
MODULE *ReliableCausalNetwork*

EXTENDS *CausalNetwork*, *Message*

$RCvars \triangleq \langle incoming, lmsg, dmsg, vc \rangle$

$RCInit \triangleq \wedge CInit$
 $\wedge MInit$

$RCBroadcast(r, m) \triangleq \wedge CBroadcast(r, m)$
 $\wedge MBroadcast$

$RCDeliver(r) \triangleq$
 $\wedge incoming[r] \neq EmptyBag$
 $\wedge \exists m \in BagToSet(incoming[r]) :$
 $\wedge \neg IfDeliverMsg(m, r)$
 $\wedge \forall s \in Replica :$
 $\quad \vee m.vc[s] \leq vc[r][s]$
 $\quad \vee s = m.r$
 $\wedge m.vc[m.r] = vc[r][m.r] + 1$
 $\wedge vc' = [vc \text{ EXCEPT } ![r][m.r] = @ + 1]$
 $\wedge lmsg' = m$
 $\wedge MDeliver(r, m)$
 $\wedge \text{UNCHANGED } \langle incoming \rangle$

$RCD_o \triangleq \text{UNCHANGED } RCvars$

\ * Modification History
\ * Last modified Sat Jun 08 00:47:56 CST 2019 by *xhdn*
\ * Last modified Mon May 06 16:07:42 CST 2019 by *jywellin*
\ * Created Tue Apr 02 15:26:19 CST 2019 by *jywellin*