

Receiver_TopLevel

NON_CAN

[Entry]
ctx.sendByte(ctx.NCGbyte);
ctx.errCnt=0;
transferringD = -1;
[Exit]

FirstByteStat

[Entry]
[Exit]

onEvent(SER)
[c==SOH]
/ctx.getRestBlk();

CondTransientStat

[Entry]
POST("...",CONT);
[Exit]

onEvent(CONT)
[!ctx.syncLoss & (ctx.errCnt < errB) &
ctx.goodBlk]
/ctx.checkForAnotherFile();

CondTransientCheck

[Entry]
POST("...",CONT);
[Exit]

onEvent(CONT)
[ctx.anotherFile]
/ctx.openFileForTransfer();

CondTransientOpen

[Entry]
POST("...",CONT);
[Exit]

onEvent(CONT)
[ctx.closedOk]
/ctx.sendByte(ACK);
ctx.sendByte(ctx.NCGbyte);
ctx.errCnt=0;

CondTransientEOT

[Entry]
POST("...",CONT);
[Exit]

onEvent(CONT)
[!ctx.syncLoss & (ctx.errCnt
< errB) & !ctx.goodBlk]
/ctx.sendByte(NAK);
ctx.errCnt++;

EOT

[Entry]
[Exit]

onEvent(SER)
[c == EOT]
/ctx.sendByte(NAK);

FirstByteData

[Entry]
[Exit]

onEvent(CONT)
[transferringFileD != -1 /***/]
/ctx.sendByte(ACK);
ctx.sendByte(ctx.NCGbyte);

onEvent(SER)
[c==SOH]
/ctx.getRestBlk();
if (ctx.goodBlk1st) {
ctx.errCnt=0;
ctx.anotherFile=0;
}
else ctx.errCnt++;

CondTransientData

[Entry]
POST("...",CONT);
[Exit]

onEvent(CONT)
[!ctx.syncLoss & (ctx.errCnt < errB)]
/if (ctx.goodBlk) {
ctx.sendByte(ACK);
if (ctx.anotherFile) ctx.sendByte(ctx.NCGbyte);
}
else ctx.sendByte(NAK);
if (ctx.goodBlk1st)
ctx.writeChunk();

onEvent(CONT)
[ctx.syncLoss || ctx.errCnt >= errB]
/ctx.cans();
ctx.closeTransferredFile();
if (ctx.syncLoss)
ctx.result="LossOfSynchronization";
else
ctx.result="ExcessiveErrors";

onEvent(CONT)
[!ctx.anotherFile]
/ctx.sendByte(ACK);
ctx.result="Done";

onEvent(CONT)
[transferringD == -1]
/cans();
ctx.result="CreatError";

onEvent(CONT)
[ctx.syncLoss || ctx.errCnt >= errB]
/ctx.cans();
if (ctx.syncLoss)
ctx.result="LossOfSync at Stat Blk";
else
ctx.result="ExcessiveErrors at Stat";

onEvent(SER)
/COUT << "Receiver received totally unexpected char #" << c << ": " << (char) c << endl;
exit(EXIT_FAILURE);

Simplified Receiver Statechart
8 October 2021 Look for /***/
No dropped characters,
no timeouts,
no cancellation via keyboard.
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The entry code:

POST("...",CONT);

in the grey transient states
immediately posts a continue
(CONT) event that immediately
kicks the StateChart out of
those states.

Event SER is the event of a
character being available from
the Medium (simulating a SERIAL
port) /***/

onEvent(CONT)
[!ctx.closedOk]
/ctx.cans(); /***/
ctx.result="CloseError";

CAN

[Entry]
[Exit]

onEvent(SER)
[c==CAN]

onEvent(SER)
[c == CAN]
/if (transferringD != -1)
ctx.closeTransferredFile();
ctx.result="SndCancelled";