Assumptions

1. Can be sanitized only when not connected
2. Accepted data must be reviewed
3. Can review only when not connected
4. Only way to change from level high to level low or low to high is by first accepting data
5. Can change levels only as described in 4. Or by being sanitized or by being connected from a sanitized state
6. The terminal buffer’s contents cannot change when not connected except by sanitization

Transitions

- Connect to host
- Disconnect
- Process in host
- Sanitize
- Move data
- Output data
- Review
- Release decision
- Accept

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Transition First_Page
ENTRY ~Connected
EXIT
Top_Line = 1
& FORALL i: Integer ( Reviewed(i) = IF i>0 & i<=Screen_Size THEN TRUE ELSE Reviewed'(i) FI )
& FORALL s: Screen_Number ( Screen[s] = Display(Terminal_Buffer'[s]) )

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Transition Plus_Page
ENTRY ~Connected
EXIT
Top_Line = if Bottom_Line' + Screen_Size <= File_Size' then Top_Line' + Screen_Size else if File_Size' >= Screen_Size then File_Size' - Screen_Size + 1 else 1 fi
& FORALL i: Integer ( Reviewed(i) = IF i >= Top_Line & i <= Bottom_Line THEN TRUE ELSE Reviewed'(i) FI )
& FORALL s: Screen_Number ( Screen[s] = Display(Terminal_Buffer'[Dummy]))
& Screen[s] = Display(Terminal_Buffer'[Dummy])
### Transition Connect_To_Low

**ENTRY**
- Connected
- & Terminal_Level == High

**EXIT**
- Connected
- & Terminal_Level == Low
- & FORALL i: Integer (i > 0 & i <= Max_Buffer -> ~Reviewed(i))
- & ~Accepted
- & Terminal_Mode == Normal
- & Active_Host == Low
- & Screen == Screen

### Transition Change_Mode

**ENTRY**
- ~Connected

**EXIT**
- ( Terminal_Mode' == Normal
- & Terminal_Mode == Show_Control
- & FORALL s: Screen_Number
  - Dummy == s + Top_Line' - 1
  - Screen[s] == Expanded(Terminal_Buffer'[Dummy])
- | Terminal_Mode' == Show_Control
- & Terminal_Mode == Normal
- & FORALL s: Screen_Number
  - Dummy == s + Top_Line' - 1
  - Screen[s] == Terminal_Buffer'[Dummy])

### IMPLEMENTATION

LLevel == LLevel,
High == High,
Low == Low,
Sanitized == Sanitized,
Connect_Level == Connect_Level,
Buffer == Buffer,
Sanitized_Buffer == Sanitized_Buffer.

Connect_To(Lev) ==
  ( Lev == High & Connect_To_High
  | Lev == Low & Connect_To_Low),
Disconnect == Disconnect,
Receive_Data == Receive_Data,
Send_Data == Send_Data,
Sanitize == Sanitize,
Review_Data ==
  Accept
  | Change_Mode
  | First_Page
  | Last_Page
  | Plus_Page
  | Minus_Page
  | Plus_Lines
  | Minus_Lines,
Change_Level == Change_Level,
Process_Normal == Process_Normal.

### Terminal_Level == Terminal_Level,
Connected == Connected,
Reviewed == FORALL i: Integer (i > 0 & i <= File_Size -> Reviewed(i))
& File_Size ~= 0,
Received == Accepted,
Host_Buffer(Lv) == Host_Buffer(Lv),
Terminal_Buffer == Terminal_Buffer,
Active_Host == Active_Host.