

event-structures^{0,22}

ABS: $\text{first}(e)$ **first**

STM: first_wf

ABS: $\text{pred}(e)$ **pred**

STM: pred_wf

ABS: $\text{ecase1}(e; \text{info}; i.f(i); l, e'.g(l; e'))$ **ecase1**

STM: ecase1_wf

ABS: $\text{loc}(e)$ **loc**

STM: loc_wf

ABS: $\text{rcv?}(e)$ **rcv?**

STM: rcv?_wf

ABS: $\text{sender}(e)$ **sender**

STM: sender_wf

ABS: $\text{link}(e)$ **link**

STM: link_wf

ABS: $\text{pred!}(e; e')$ **pred!**

STM: pred!_wf

STM: pred-total

ABS: $e < e'$ **cless**

STM: cless_wf

STM: cless-eq-loc

ABS: $\text{sends-bound}(p; e; l)$ **sends-bound**

STM: sends-bound_wf

STM: $\text{sends-bound-property}$

STM: $\text{strong-sends-bound-property}$

STM: pred-first-lemma

ABS: $\text{eventlist}(pred?;e)$ **eventlist**
 STM: eventlist_wf
 STM: member_eventlist
 STM: $\text{l_before_eventlist}$
 STM: $\text{l_before_eventlist_iff}$
 ABS: $\text{rcv-from-on}(dE;dL;info;e;l;r)$ **rcv-from-on**
 STM: rcv-from-on_wf
 STM: $\text{assert-rcv-from-on}$
 ABS: $\text{receives}(dE;dL;pred?;info;p;e;l)$ **receives**
 STM: receives_wf
 STM: member_receives
 ABS: $\text{index}(dE;dL;pred?;info;p;r)$ **index**
 STM: index_wf
 STM: index-property1
 ABS: $\text{kind}(e)$ **kind**
 STM: kind_wf
 ABS: $\text{rtag}(info;e)$ **rtag**
 STM: rtag_wf
 STM: rcv?-kind
 STM: rcv?-link
 ABS: $\text{EOrderAxioms}(E; pred?; info)$ **EOrderAxioms**
 STM: EOrderAxioms_wf
 ABS: $\text{when-after}(e;info;pred?;init;Trans;val)$ **when-after**
 STM: when-after_wf
 ABS: $\text{state_when}(e)$ **state-when**
 STM: state_when_wf
 ABS: $\text{state_after}(e;info;pred?;init;Trans;val)$ **state-after**

STM: state_after_wf

ABS: val-axiom($E; V; M; info; pred?; init; Trans; Choose; Send; val$) **val-axiom**

STM: val-axiom_wf

ABS: rmsg($info; val; e$) **rmsg**

STM: rmsg_wf

ABS: sends($dE; dL; pred?; info; val; p; e; l$) **sends**

STM: sends_wf

STM: better-sends_wf

ABS: SESAxioms $\{i:l\}(E; T; pred?; info; when; after)$ **SESAxioms**

STM: SESAxioms_wf

ABS: eventtype($k; loc; V; M; e$) **eventtype**

STM: eventtype_wf

ABS: ESAxioms($E; T; M; loc; kind; val; when; after; sends; sender; index; first; pred; causl$) **ESAxioms**

STM: ESAxioms_wf

STM: SES-implies-ES

ABS: ES **event_system**

STM: event_system_wf

ABS: E **es-E**

STM: es-E_wf

ABS: es-eq(es) **es-eq**

STM: es-eq_wf

ABS: es-pred?(es) **es-pred?**

STM: es-pred?_wf

ABS: es_info(es) **es_info**

STM: es_info_wf

ABS: loc(e) **es-loc**

STM: es-loc_wf

ABS: $\text{kind}(e)$ **es-kind**
 STM: es-kind_wf
 ABS: $\text{es-oaxioms}(es)$ **es-oaxioms**
 STM: es-oaxioms_wf
 ABS: $\text{es-T}(es)$ **es-T**
 STM: es-T_wf
 ABS: $\text{es-V}(es)$ **es-V**
 STM: es-V_wf
 ABS: $\text{es-M}(es)$ **es-M**
 STM: es-M_wf
 ABS: Msg **es-Msg**
 STM: es-Msg_wf
 ABS: $(\text{Msg on } l)$ **es-Msgl**
 STM: es-Msgl_wf
 ABS: $\text{isrcv}(e)$ **es-isrcv**
 STM: es-isrcv_wf
 ABS: $\text{tag}(e)$ **es-tag**
 STM: es-tag_wf
 ABS: $\text{lnk}(e)$ **es-lnk**
 STM: es-lnk_wf
 ABS: $\text{act}(e)$ **es-act**
 STM: es-act_wf
 ABS: $\text{rcvtype}(e)$ **es-rcvtype**
 STM: es-rcvtype_wf
 ABS: $\text{acttype}(e)$ **es-acttype**
 STM: es-acttype_wf
 ABS: $\text{kindtype}(i;k)$ **es-kindtype**

STM: es-kindtype_wf
 ABS: $\text{valtype}(e)$ **es-valtype**
 STM: es-valtype_wf
 ABS: $\text{vartype}(i;x)$ **es-vartype**
 STM: es-vartype_wf
 ABS: $\text{state}@i$ **es-state**
 STM: es-state_wf
 ABS: $s.x$ **es-state-ap**
 STM: es-state-ap_wf
 ABS: $\text{es_init}(es)$ **es_init**
 STM: es_init_wf
 ABS: x **initially@i** **es-initially**
 STM: es-initially_wf
 ABS: $\text{es-Trans}(es)$ **es-Trans**
 ABS: $\text{es_val}(es)$ **es_val**
 STM: es_val_wf
 STM: es-Trans_wf
 ABS: $\text{es-Send}(es)$ **es-Send**
 STM: es-Send_wf
 ABS: $\text{es-Choose}(es)$ **es-Choose**
 STM: es-Choose_wf
 ABS: $\text{first}(e)$ **es-first**
 STM: es-first_wf
 ABS: $\text{pred}(e)$ **es-pred**
 STM: es-pred_wf
 ABS: $\text{es-pred!}(es;e;e')$ **es-pred!**
 STM: es-pred!_wf

STM: es-loc-pred
 STM: es-loc-pred-plus
 STM: es-pred!-wellfounded
 ABS: $\text{val}(e)$ **es-val**
 STM: es-val_wf
 ABS: (state when e) **es-state-when**
 STM: es-state-when_wf
 ABS: state after e **es-state-after**
 STM: es-state-after_wf
 ABS: x when e **es-when**
 STM: es-when_wf
 ABS: (x after e) **es-after**
 STM: es-after_wf
 ABS: $\text{sends}(l;e)$ **es-sends**
 STM: es-sends_wf
 ABS: $\text{sender}(e)$ **es-sender**
 STM: es-sender_wf
 ABS: $\text{index}(e)$ **es-index**
 STM: es-index_wf
 ABS: ($e < e'$) **es-causl**
 STM: es-causl_wf
 ABS: ($e <_{\text{loc}} e'$) **es-locl**
 STM: es-locl_wf
 ABS: $e \leq e'$ **es-le**
 STM: es-le_wf
 ABS: $\text{Trans}(i)$ **es-trans**
 STM: es-trans_wf

ABS: $\text{Send}(i)$ **es-send**
 STM: es-send_wf
 ABS: $\text{Choose}(i)$ **es-choose**
 STM: es-choose_wf
 STM: es-axioms
 STM: es-locl-wellfnd
 STM: es-locl-antireflexive
 STM: es-le-loc
 STM: es-locl-iff
 ABS: $\text{mtag}(m)$ **es-mtag**
 STM: es-mtag_wf
 ABS: $s_1 \equiv s_2 \text{ mod } x@i$ **es-x-equiv**
 STM: es-x-equiv_wf
 ABS: $\text{es-independent}(es; i; k; x)$ **es-independent**
 STM: es-independent_wf
 STM: mlnk_wf2
 ABS: $\text{sends}(l, tg, e)$ **es-tg-sends**
 STM: es-tg-sends_wf
 ABS: $\text{State}(ds)$ **decl-state**
 STM: decl-state_wf
 STM: decl-state-eta
 ABS: $\forall e@i. P(e)$ **alle-at**
 STM: alle-at_wf
 STM: es-rcv-kind
 STM: es-kind-rcv
 ABS: $\exists e \leq e'. P(e')$ **existse-ge**
 STM: existse-ge_wf

ABS: @ i state ds **es-state-type**
 STM: es-state-type_wf
 STM: es-state-type-implies
 ABS: DeclaredType($ds;x$) **decl-type**
 STM: decl-type_wf
 ABS: @ i x initially $v:T$ **init-p**
 STM: init-p_wf
 ABS: @ i only events in L change $x : T$ **frame-p**
 STM: frame-p_wf
 ABS: only events in L send on l with tg **sframe-p**
 STM: sframe-p_wf
 ABS: @ i : k affects only L **afame-p**
 STM: afame-p_wf
 ABS: @ i : k sends only on links in L **bframe-p**
 STM: bframe-p_wf
 ABS: @ i : only members of L read x **rframe-p**
 STM: rframe-p_wf
 ABS: @ i events of kind k change x to f State(ds) (val: T) **effect-p**
 STM: effect-p_wf
 ABS: rcvs from e on $l = L$ **es-rcv-from**
 STM: es-rcv-from_wf
 ABS: loc-ordered($es;L$) **loc-ordered**
 STM: loc-ordered_wf
 STM: loc-ordered-equality
 ABS: es-receives($es;e;l$) **es-receives**
 STM: es-receives_wf
 STM: member-es-receives

STM: loc-ordered-es-receives

STM: es-rcv-from-equal-receives

STM: es-rcv-from-member-index

STM: es-rcv-from-implies

ABS: sends-msgs($s;v;tg_f$) **sends-msgs**

STM: sends-msgs_wf

ABS: sends $k(v:T)$ on $l:\text{tagged}(g,\text{State}(ds),v):dt$ **sends-p**

STM: sends-p_wf

ABS: @ i Precondition for $a(v)P$ $\text{State}(ds)$ ($v:T$) **pre-p**

STM: pre-p_wf