

```

|----- MODULE P2PComm -----|
| EXTENDS Naturals, Sequences |
|-----|
| CONSTANTS Replica |
|-----|
| VARIABLES |
|   incoming, outbuf |
| |
| vars  $\triangleq$   $\langle incoming, outbuf \rangle$  |
|-----|
| Init  $\triangleq$  |
|    $\wedge incoming = [r \in Replica \mapsto \{\}]$  |
|    $\wedge outbuf = [r \in Replica \mapsto \{\}]$  |
| |
| receive transitions |
| Receive(r)  $\triangleq$  |
|    $\wedge incoming[r] \neq \{\}$  |
|    $\wedge incoming' = [incoming \text{ EXCEPT } ![r] = \{\}]$  |
|    $\wedge \text{UNCHANGED } \langle outbuf \rangle$  |
| |
| send transitions |
| Send(r)  $\triangleq$  |
|    $\wedge outbuf[r] \neq \{\}$  |
|    $\wedge incoming' = [x \in Replica \mapsto$  |
|       IF  $x = r$  |
|       THEN  $incoming[x]$  |
|       ELSE  $incoming[x] \cup outbuf[r]$  |
|    $\wedge outbuf' = [outbuf \text{ EXCEPT } ![r] = \{\}]$  |
|-----|
| channel is empty iff incoming and outbuf are both empty for every replica. |
| EmptyChannel  $\triangleq$  Init |
|-----|

\ * Modification History
\ * Last modified Tue Dec 18 00:33:30 CST 2018 by xhdn
\ * Last modified Sat Dec 15 21:09:02 CST 2018 by xhdn
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