

es-atom-lemma1^{11,40}

$\forall es:ES, a:Atom1, i:Id.$

$i \parallel a$

$\Rightarrow (\forall e:E.$

$(loc(e) = i)$

$\Rightarrow \forall e' \leq e. e' \text{ receives } \parallel a \ \& \ ((\uparrow first(e')) \Rightarrow es_state_when(es;e'):es_state(es;i)\parallel a)$

$\Rightarrow (e \text{ sends } \parallel a \ \& \ es_state_when(es;e):es_state(es;loc(e))\parallel a)$