Proof of Condition 1

$Init \Rightarrow Inv$

1. $Init \Rightarrow TypeOK$

   PROOF: By Init1.

2. $Init \Rightarrow MutualExclusion$

   PROOF: By the definition of *MutualExclusion* and Init2, which implies $InCS(i)$ is false for both processes i.

3. $Init \;\Rightarrow\; \forall\, i \in \{0, 1\} \;:\; InCS(i) \vee (pc[i] = \text{“e2”}]) \Rightarrow x[i]$

   PROOF: By Init2, which implies $InCS(i)$ is false and $pc[i] \neq$ “e2”, for each i. (Of course, we are using the fact that FALSE $\Rightarrow P$ is true for any formula P.)

4. Q.E.D.

   PROOF: By steps 1–3 and the definition of Inv

CLOSE