

ecl-es-act^{11,40}

ecl-es-act($es; m; x$)

\equiv_{def} ecl_ind(x ;
 $k, \text{test}.$ ($\lambda e_1, e_2.$ False);
 $a, b, aa, ab.$ ($\lambda e_1, e_2.$ ($aa(e_1, e_2)$)
 $\vee \exists e \in (e_1, e_2].$ (ecl-es-halt($es; a$)($0, e_1, \text{es-pred}(es; e)$)) \wedge ($ab(e, e_2)$)));
 $a, b, aa, ab.$ ($\lambda e_1, e_2.$ ($aa(e_1, e_2)$)
 \wedge l-all(ecl-ex(b); $n.$ $\forall e \in [e_1, e_2]. \neg$ (ecl-es-halt($es; b$)(n, e_1, e)))
 \vee ($ab(e_1, e_2)$)
 \wedge l-all(ecl-ex(a); $n.$ $\forall e \in [e_1, e_2]. \neg$ (ecl-es-halt($es; a$)(n, e_1, e)))));
 $a, b, aa, ab.$ ($\lambda e_1, e_2.$ ($aa(e_1, e_2)$)
 \wedge l-all(cons(0; ecl-ex(b)); $n.$ $\forall e \in [e_1, e_2]. \neg$ (ecl-es-halt($es; b$)(n, e_1, e)))
 \vee ($ab(e_1, e_2)$)
 \wedge l-all(cons(0; ecl-ex(a)); $n.$ $\forall e \in [e_1, e_2]. \neg$ (ecl-es-halt($es; a$)(n, e_1, e)))));
 $a, aa.$ ($\lambda e_1, e_2.$ [$e_1; e_2$] \sim ($[x, y].$ ecl-es-halt($es; a$)($0, x, y$))* $[x, y].$ $aa(x, y)$);
 $a, n, aa.$ if ($m =_0 n$) then ecl-es-halt($es; a$)(0) else aa fi ;
 $a, n, aa. aa$;
 $a, l, aa. aa$)

clarification:

ecl-es-act($es; m; x$)

\equiv_{def} ecl_ind(x ;
 $k, \text{test}.$ ($\lambda e_1, e_2.$ False);
 $a, b, aa, ab.$ ($\lambda e_1, e_2.$ ($aa(e_1, e_2)$)
 \vee existse-between3($es; e_1; e_2; e.$ (ecl-es-halt($es; a$)($0, e_1, \text{es-pred}(es; e)$))
 \wedge ($ab(e, e_2)$)));
 $a, b, aa, ab.$ ($\lambda e_1, e_2.$ ($aa(e_1, e_2)$)
 \wedge l-all(ecl-ex(b); $n.$ alle from es in $[e_1; e_2]. \neg$ (ecl-es-halt($es; b$)(n, e_1, e)))
 \vee ($ab(e_1, e_2)$)
 \wedge l-all(ecl-ex(a); $n.$ alle from es in $[e_1; e_2]. \neg$ (ecl-es-halt($es; a$)(n, e_1, e))
 $))$);
 $a, b, aa, ab.$ ($\lambda e_1, e_2.$ ($aa(e_1, e_2)$)
 \wedge l-all(cons(0; ecl-ex(b));
 $n.$ alle from es in $[e_1; e_2]. \neg$ (ecl-es-halt($es; b$)(n, e_1, e))))
 \vee ($ab(e_1, e_2)$)
 \wedge l-all(cons(0; ecl-ex(a));
 $n.$ alle from es in $[e_1; e_2]. \neg$ (ecl-es-halt($es; a$)(n, e_1, e)))));
 $a, aa.$ ($\lambda e_1, e_2.$ es-pstar-q($es; x, y.$ ecl-es-halt($es; a$)($0, x, y$); $x, y.$ aa
 $(x$
 $, y); e_1; e_2)$);
 $a, n, aa.$ if ($m =_0 n$) then ecl-es-halt($es; a$)(0) else aa fi ;
 $a, n, aa. aa$;

a,l,aa.aa)