
MODULE *ReActor_Process*

EXTENDS *Naturals, Sequences*
 CONSTANTS *Message*
 VARIABLES *pid, status, ctl, mailbox*

$TypeInvariant \triangleq \wedge pid \in [node \mapsto Nat, scheduler \mapsto Nat, proc \mapsto Nat]$
 $\wedge status \in \{ "alive", "dead" \}$
 $\wedge mailbox \in Seq(Message)$

$Init \triangleq \wedge pid \in \langle Nat, Nat, Nat \rangle$
 $\wedge status = "alive"$

$Deliver(m) \triangleq \wedge status = "alive"$
 $\wedge mailbox' = Append(mailbox, m)$

$Recv \triangleq \wedge status = "alive"$
 $\wedge mailbox' = Tail(mailbox)$

$Exit \triangleq \wedge status = "alive"$
 $\wedge status' = "dead"$

$Next \triangleq \wedge \exists m \in Message : Deliver(m)$
 $\wedge Recv$
 $\wedge Exit$

$Spec \triangleq Init \wedge \Box [Next]_{\langle status, mailbox \rangle}$

THEOREM $Spec \Rightarrow \Box TypeInvariant$

\ * Modification History
 \ * Last modified Sat Aug 25 17:11:53 CEST 2018 by *ostera*
 \ * Created Fri Aug 24 18:49:14 CEST 2018 by *ostera*