event_system{i:l}
$\equiv_{\text{def}}$ E:Type
  $\times$ (eq:EqDecider(E)
  $\times$ $pred?$:($E \to (?E)$)
  $\times$ $info$:($E \to ((\text{:Id} \times \text{Id}) + (\text{:(:IdLnk} \times E) \times \text{Id})))$
  $\times$ $oaxioms$:EOrderAxioms(E;$pred?$;$info$)
  $\times$ T:(Id$\to$Id$\to$Type)
  $\times$ V:(Id$\to$Id$\to$Type)
  $\times$ M:(IdLnk$\to$Id$\to$Type)
  $\times$ $init$:(i:Id$\to$EState$((T(i))))$
  $\times$ $Trans$:(i:Id$\to k$:Knd$\to$kindcase(k; $a.(V(i,a))$; $l,t.(M(l,t)))\to$EState$((T(i)))\to$EState
        $((T(i))))$
  $\times$ val:(e:$E\to$kindcase(kind(e); $a.(V(\text{loc}(e),a))$; $l,t.(M(l,t))))$
  $\times$ $Send$:(i:Id$\to k$:Knd$\to$kindcase(k; $a.(V(i,a))$; $l,t.(M(l,t)))\to(x$:Id$\to T(i,x))\to$
        (Msg(M) List))
  $\times$ $Choose$:(i,a:Id$\to \mathbb{N} \to (x$:Id$\to T(i,x))\to(?(V(i,a))))$
  $\times$ $time$:($E\to$rationals)
  $\times$ va:val-axiom(E;V;M;$info$;$pred?$;
      $init$;$Trans$;
      $Choose$;$Send$;val;$time$)
  $\times$ $opres$:($\forall e,e'$:$E.\ e < e' \Rightarrow$ qle$((time(e)); (time(e'))))$
  $\times$ $discrete$:(Id$\to$Id$\to \mathbb{B}$)
  $\times$ ($consts$:($\forall i,x$:Id.
        ($\uparrow(discrete(i,x))$)
        $\Rightarrow$ (constant_function$((init(i,x))$; rationals; $(T(i,x)))$
          $\wedge$ ($\forall k$:Knd, v:kindcase(k; $a.(V(i,a))$; $l,t.(M(l,t)))$, s:EState$((T(i)))$.
            constant_function$((s(x))$; rationals; $(T(i,x)))$
            $\Rightarrow$ constant_function$((Trans(i,k,v,s,x))$; rationals; $(T(i,x))))))$
  $\times$ top))

clarification:

event_system{i:l}
$\equiv_{\text{def}}$ E:Type{i}
    $\times$ (eq:EqDecider(E)
    $\times$ $pred?$:($E\to(E + \text{Unit})$)
    $\times$ $info$:($E\to((\text{:Id} \times \text{Id}) + (\text{:(:IdLnk} \times E) \times \text{Id})))$
    $\times$ $oaxioms$:EOrderAxioms{i:l}
                        (E; $pred?$; $info$)
    $\times$ T:(Id$\to$Id$\to$Type{i})
    $\times$ V:(Id$\to$Id$\to$Type{i})
    $\times$ M:(IdLnk$\to$Id$\to$Type{i})

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$\times$ $init$:(i:Id$\rightarrow$EState(($T(i)$)))

$\times$ $Trans$:(i:Id$\rightarrow$$k$:Knd$\rightarrow$kindcase($k$; $a.(V(i,a))$; $l,t.(M(l,t))$)$\rightarrow$EState(($T(i)$))$\rightarrow$EState
$\quad\quad$(($T(i)$))))

$\times$ val:(e:$E\rightarrow$kindcase(kind($info$;e); $a.(V(\text{loc}(info;e),a))$; $l,t.(M(l,t))$)))

$\times$ $Send$:(i:Id$\rightarrow$$k$:Knd$\rightarrow$kindcase($k$; $a.(V(i,a))$; $l,t.(M(l,t))$)$\rightarrow$(x:Id$\rightarrow T(i,x)$)$\rightarrow$
$\quad\quad$(Msg(M) List))

$\times$ $Choose$:(i:Id$\rightarrow$$a$:Id$\rightarrow$ $\mathbb{N}$ $\rightarrow$(x:Id$\rightarrow T(i,x)$)$\rightarrow$(($V(i,a)$) + Unit))

$\times$ $time$:($E\rightarrow$rationals)

$\times$ va:val-axiom(E;V;M;$info$;$pred?$;
$\quad\quad$ $init$;$Trans$;
$\quad\quad$ $Choose$;$Send$;val;$time$)

$\times$ $opres$:($\forall e$:E, e':E. cless(E;$pred?$;$info$;e;e') $\Rightarrow$ qle(($time(e)$); ($time(e')$))))

$\times$ $discrete$:(Id$\rightarrow$Id$\rightarrow \mathbb{B}$)

$\times$ ($consts$:($\forall i$:Id, x:Id.
$\quad\quad$ ($\uparrow(discrete(i,x))$)
$\quad\quad$ $\Rightarrow$ (constant_function(($init(i,x)$); rationals; ($T(i,x)$))
$\quad\quad\quad$ $\wedge$ ($\forall k$:Knd, v:kindcase(k; $a.(V(i,a))$; $l,t.(M(l,t))$), s:EState(($T(i)$)).
$\quad\quad\quad\quad$ constant_function(($s(x)$); rationals; ($T(i,x)$))
$\quad\quad\quad\quad$ $\Rightarrow$ constant_function(($Trans(i,k,v,s,x)$); rationals; ($T(i,x)$))))))

$\times$ top))