

MODULE <i>ReliableCausalNetwork</i>
EXTENDS <i>Network, Naturals</i>
VARIABLES $vc$
$Vector \triangleq [Replica \rightarrow Nat]$ $InitVector \triangleq [r \in Replica \mapsto 0]$
$RCInit \triangleq \wedge NInit$ $\wedge vc = [r \in Replica \mapsto InitVector]$
$RCBroadcast(r, m) \triangleq \wedge NBroadcast(r, m)$ $\wedge vc' = [vc \text{ EXCEPT } ![r][r] = @ + 1]$
$RCDeliver(r) \triangleq$ $\wedge incoming[r] \neq EmptyBag$ $\wedge \exists m \in BagToSet(incoming[r]) :$ $\wedge \neg IfDeliverMsg(m, r)$ $\wedge \forall s \in Replica :$ $\quad \vee m.vc[s] \leq vc[r][s]$ $\quad \vee s = m.r$ $\wedge m.vc[m.r] = vc[r][m.r] + 1$ $\wedge vc' = [vc \text{ EXCEPT } ![r][m.r] = @ + 1]$ $\wedge msg' = m$ $\wedge MDeliver(r, m)$ $\wedge \text{UNCHANGED } \langle incoming \rangle$
\ * Modification History \ * Last modified <i>Mon Jun 03 15:49:22 CST 2019</i> by <i>xhdn</i> \ * Last modified <i>Mon May 06 16:07:42 CST 2019</i> by <i>jjwellin</i> \ * Created <i>Tue Apr 02 15:26:19 CST 2019</i> by <i>jjwellin</i>