACKframe t_FINACKframe;
dcl seq_no integer;
Timer Link_Timer ;

```

```

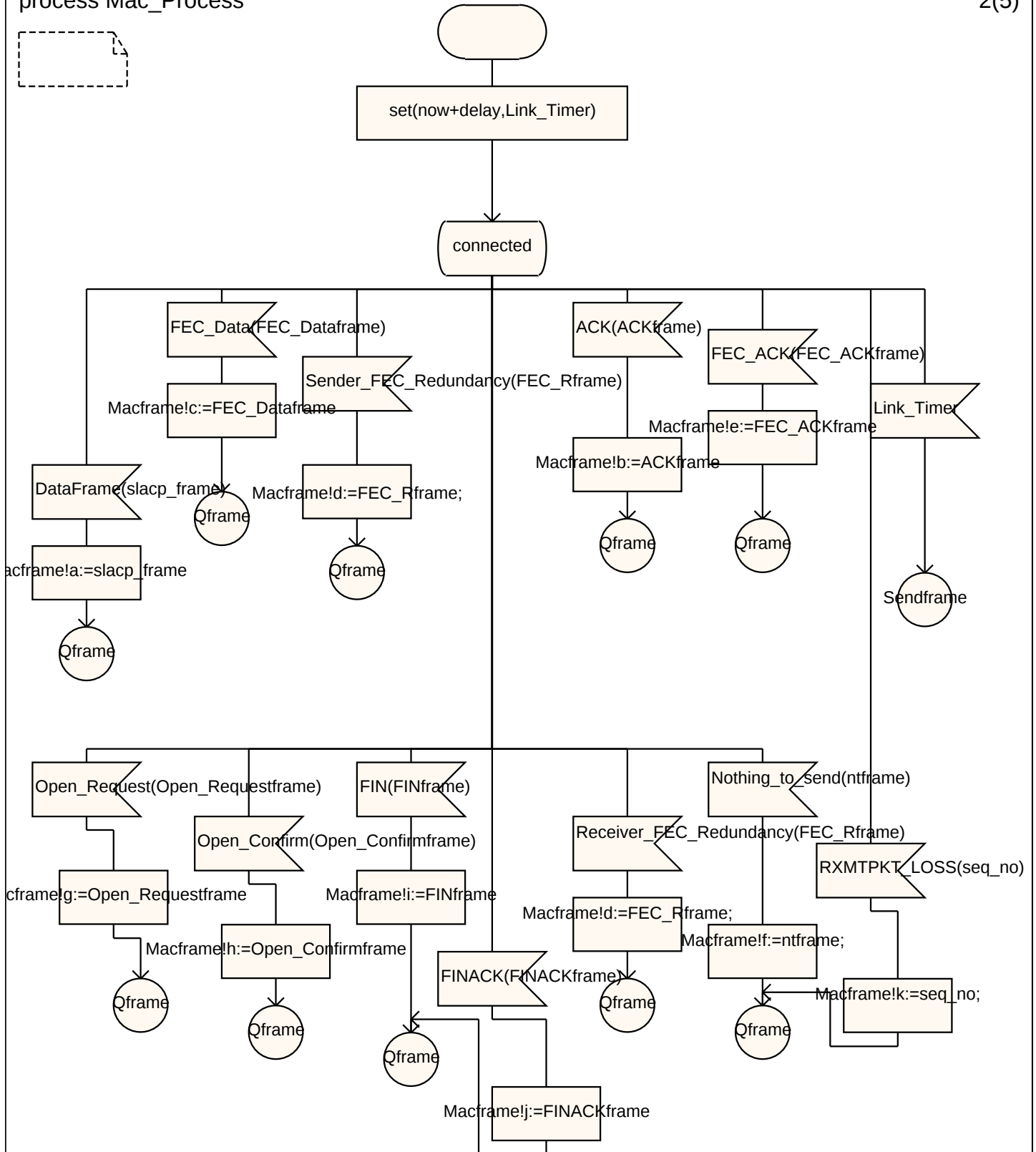
/* Queue of Mac frames */
newtype t_Mac_queue array(integer,t_Macframe)
endnewtype;

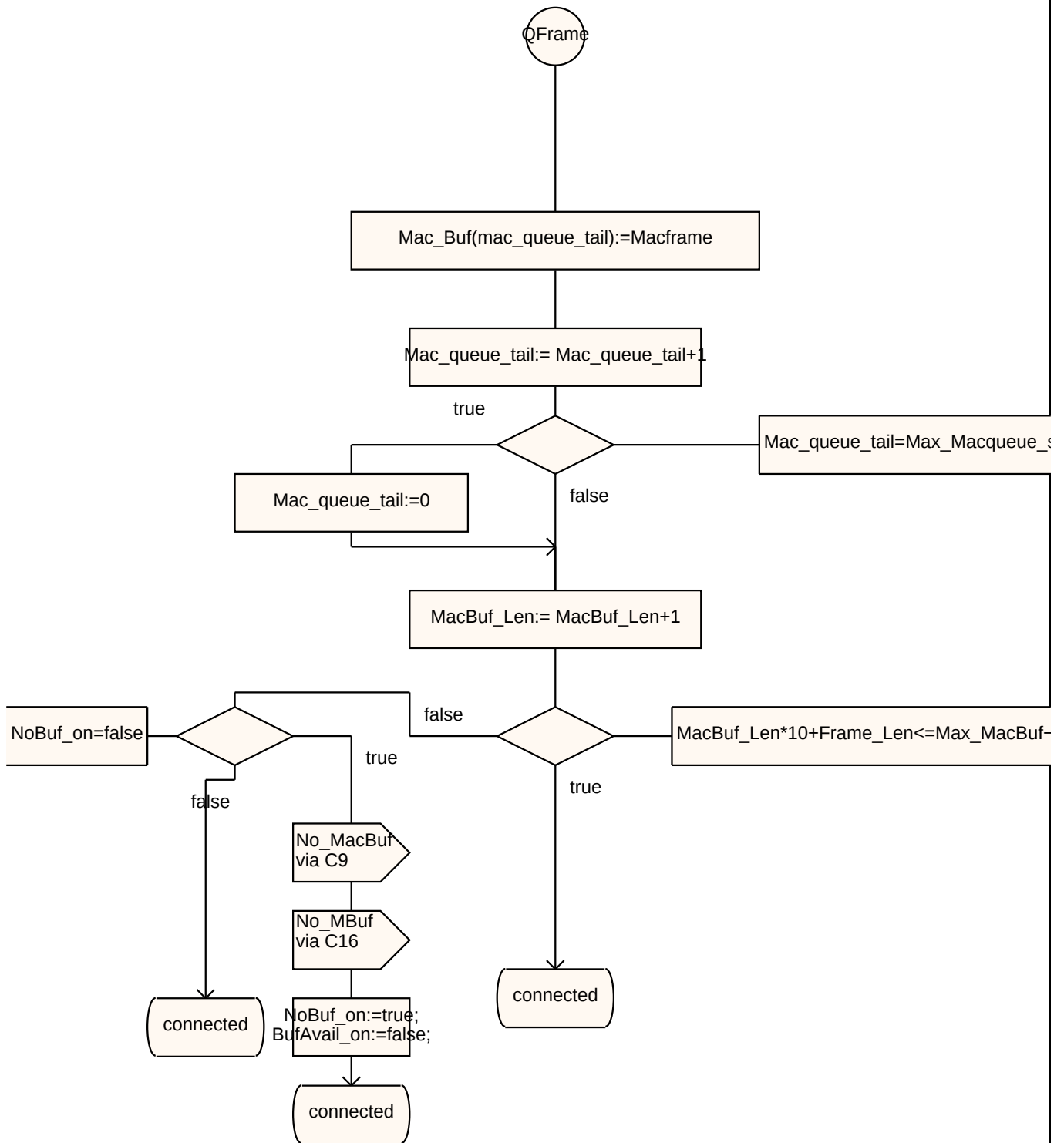
```

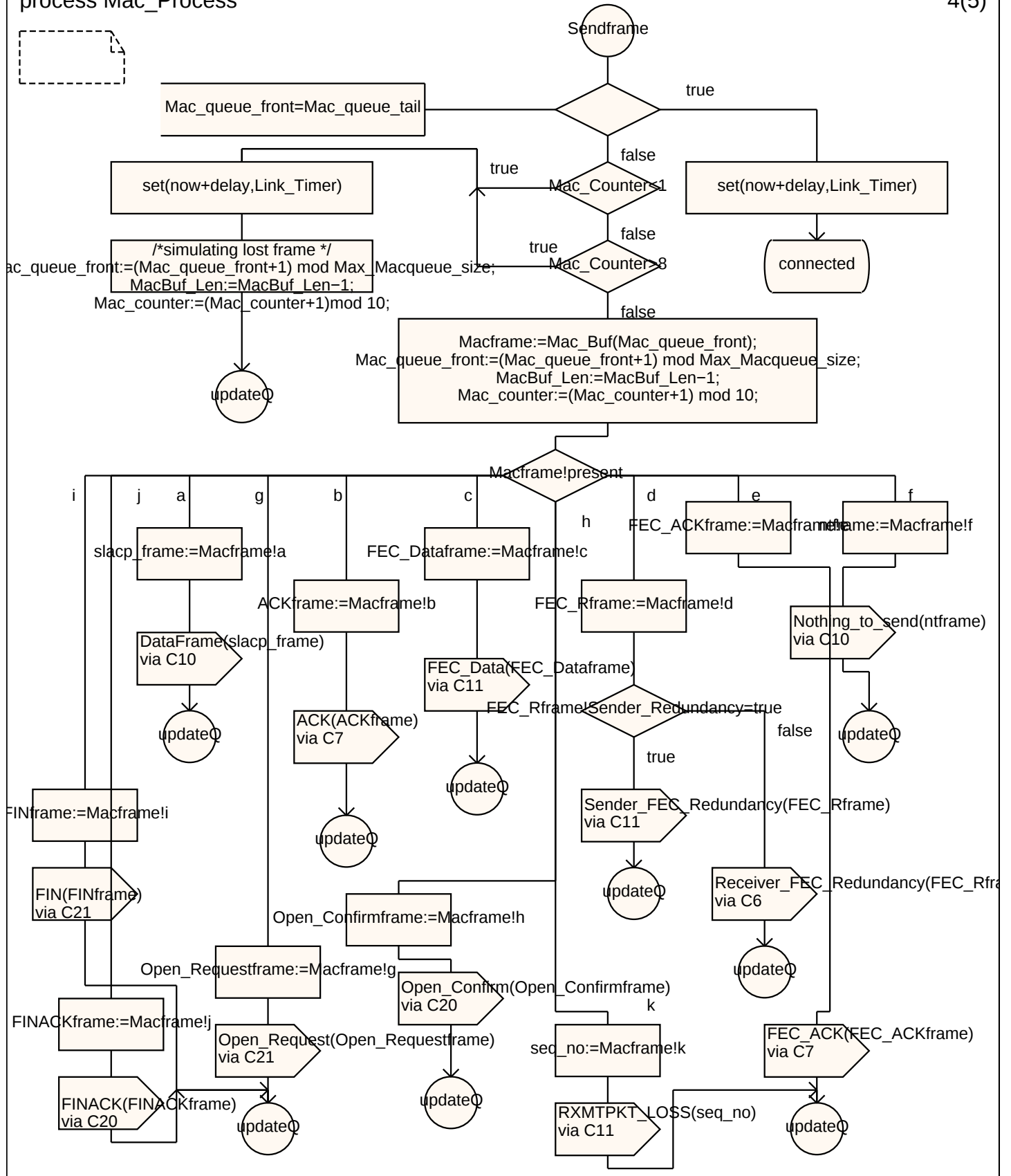
```

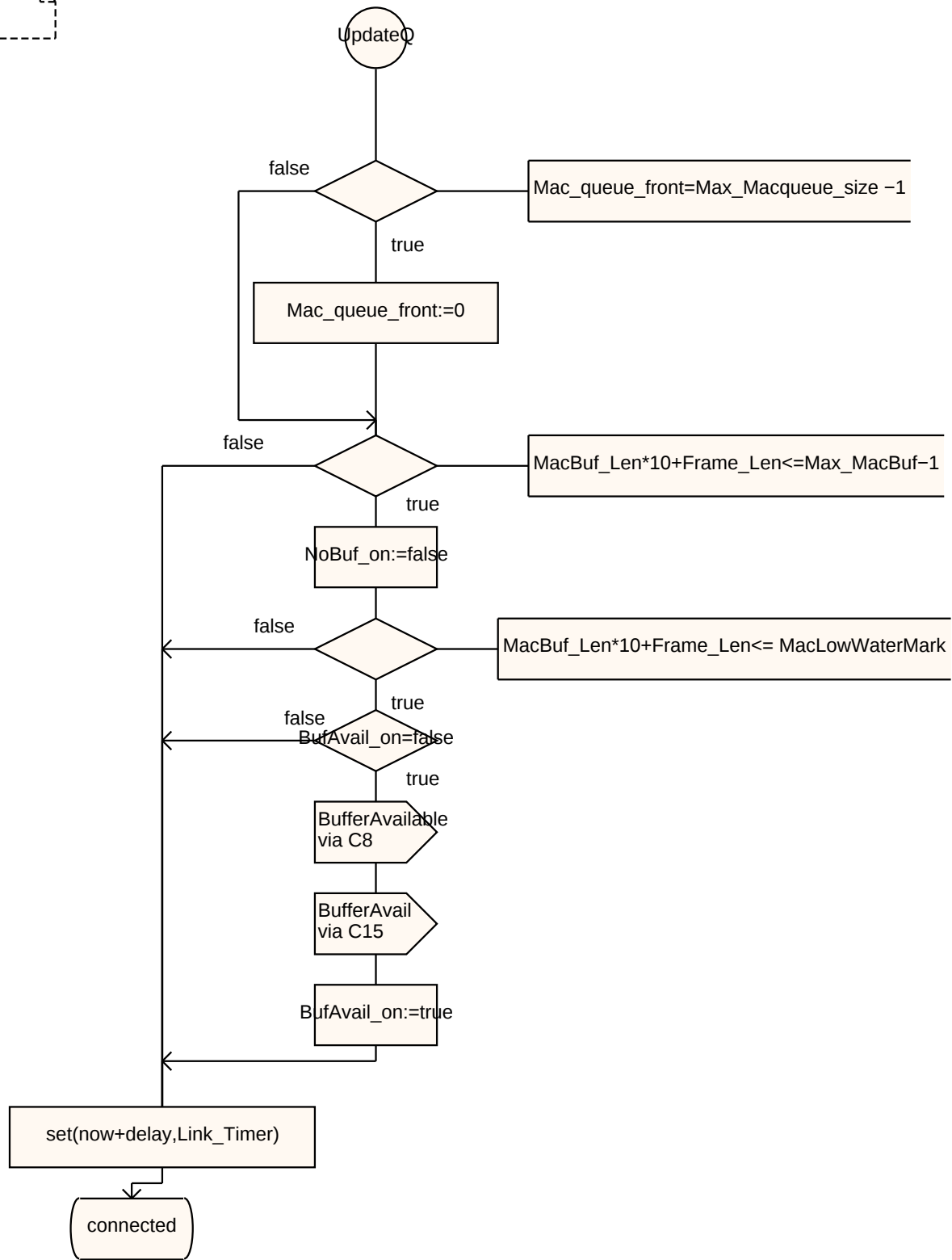
dcl Open_Requestframe t_Open_Request_paramframe;
dcl Open_Confirmframe t_Open_Confirm_paramframe;

```







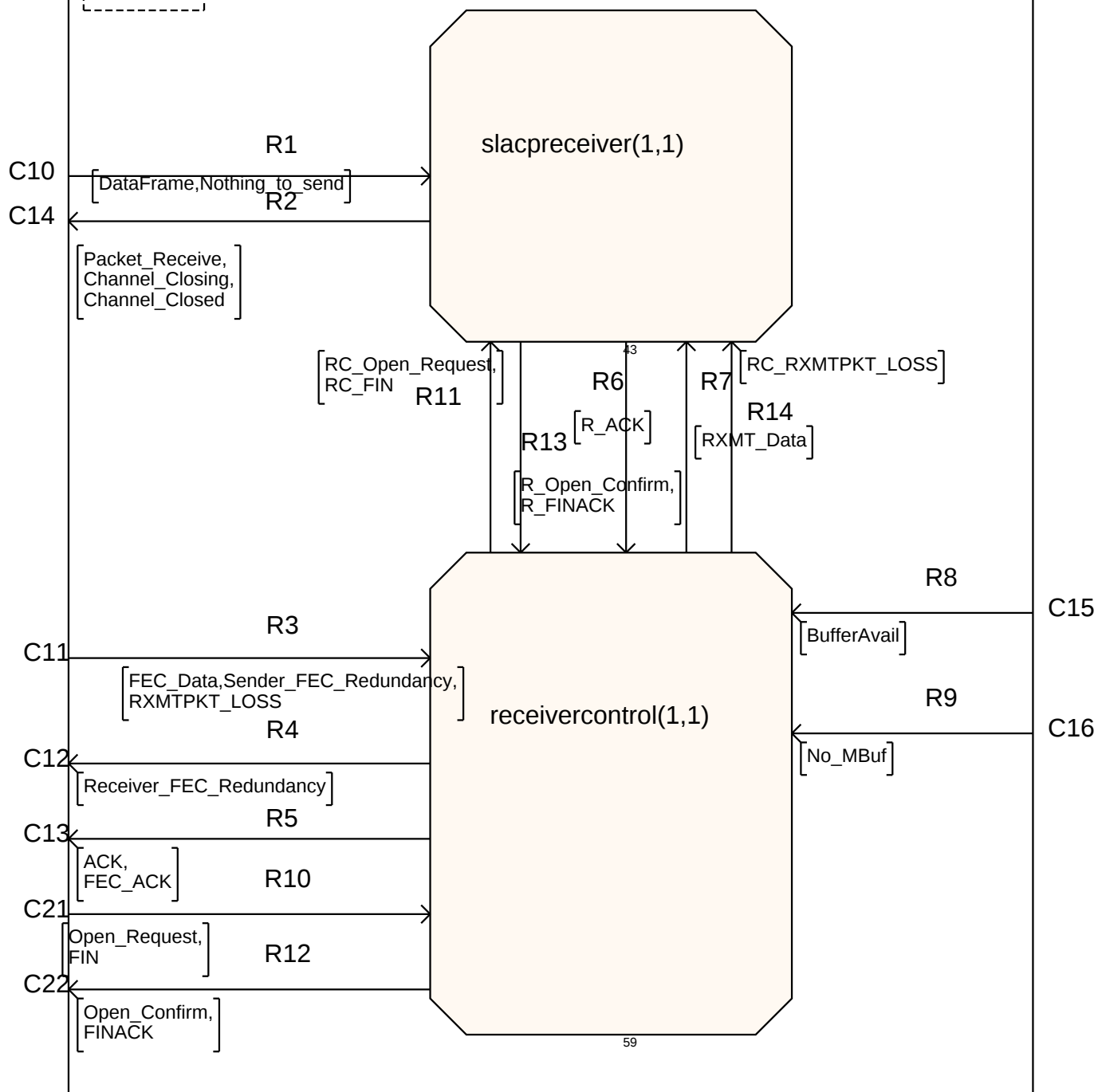




SIGNAL
RC_Open_Request(t_Open_Request_paramframe),
R_Open_Confirm(t_Open_Confirm_paramframe),
R_FINACK(t_FINACKframe), RC_FIN(t_FINframe),
R_ACK(t_ACKframe),RXMT_Data(t_slacp_frame),
RC_RXMTPKT_LOSS(integer);

5 block slacp_receiver

2(2)



process slacpreceiver

1(13)



```
dcl reasem_Buf t_reassembly_queue;
dcl reasem_qfront integer:=0;
dcl reasem_qtail integer:=0;
dcl reasem_qinsert integer:=0;
synonym Max_reasem_queue_size integer=30;
```

```
dcl slacp_frame t_slacp_frame;
dcl ACKframe t_ACKframe;
dcl ntframe t_nothingtosendframe;
dcl FINframe t_FINframe;
dcl FINACKframe t_FINACKframe;
```

```
Timer ACK_Timer;
synonym ACK_thresh integer = 2;
dcl ack_timeout duration :=8;
dcl frame_expected integer:=0;
dcl ack_pending integer :=0;
dcl sack_index integer:=0;
dcl sack_begin integer :=0;
synonym Max_sacks integer = 21;
dcl i integer:=0;
dcl filled_block integer:=0;
dcl j integer:=0;
dcl seq_no integer;
```

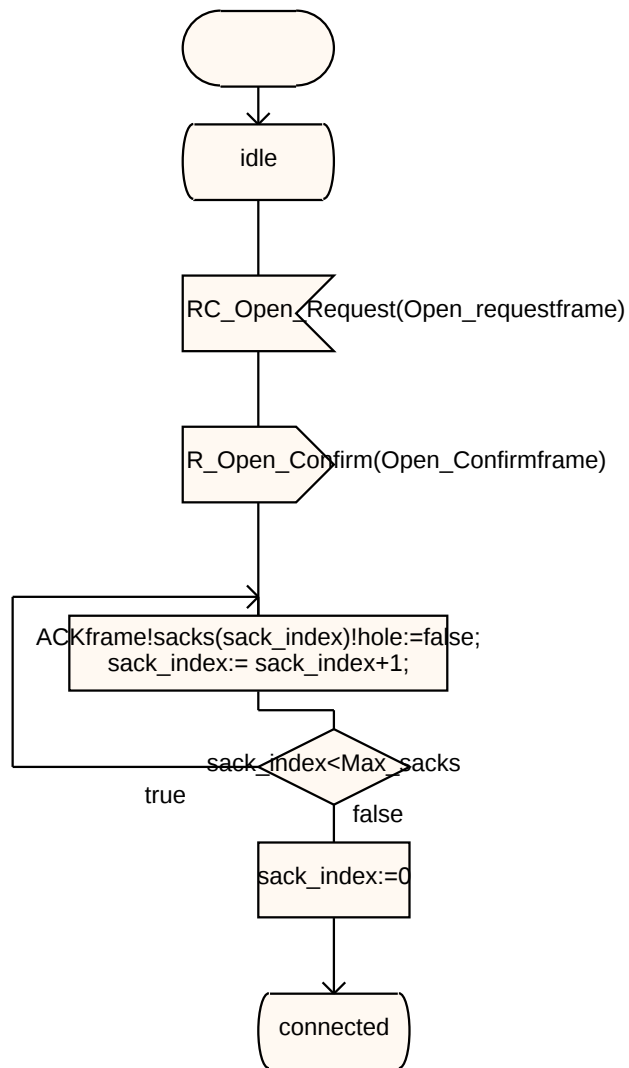
```
/* reassembly frame*/
newtype t_reassemblyframe struct
hole boolean;
seq_no integer;
slacp_frame t_slacp_frame
endnewtype t_reassemblyframe;
```

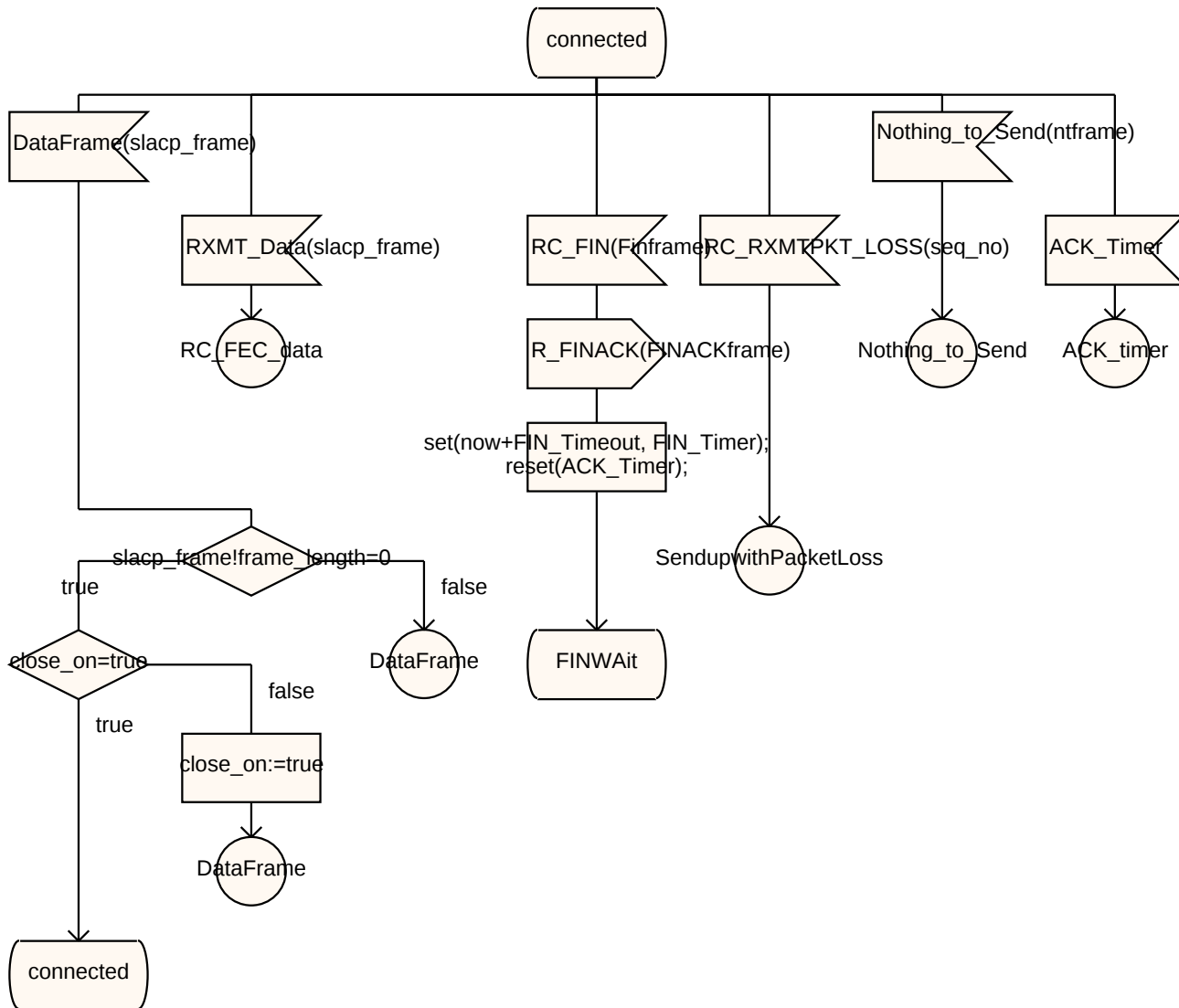
```
/* Queue of slacp frames */
```

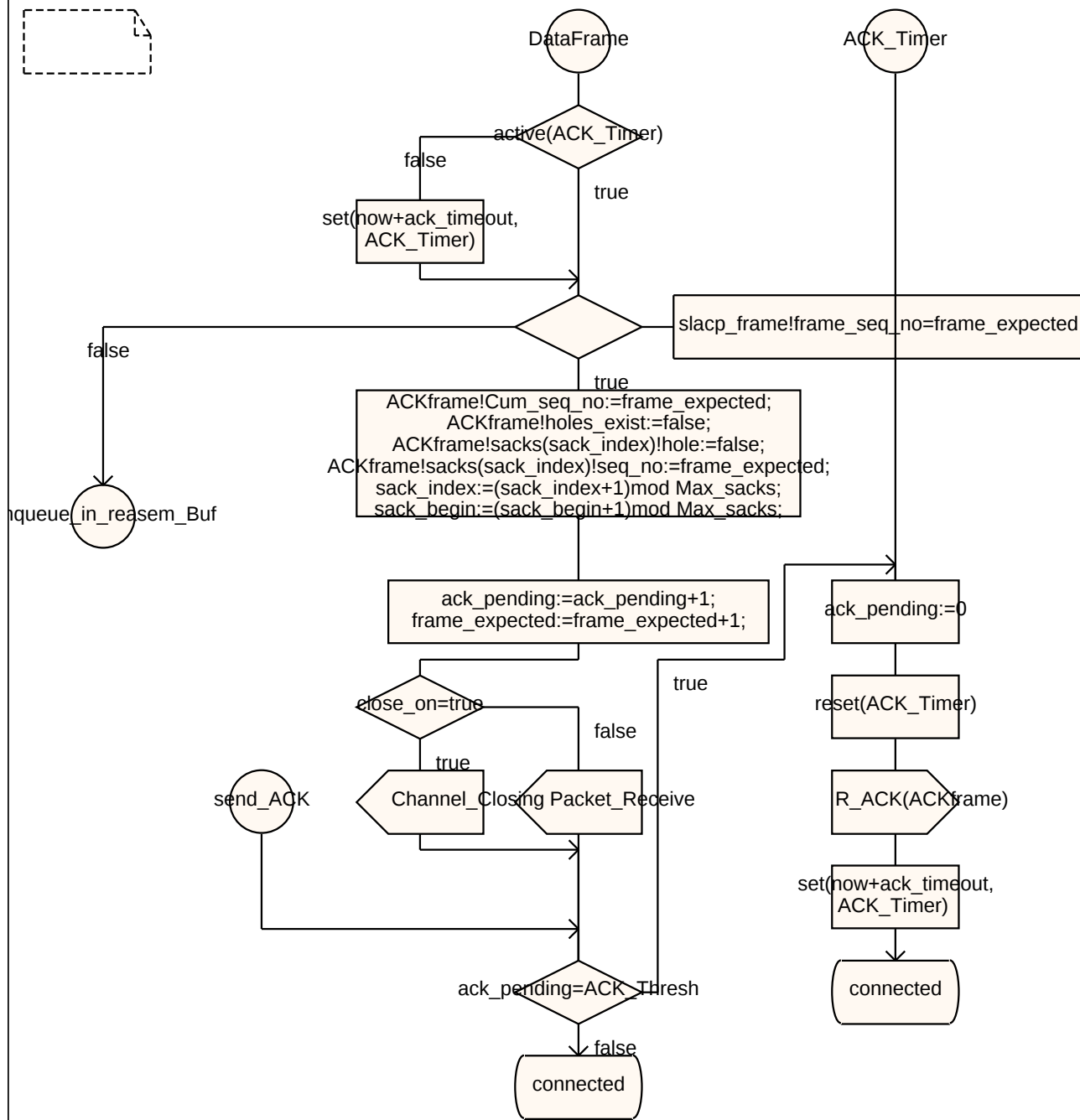
```
newtype t_reassembly_queue array(integer,t_reassemblyframe)
endnewtype;
```

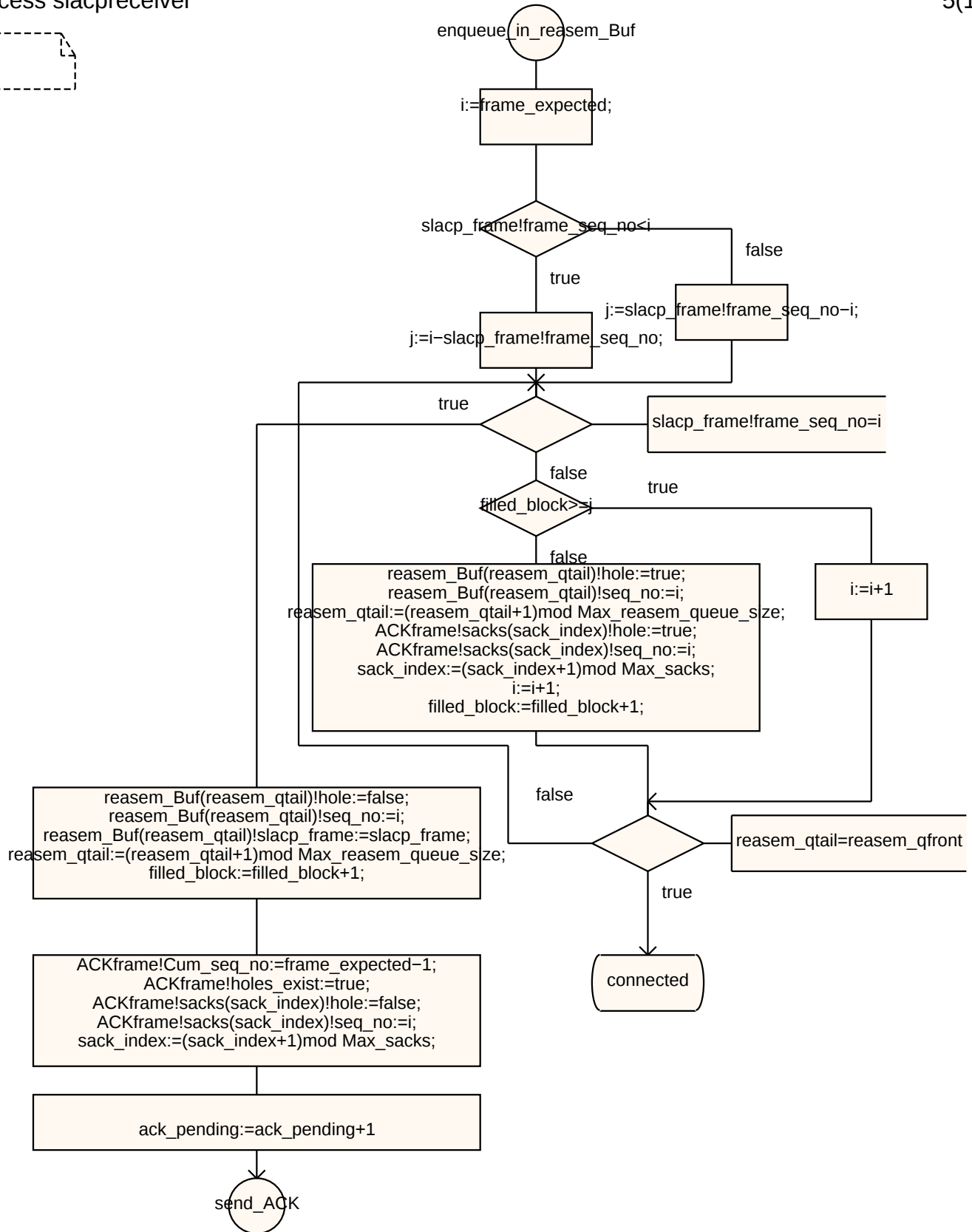
```
dcl Open_Requestframe t_Open_Request_paramframe;
dcl Open_Confirmframe t_Open_Confirm_paramframe;
```

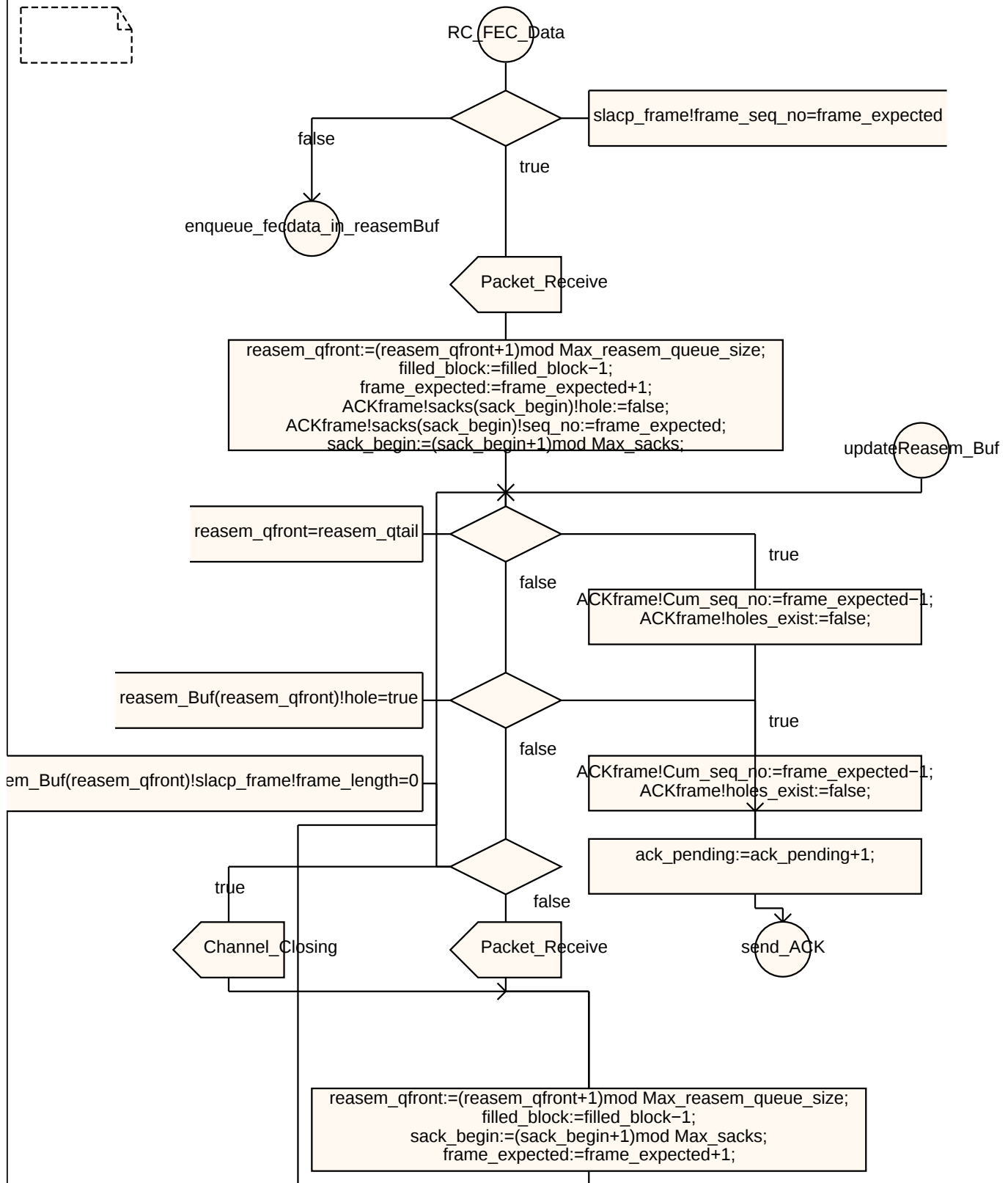
```
Timer FIN_Timer;
dcl FIN_Timeout duration:=7;
dcl close_on boolean:=false;
```



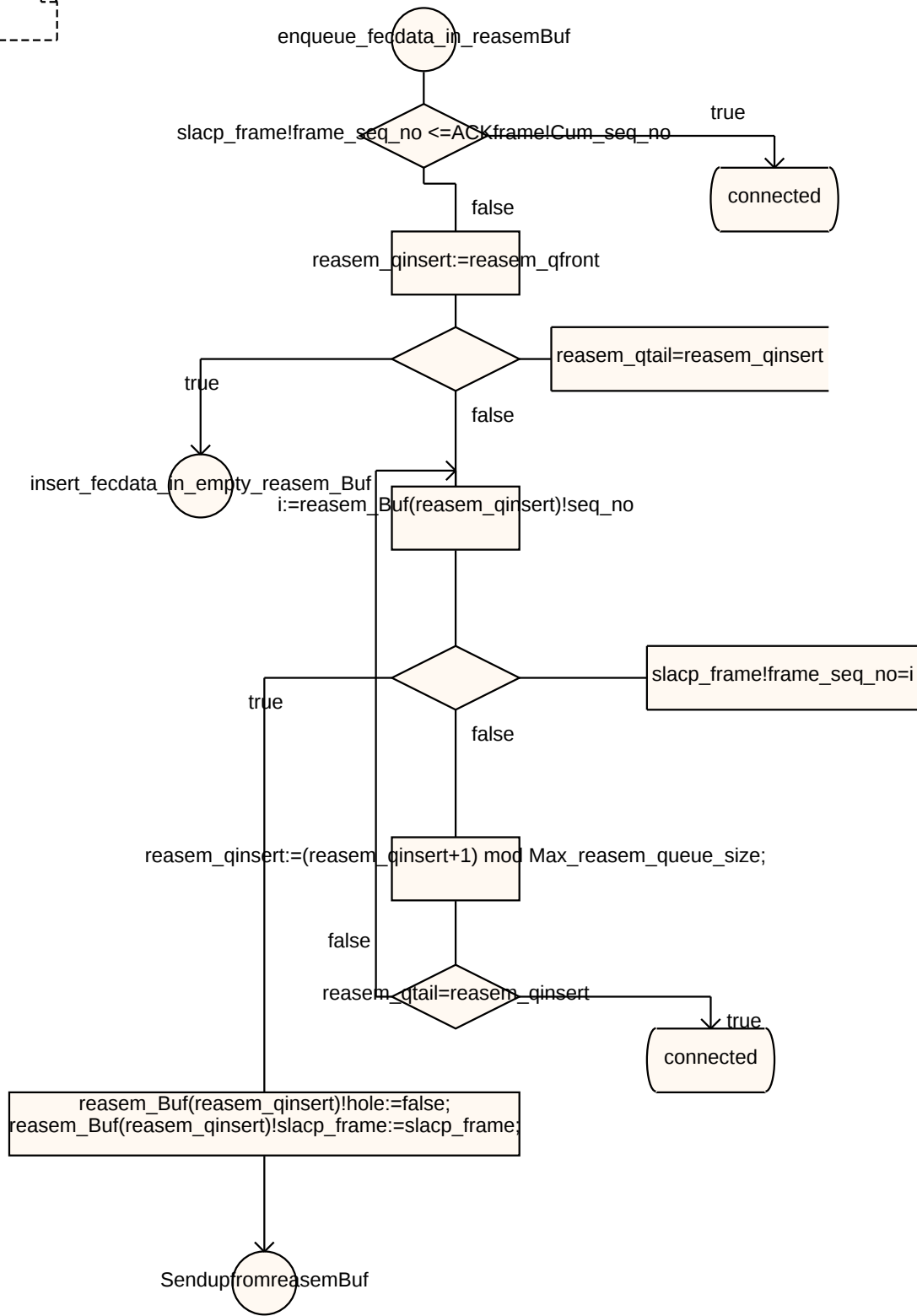


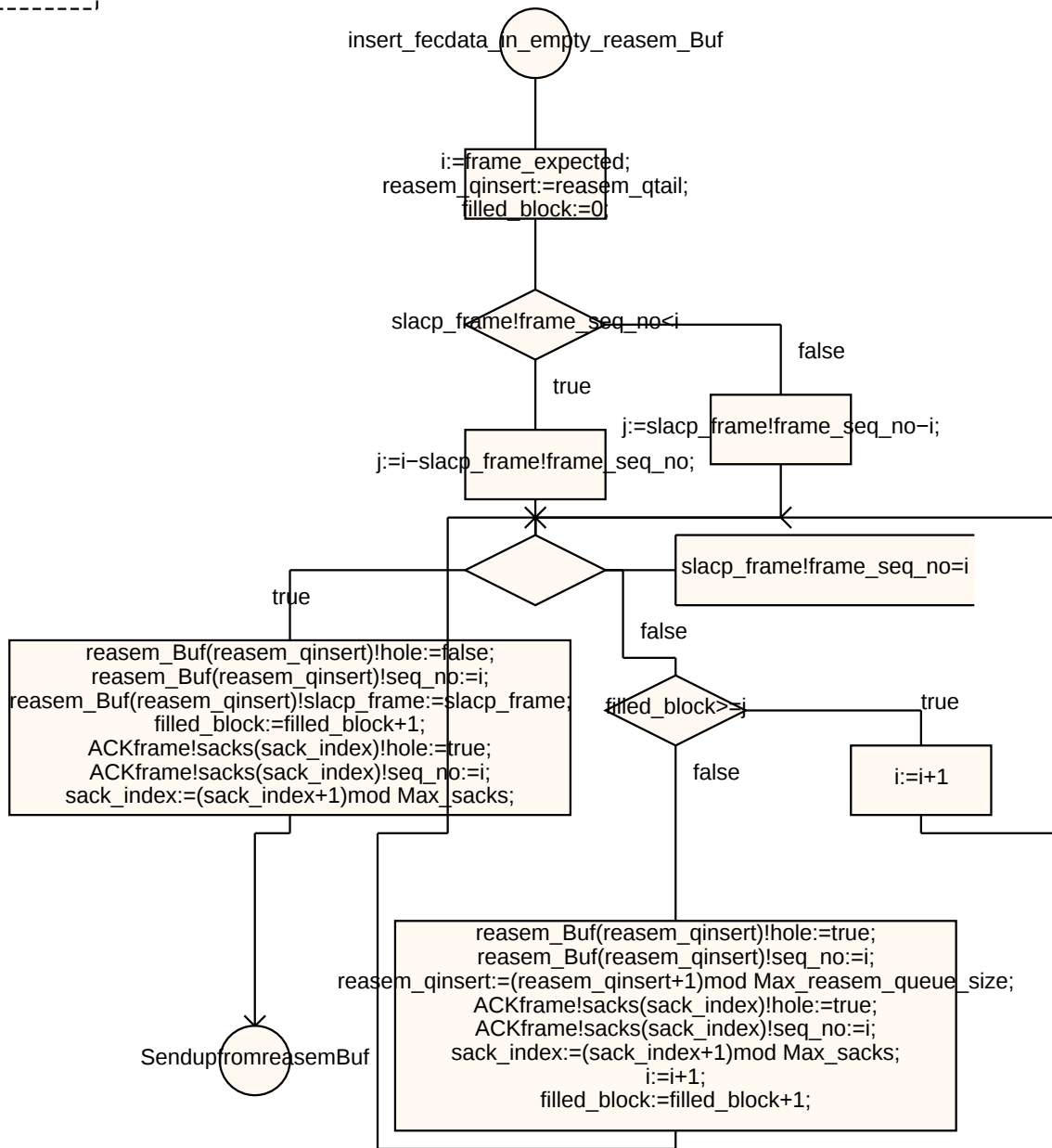


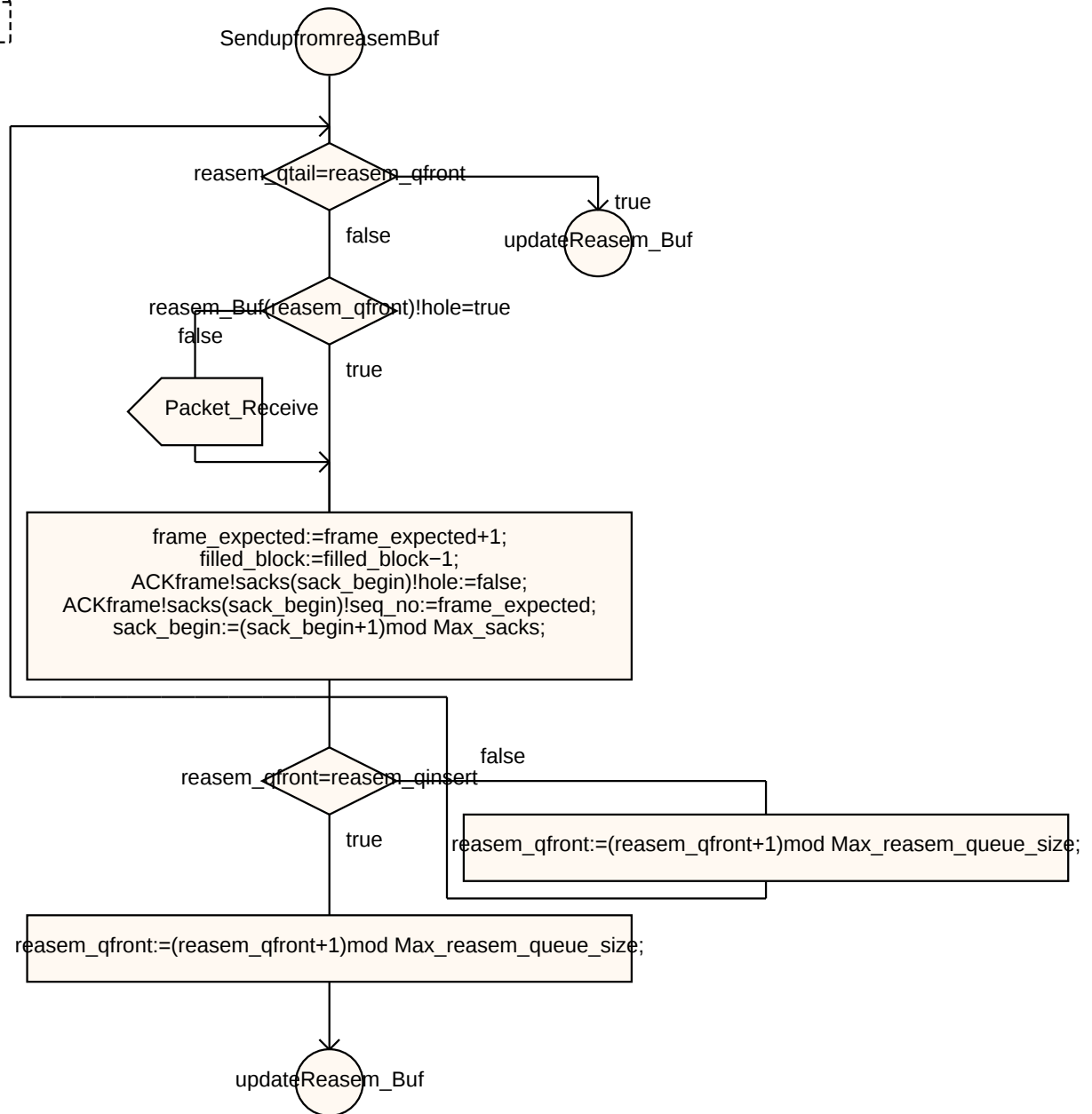


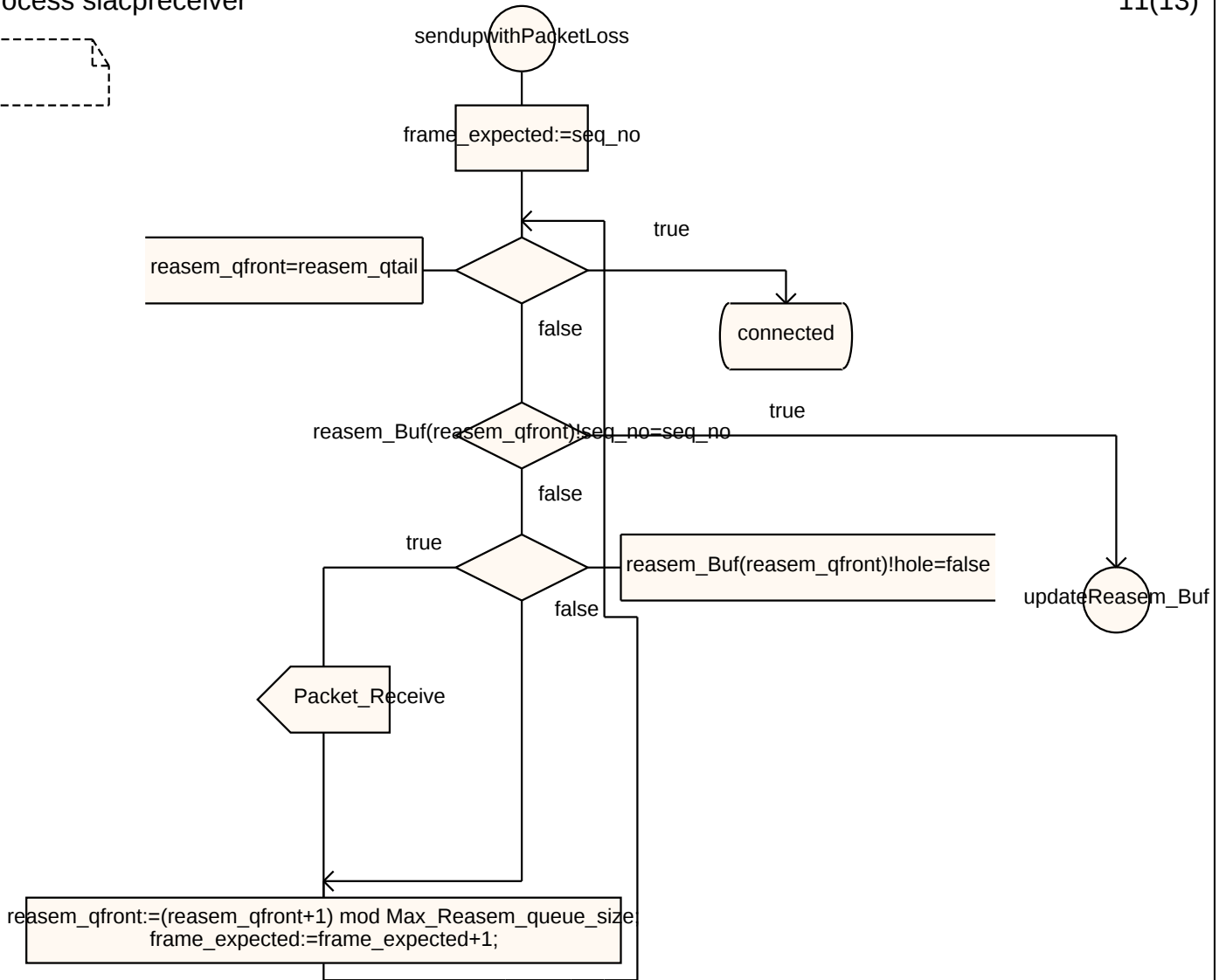


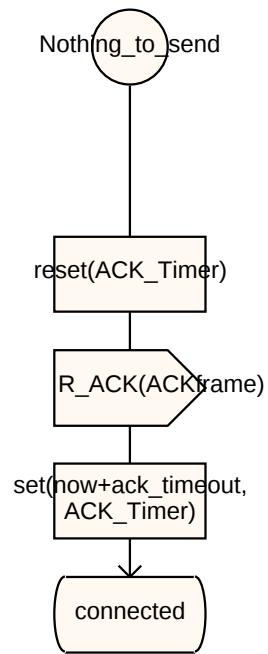


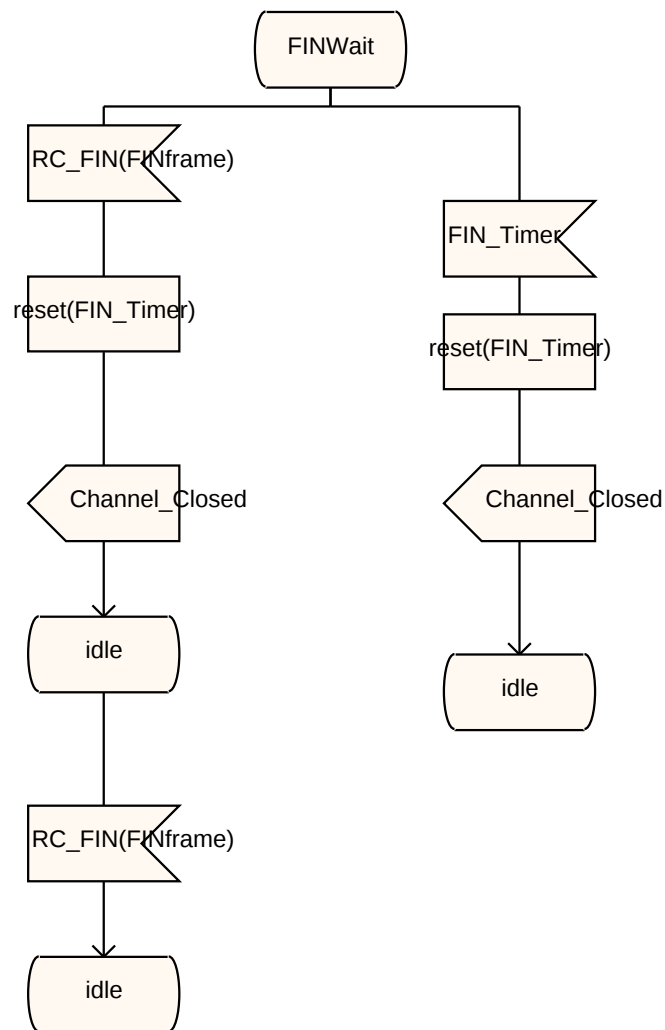














```

dcl k integer:=0;
dcl i integer:=0;
Timer FEC_Timer;
Timer FECACK_Timer;
dcl fecack_timeout duration:= 15;
dcl fec_timeout duration:=15;
synonym Code_Dimension integer=2;
dcl FEC_block_expected integer:=0;
dcl FEC_frame_expected integer:=0;
dcl fsack_index integer:=0;
synonym Max_fsacks integer =5;
synonym Max_redundantframes integer=1;
synonym Max_fec_block_no integer=256;
dcl fecdataframesreceivedperblock integer:=0;
dcl fecredundantframesreceivedperblock integer:=0;
dcl Allfecdataframesreceivedperblock boolean:=false;
dcl Send_pending integer :=0;
dcl MacBuf_free boolean:=true;
dcl fsack_fillindex integer :=0;
dcl holes_exist boolean :=false;

```

```

newtype t_RControlframe choice
a t_ACKframe;
b t_FEC_ACKframe;
c t_FEC_Redundancyframe;
endnewtype;

```

```

/* Queue of Controlframes */

```

```

newtype t_Control_queue array(integer,t_RControlframe)
endnewtype;

```

```

/* Control_queue variables */

```

```

dcl RControl_Buf t_Control_queue;

```

```

dcl RControl_qfront integer:=0;
dcl RControl_qtail integer :=0;
dcl RControlframe t_RControlframe;
Synonym Max_ControlBuf integer=30;

```

```

dcl FEC_Dataframe t_FEC_Dataframe;
dcl FEC_ACKframe t_FEC_ACKframe;
dcl Last_FEC_ACKframe t_FEC_ACKframe;
dcl FEC_Rframe t_FEC_Redundancyframe;
dcl ACKframe t_ACKframe;
dcl FINframe t_FINframe;
dcl FINACKframe t_FINACKframe;

```

```

newtype t_sbentry struct
hole boolean;
seq_no integer;
endnewtype;
newtype t_sb array(integer,t_sbentry);
endnewtype;

```

```

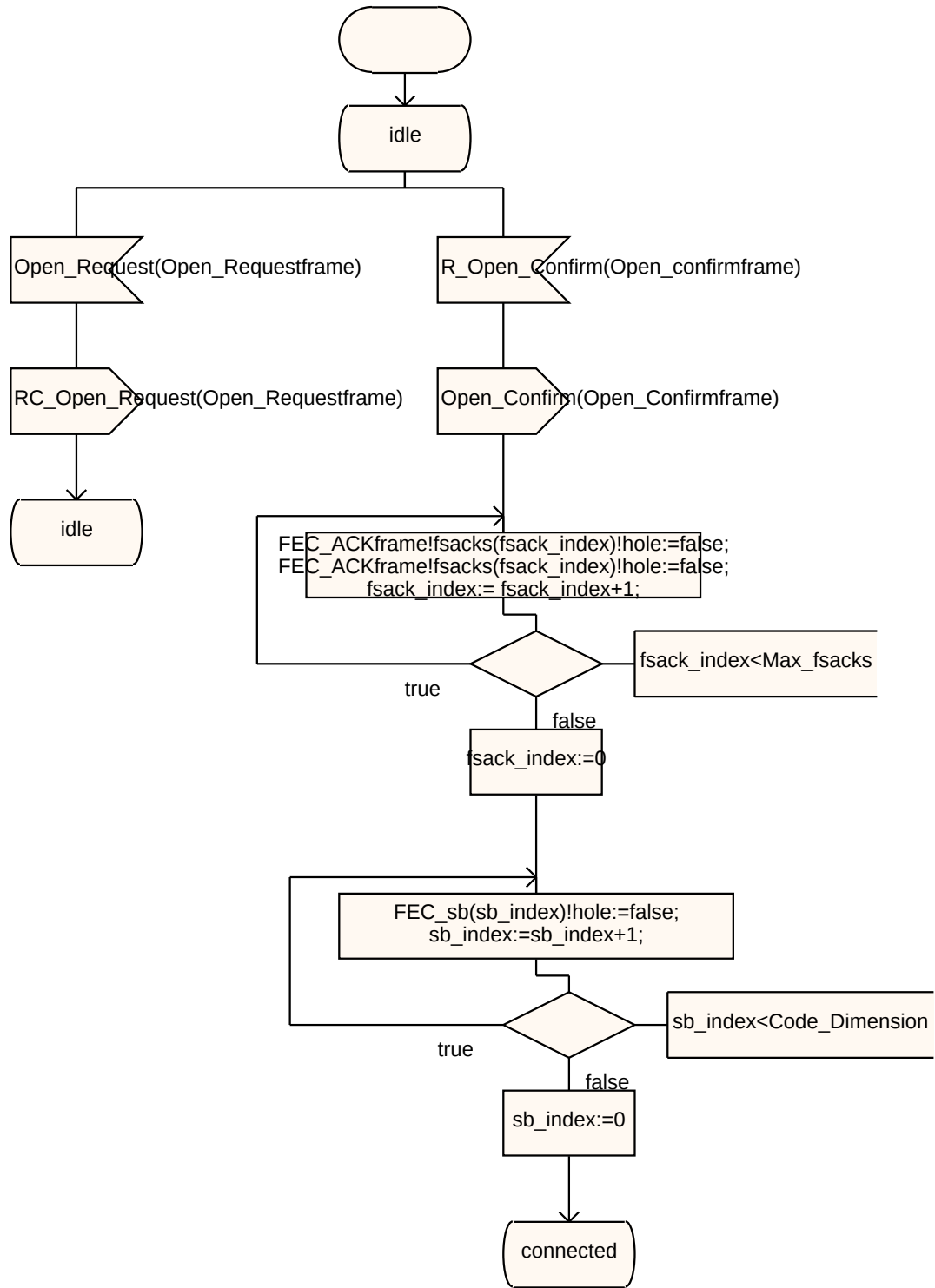
dcl Open_Requestframe t_Open_Request_paramframe;
dcl Open_Confirmframe t_Open_Confirm_paramframe;

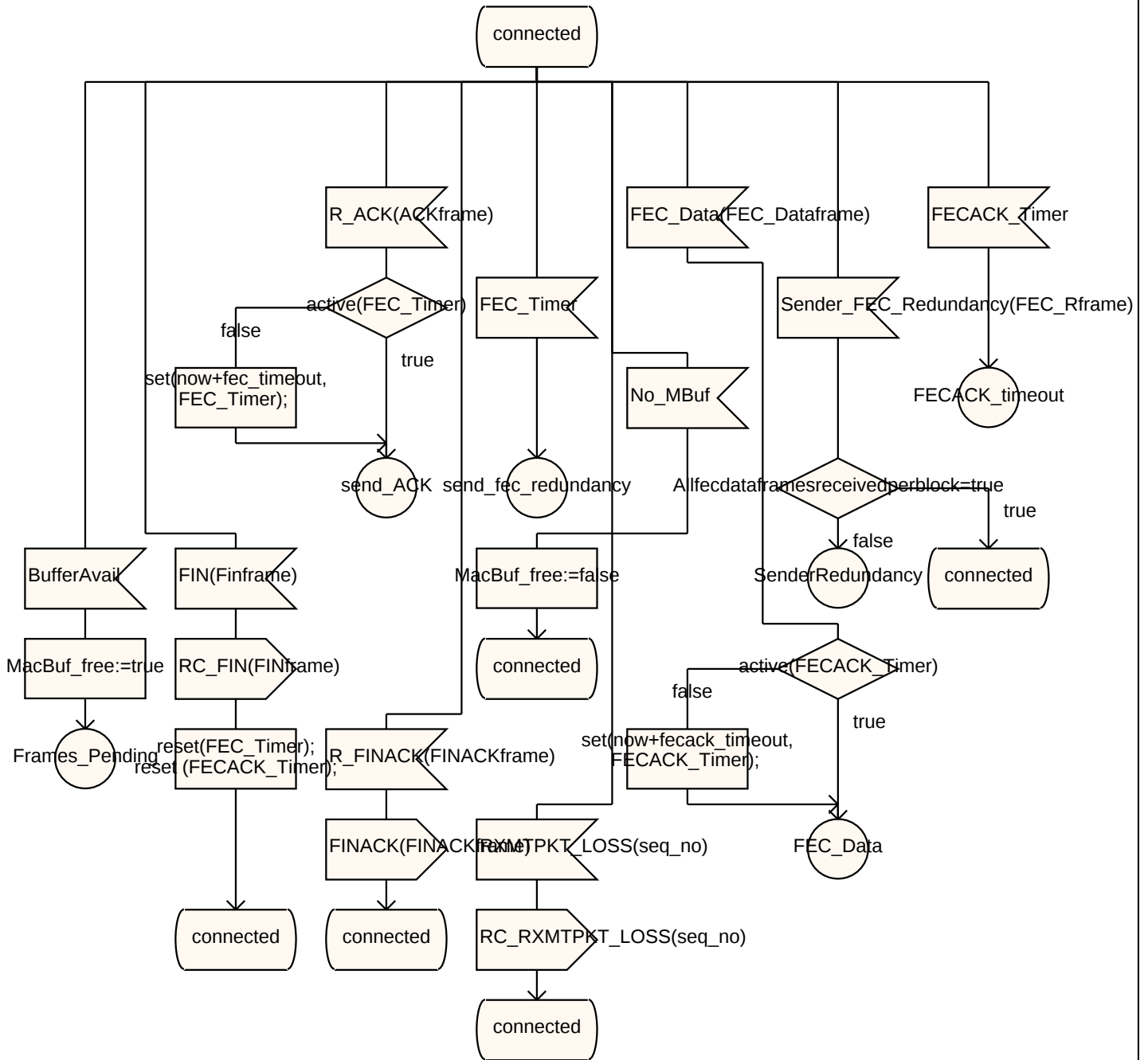
```

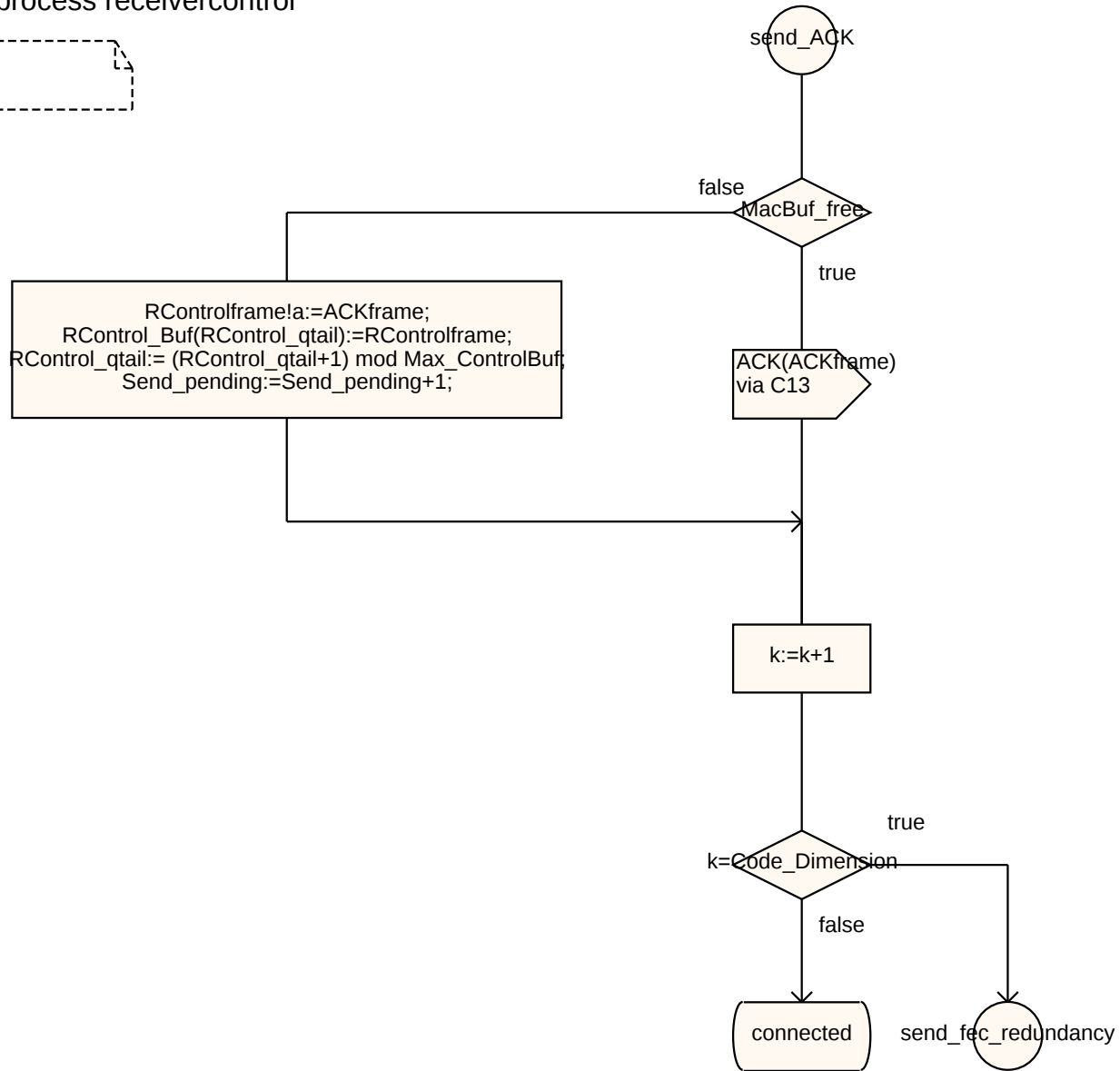
```

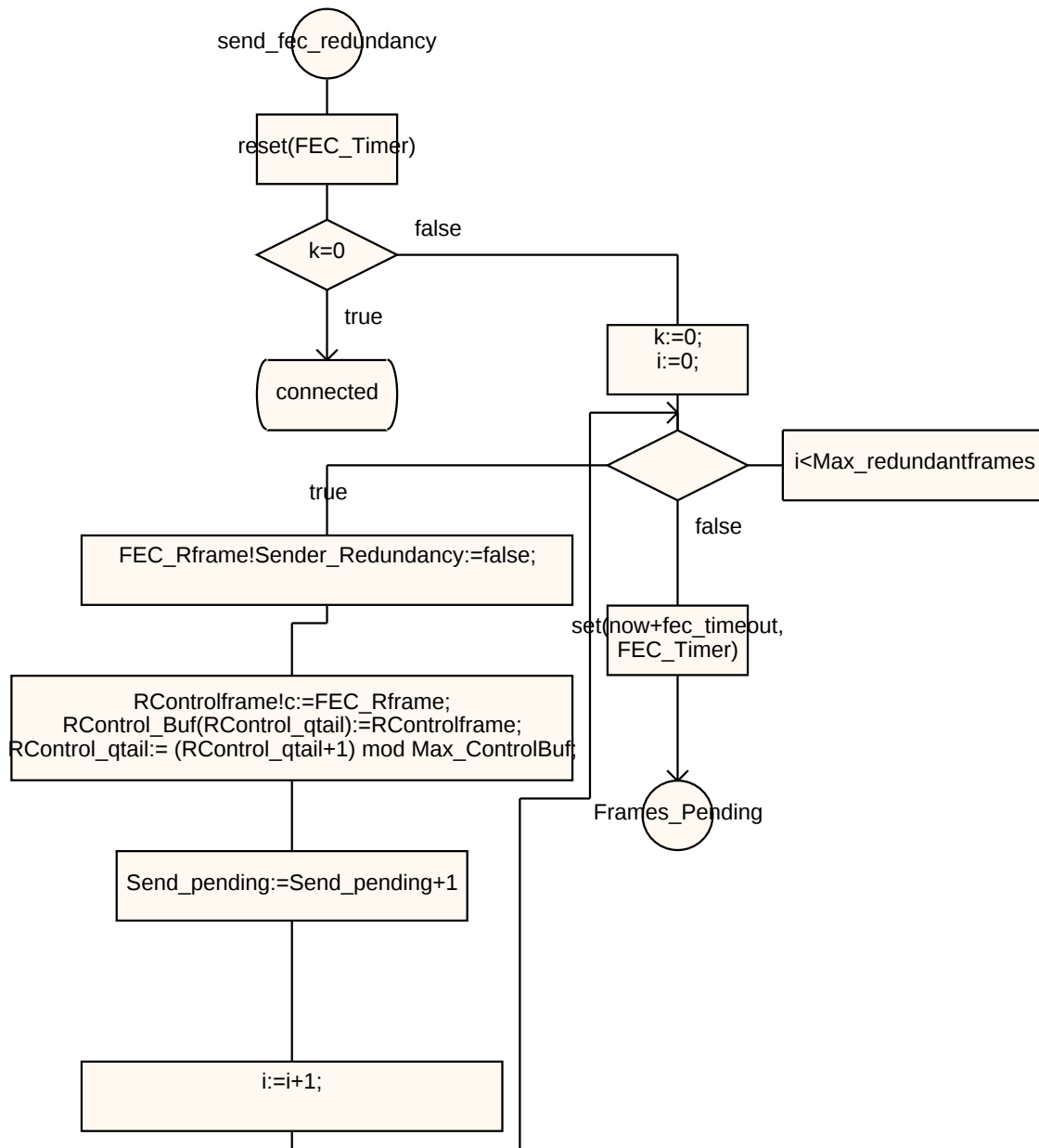
dcl FEC_sb t_sb;
dcl sb_index integer:=0;
dcl Rframe_count integer:=0;
dcl fill_count integer :=0;
dcl ACKcopy_count integer :=0;
dcl seq_no integer :=0;
dcl AllRframesreceived boolean:=false;
dcl newfecdata integer :=0;

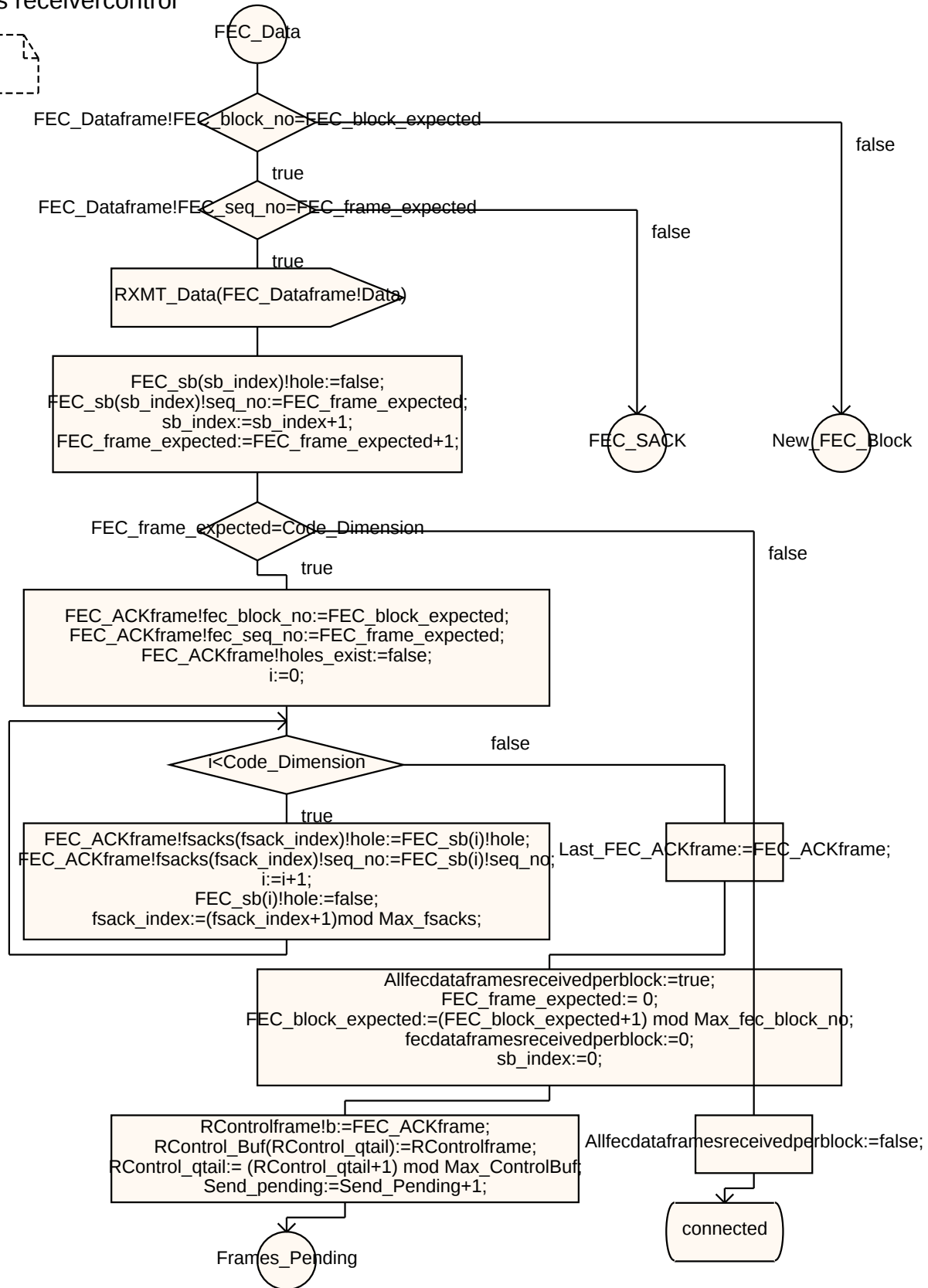
```

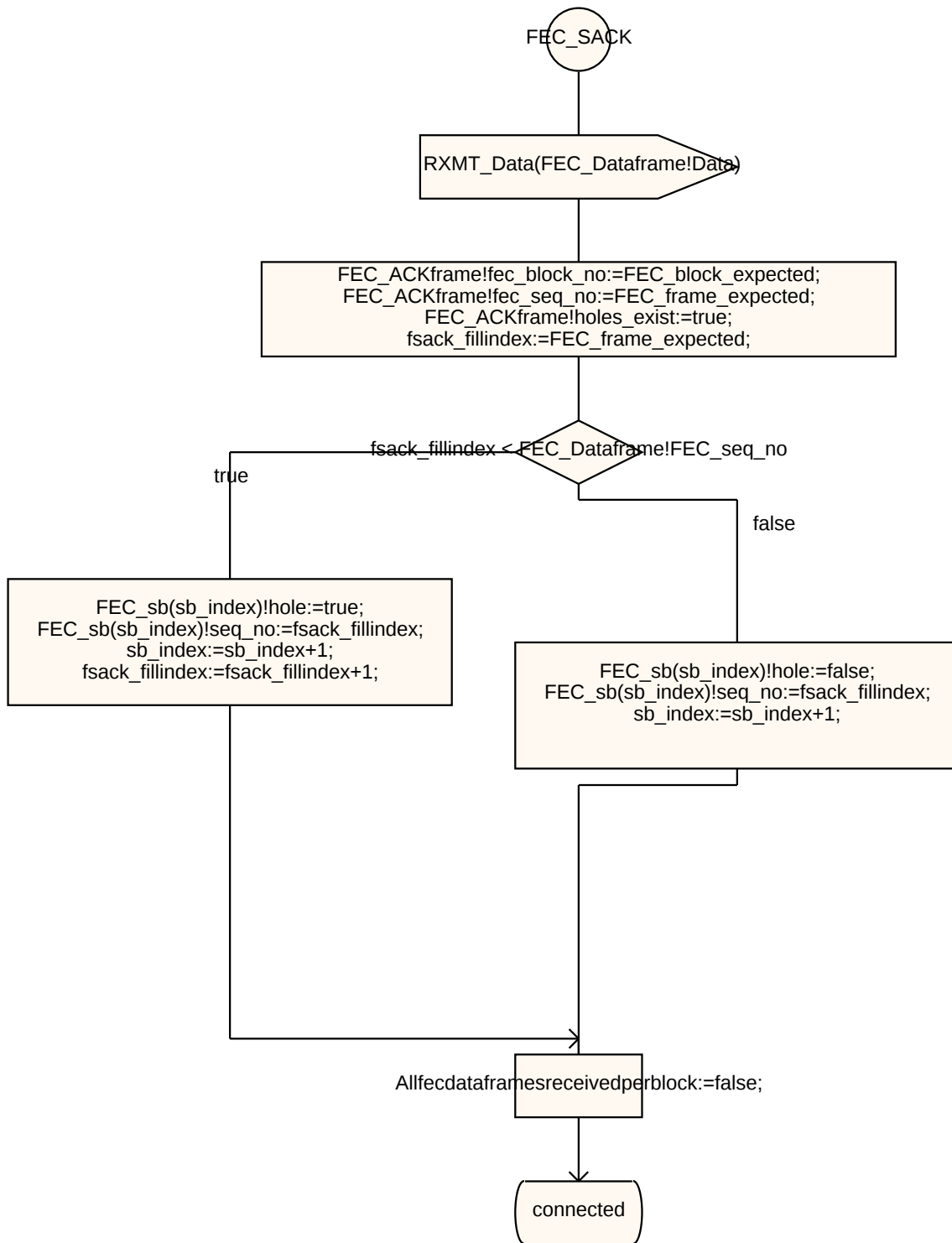


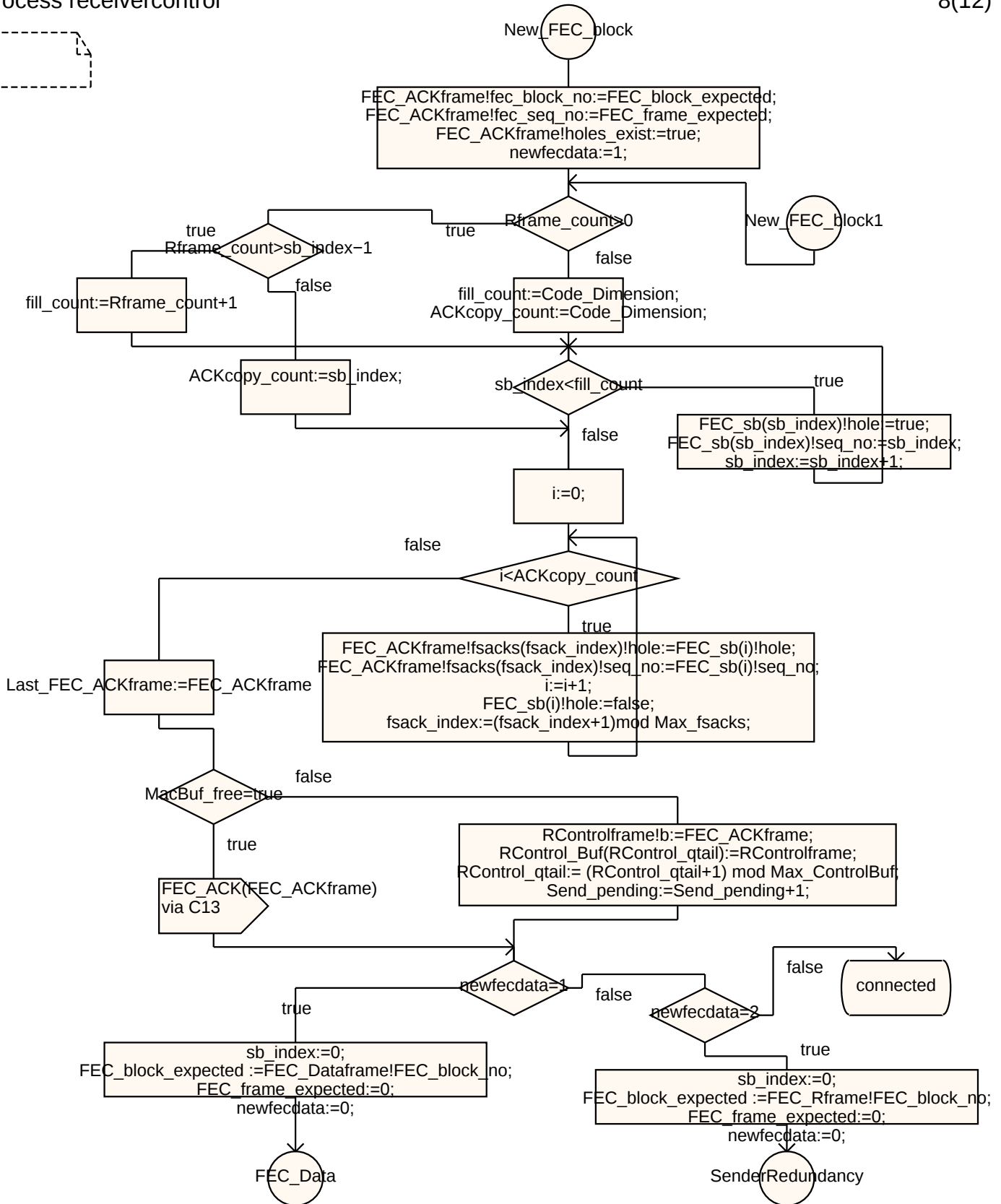


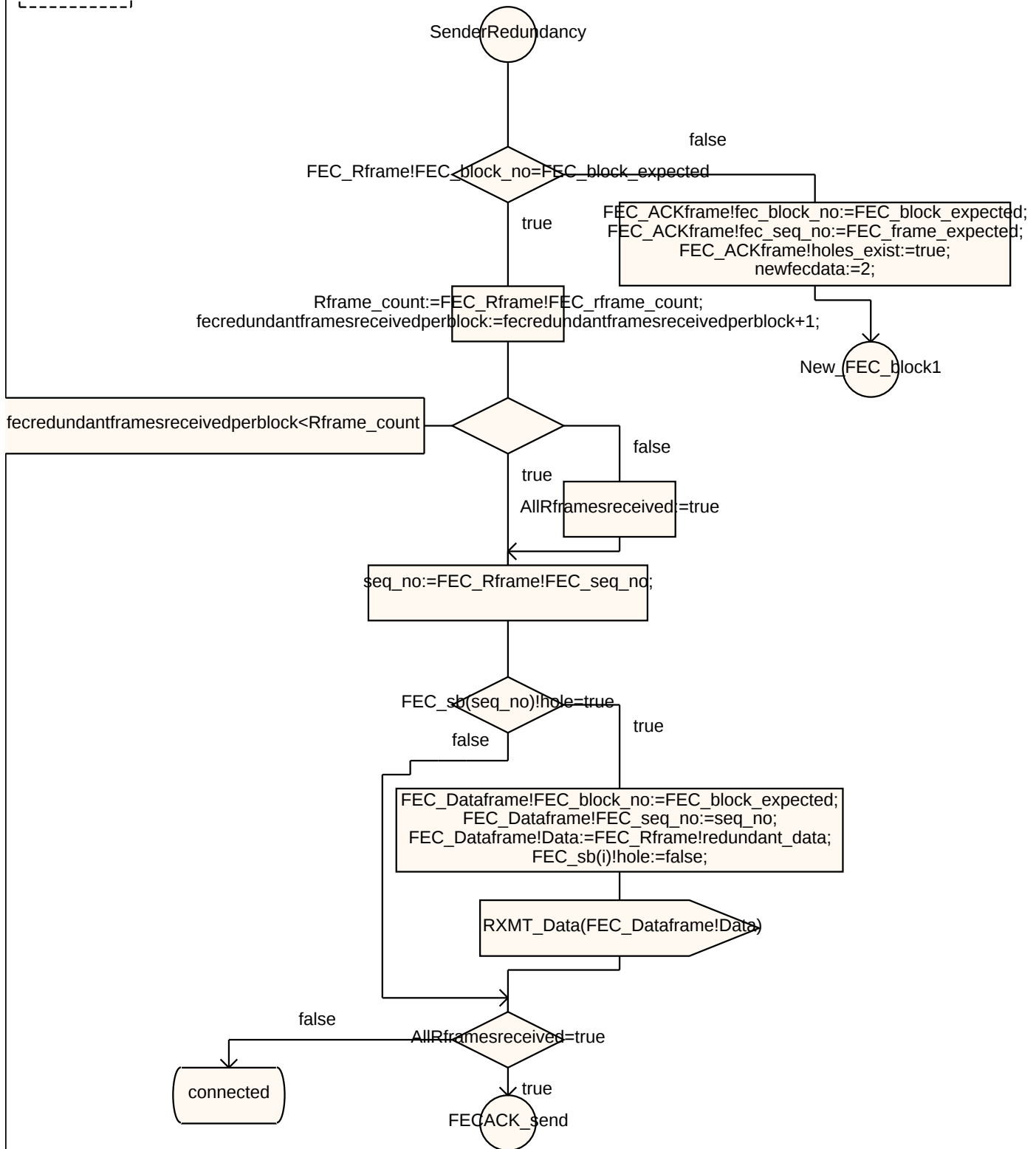


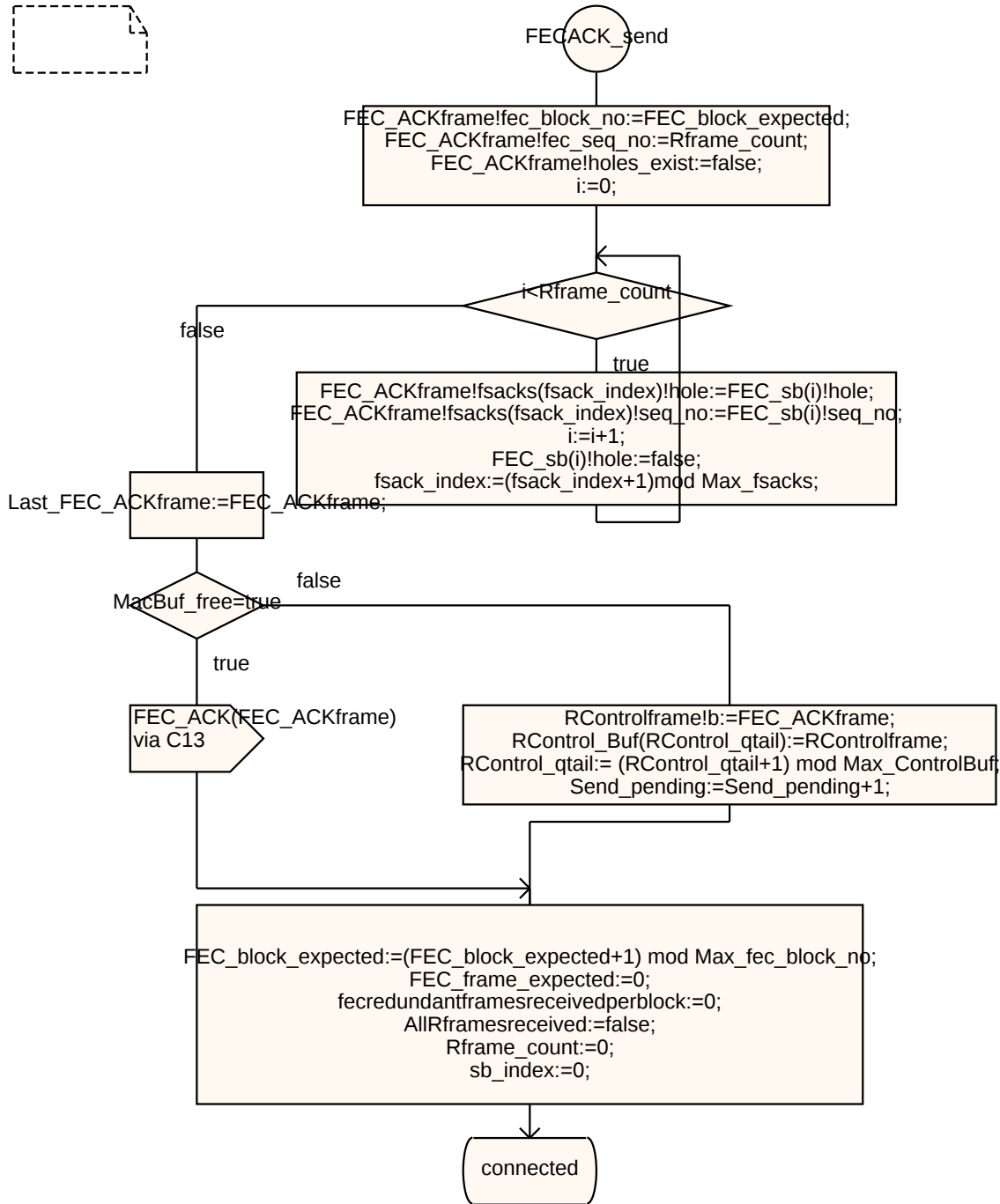


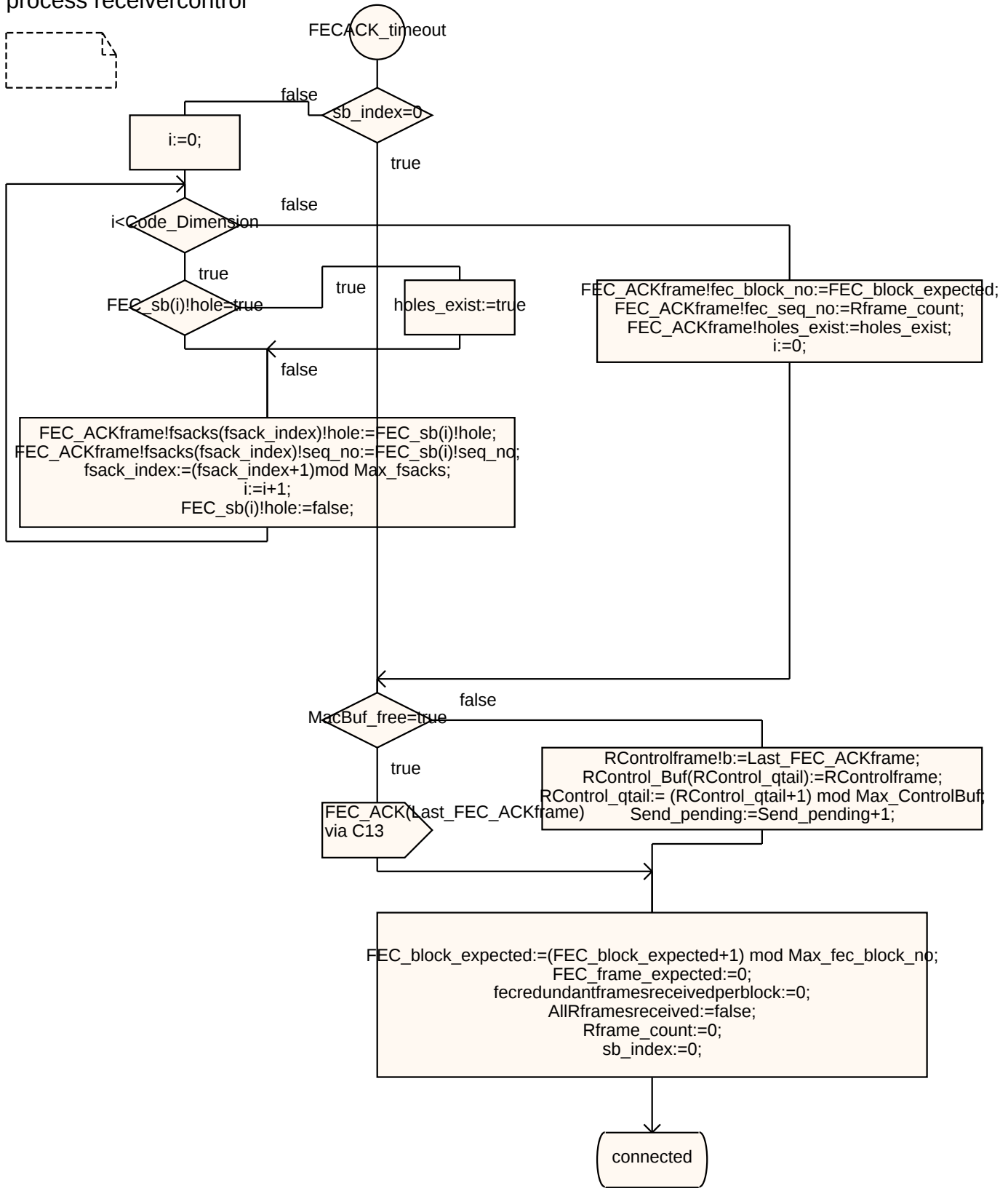


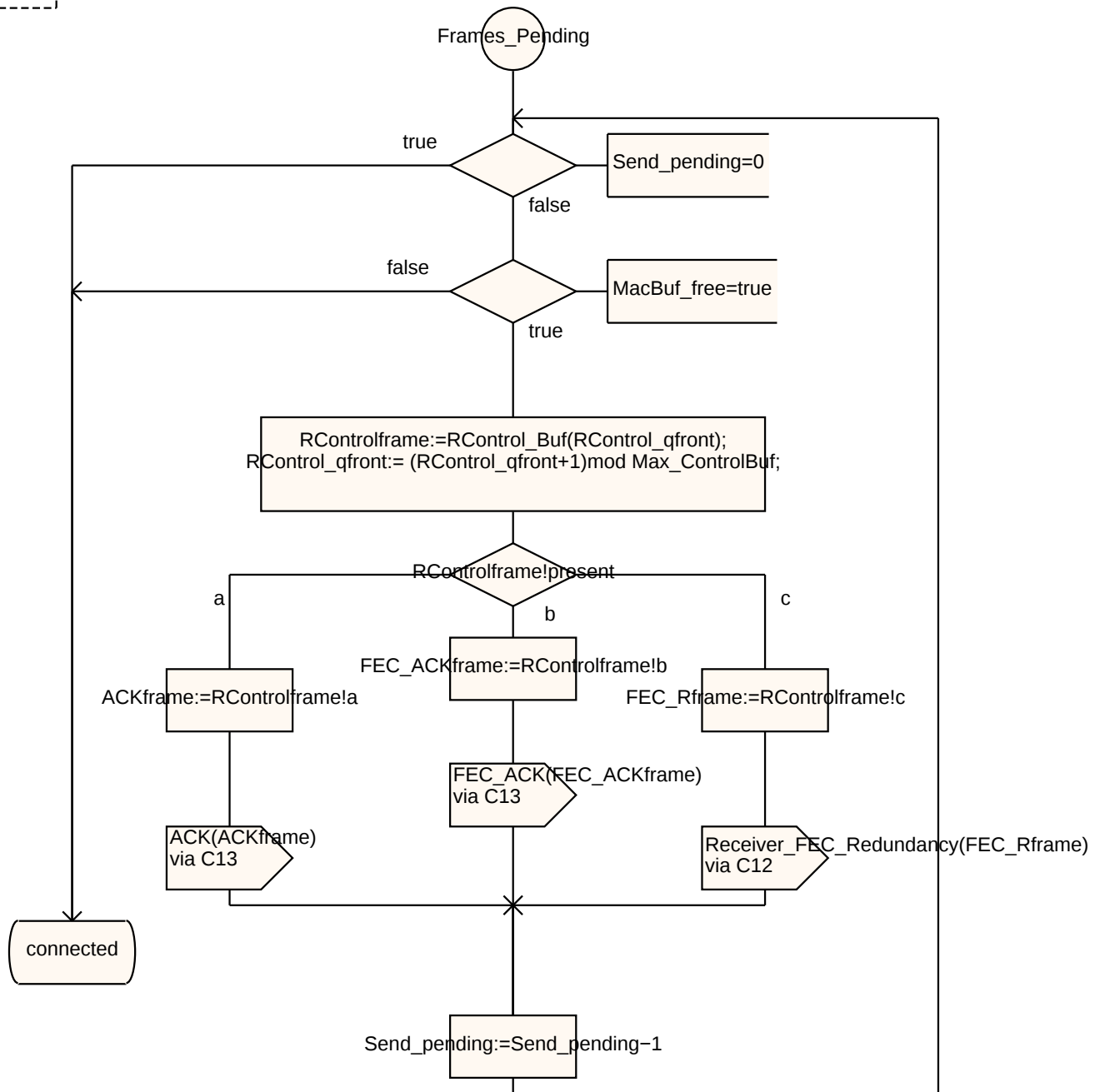






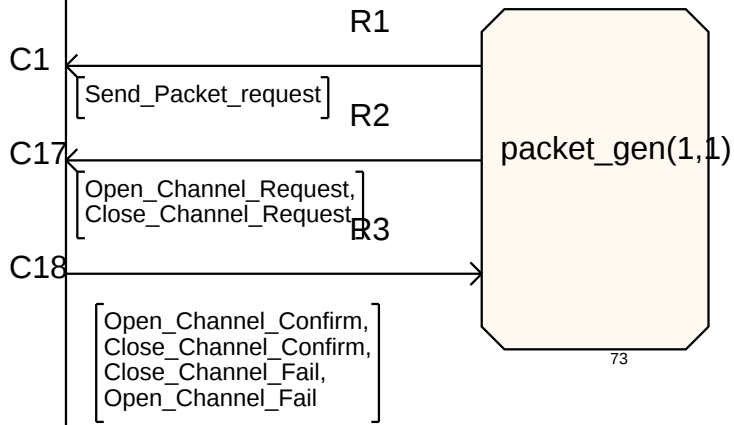






⁵block Packet_Generator

1(1)

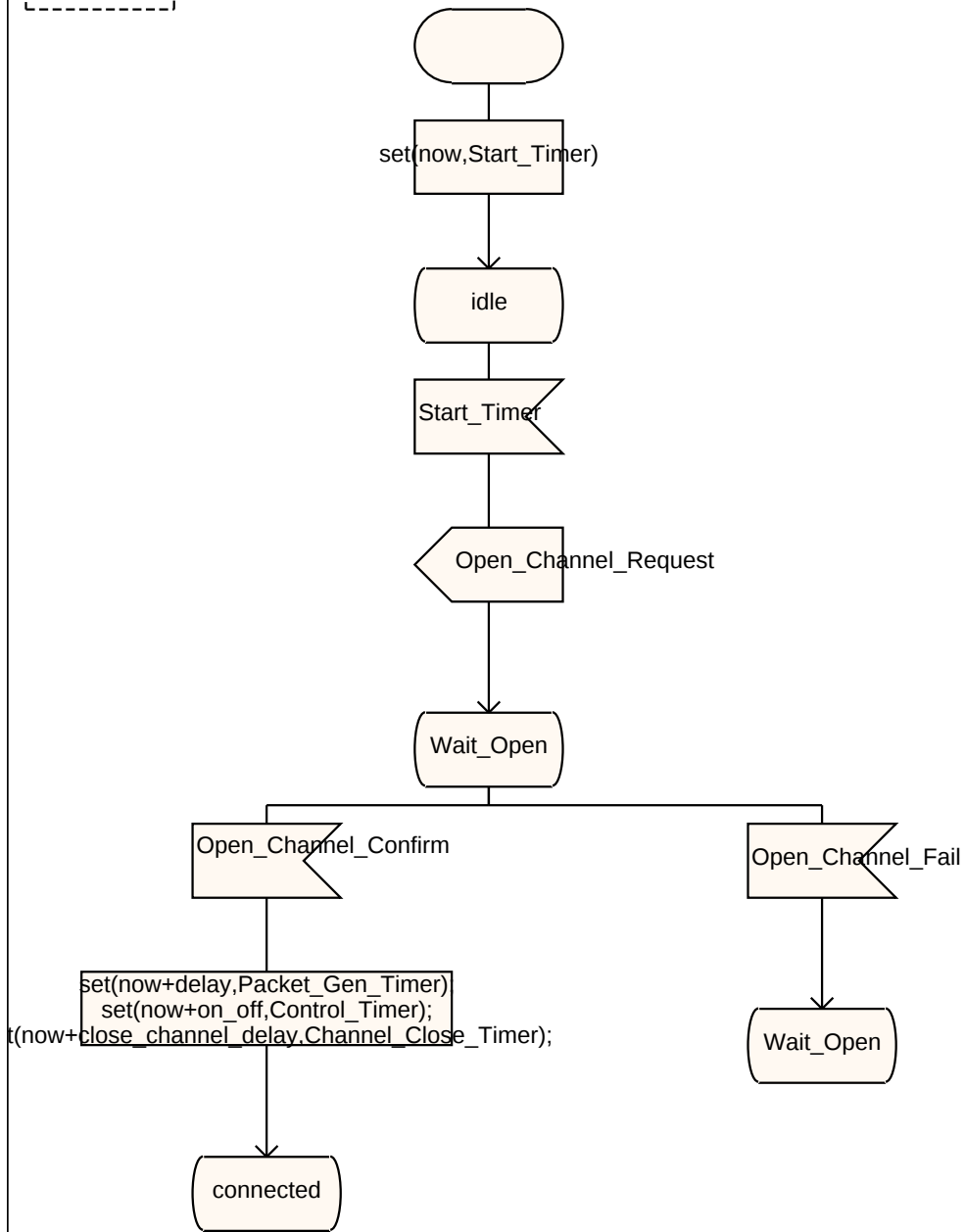


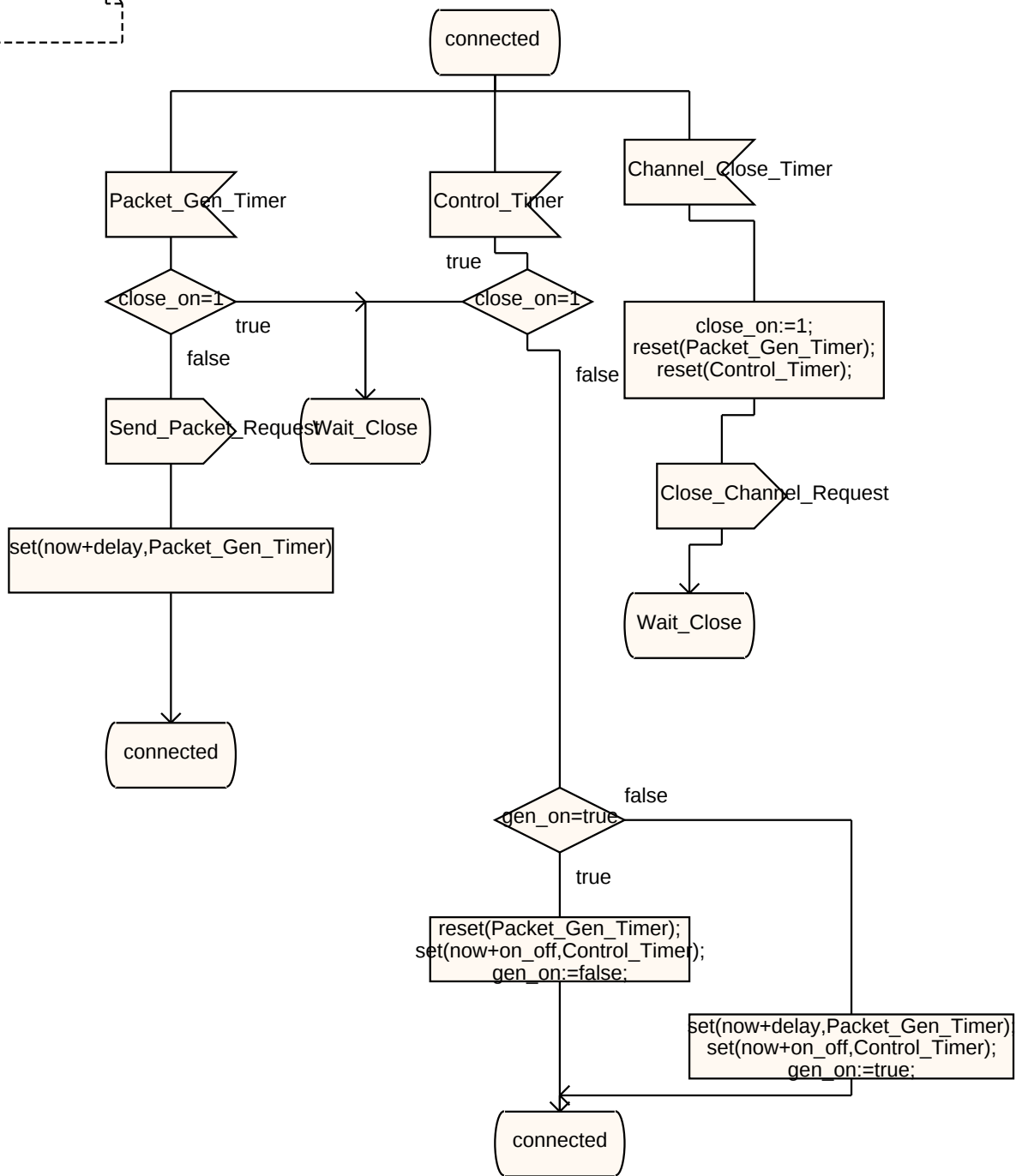
process packet_gen

1(4)

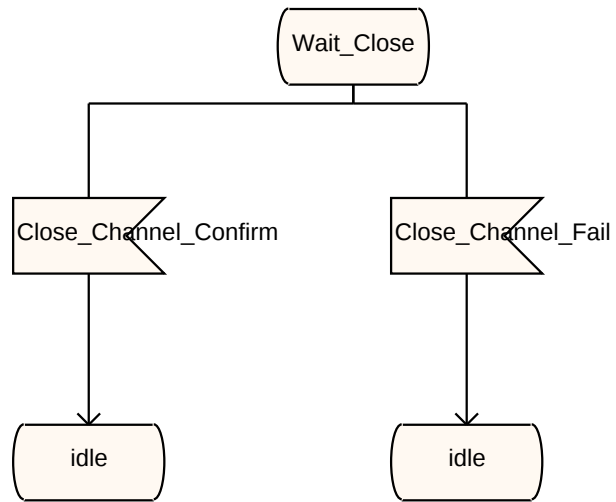


```
Timer Packet_Gen_Timer;  
dcl delay duration:=1;  
Timer Control_Timer;  
dcl on_off duration :=2;  
dcl gen_on boolean :=true;  
Timer Channel_Close_Timer;  
Timer Start_Timer;  
dcl close_channel_delay duration :=50;  
dcl close_on integer :=0;
```





process packet_gen



Chapter TTCN Test Specification...

Chapter TTCN Test Specification

Chapter Other Documents