

event-structure-theory^{11,40}

ABS: event_system_typename() **event_system_typename**

STM: event_system_typename_wf

ABS: EventsWithOrder **EOrder**

STM: EOrder_wf

ABS: EventsWithState **E-State**

STM: E-State_wf

STM: EState-subtype-EOrder

ABS: EventsWithKinds **EKind**

STM: EKind_wf

ABS: EventsWithValues **EVal**

STM: EVal_wf

ABS: ESMachineAxiom($E;T;V;M;loc;knd;val;when;after;sndr;Trans;Send;Choose$) **ESMachineAxiom**

STM: ESMachineAxiom_wf

ABS: $e = e'$ **es-eq-E**

STM: es-eq-E_wf

STM: assert-es-eq-E

STM: assert-es-eq-E-2

STM: decidable__es-E-equal

STM: test-eq-E-update

ABS: es-LnkTag-deq **es-LnkTag-deq**

STM: es-LnkTag-deq_wf

ABS: $\text{case}(\text{kind}(e))\text{act}(a) \Rightarrow f(a)\text{rcv}(l,tg) \Rightarrow g(l,tg)$ **es-kindcase**

STM: es-kindcase_wf

ABS: msgtype(m) **es-msgtype**

STM: es-msgtype_wf

STM: es-valtype-kindtype
 ABS: state@i\ \ x **es-state-without**
 STM: es-state-without_wf
 STM: es-state-eta
 STM: event_system-level-subtype
 ABS: mk-eval($E;eq;prd;info;oax;T;w;a;sax;V;v$) **mk-eval**
 STM: mk-eval_wf
 ABS: AtomFreeDecls(X) **EVal-atom-free**
 ABS: state when $e \setminus x$ **es-state-when-without**
 STM: es-state-when-without_wf
 ABS: state after $e \setminus x$ **es-state-after-without**
 STM: es-state-after-without_wf
 ABS: $e \leq e'$ **es-causle**
 STM: es-causle_wf
 STM: es-locl-trans
 STM: es-locl-trichotomy
 STM: es-le-trans
 STM: es-locl_transitivity
 STM: es-locl_transitivity1
 STM: es-locl_transitivity2
 STM: es-le_transitivity
 STM: es-le_weakening
 STM: es-le_weakening_eq
 STM: es-locl-trans-test
 STM: es-locl-irreflex-test
 STM: es-le-trans2
 STM: es-le-trans3

STM: es-index-zero
STM: es-causle-trans
STM: es-causl-trans3
STM: es-causle_transitivity
STM: es-causl_transitivity
STM: es-causl_transitivity1
STM: es-causl_transitivity2
STM: es-causle_weakening
STM: es-causle_weakening_eq
STM: es-causle_weakening_locl
STM: es-causl_weakening
STM: es-causl-trans-test
STM: es-le-causle
STM: es-locl-total
STM: es-locl-total2
STM: same-loc-total
STM: same-loc-total2
STM: es-le-total
STM: es-locl-swellfnd
STM: es-causl-wellfnd
STM: es-causl-swellfnd
STM: es-le-not-locl
STM: es-causal-antireflexive
STM: es-causl_irreflexivity
STM: es-causal-antisymmetric
STM: es-causl-locl
STM: es-causle-le

STM: es-pred-locl
 STM: es-le-self
 STM: es-pred-le
 STM: es-pred-causl
 STM: es-sender-causl
 STM: es-sender-causle
 STM: causl-trans-test2
 STM: es-causle-retraction
 ABS: $f^{**}(e)$ **es-fix**
 STM: es-fix_wf
 STM: es-fix-cases
 STM: es-time-sender
 STM: es-first-implies
 STM: es-loc-rcv
 STM: es-isrcv-loc
 STM: es-hasloc
 STM: es-loc-sender
 STM: same-sender-index
 STM: es-le-iff
 STM: es-first-le
 STM: es-le-antisymmetric
 STM: es-le_antisymmetry
 STM: es-first-unique
 STM: es-causl-iff
 STM: implies-es-pred
 STM: es-le-pred
 STM: implies-es-pred2

STM: es-pred-one-one
 STM: decidable__es-locl
 STM: es-next
 ABS: $e <_{\text{loc}} e'$ **es-bless**
 STM: es-bless_wf
 STM: assert-es-bless
 STM: decidable__es-le
 ABS: $\text{es-ble}\{i:l\}(es;e;e')$ **es-ble**
 STM: es-ble_wf
 STM: assert-es-ble
 STM: decidable__es-causl
 STM: decidable__es-causle
 STM: decidable__existse-causl
 STM: decidable__existse-causle
 STM: decidable__alle-causl
 STM: decidable__alle-causle
 STM: decidable__rel_plus-causl
 STM: decidable__rel_star-causl
 STM: causal-sort
 STM: es-sends-bound
 STM: decidable__existse-rcv
 STM: es-minimal-event
 ABS: $\text{es-bc}\{i:l\}(es;e;e')$ **es-bc**
 STM: es-bc_wf
 STM: assert-es-bc
 ABS: $\exists e=k(v).P(e;v)$ **es-ek**
 ABS: $\exists e:\text{rvc}(l,tg,v).P(e;v)$ **es-er**

ABS: $\text{mval}(m)$ **es-mval**
 STM: es-mval_wf
 STM: es-mval-valtype
 STM: es-msg-rcvd
 ABS: $\text{before}(e)$ **es-before**
 STM: es-before_wf
 STM: es-before_wf2
 STM: member-es-before
 STM: lbefore-es-before
 STM: lbefore-es-before-iff
 ABS: $\text{es-le-before}(es;e)$ **es-le-before**
 STM: es-le-before_wf
 STM: member-es-le-before
 STM: es-causle-list
 ABS: $\text{es-init}(es;e)$ **es-init**
 STM: es-init_wf
 STM: es-init-le
 STM: es-first-init
 STM: es-init-identity
 STM: es-init-elim
 STM: es-init-elim2
 STM: es-init-eq
 STM: es-loc-init
 ABS: $[e, e']$ **es-interval**
 STM: es-interval_wf
 STM: member-es-interval
 STM: lbefore-es-interval

STM: hd-es-interval
 STM: es-interval-non-zero
 STM: es-interval-nil
 STM: es-interval-is-nil
 STM: es-interval-last
 STM: es-interval-less
 STM: es-interval-less-sq
 STM: es-interval-eq
 STM: es-interval-eq2
 STM: es-interval-length-one-one
 STM: es-interval-one-one
 STM: es-interval-iseg
 STM: es-interval-partition
 STM: es-interval-select
 STM: es-interval_wf2
 STM: es-le-before-partition
 STM: es-le-before-partition2
 ABS: $\text{haslnk}(l;e)$ **es-haslnk**
 STM: es-haslnk_wf
 STM: assert-es-haslnk
 ABS: $\text{rcvs}(l;\text{before}(e'))$ **es-rcvs**
 STM: es-rcvs_wf
 STM: member-es-rcvs
 ABS: $\text{snds}(l;\text{before}(e))$ **es-snds**
 STM: es-snds_wf
 STM: member-es-snds
 ABS: $\text{snds}(l, \text{before}(e,n))$ **es-snds-index**

STM: es-snds-index_wf
 STM: member-es-snds-index
 STM: firstn-before
 STM: es-before-decomp
 STM: last-es-snds-index
 ABS: $\text{emsg}(e)$ **es-msg**
 STM: es-msg_wf
 STM: es-msg_wf2
 STM: es-msg-member-sends
 ABS: $\text{msgs}(l; \text{before}(e'))$ **es-msgs**
 STM: es-msgs_wf
 STM: haslink_wf2
 STM: member-es-msgs
 STM: es-fifo-nil
 STM: es-fifo
 STM: es-after-pred
 STM: es-after-pred2
 STM: decl-state-exists
 STM: decl-state-subtype
 ABS: $@i \text{ always}.P(x)$ **alle-at1**
 STM: alle-at1_wf
 ABS: $@i \text{ always}.P(x_1; x_2)$ **alle-at2**
 STM: alle-at2_wf
 STM: alle-at-iff
 STM: alle-at-not-first
 STM: es-invariant1
 STM: es-invariant2

STM: es-constant1

ABS: $\exists e @ i. P(e)$ **existse-at**

STM: existse-at_wf

STM: change-lemma

STM: change-lemma2

STM: es-first-exists

STM: change-since-init

ABS: $\exists e \leq e'. P(e)$ **existse-le**

STM: existse-le_wf

ABS: $\exists e < e'. P(e)$ **existse-before**

STM: existse-before_wf

STM: existse-before-iff

STM: decidable__existse-before

STM: existse-le-iff

STM: decidable__existse-le

ABS: $\forall e' \geq e. P(e')$ **alle-ge**

STM: alle-ge_wf

ABS: $\forall e < e'. P(e)$ **alle-lt**

STM: alle-lt_wf

STM: alle-lt-iff

STM: decidable__alle-lt

ABS: $\forall e \leq e'. P(e)$ **alle-le**

STM: alle-le_wf

STM: alle-le-iff

STM: decidable__alle-le

ABS: $\forall e \in [e_1, e_2). P(e)$ **alle-between1**

STM: alle-between1_wf

STM: alle-between1-trivial
 STM: alle-between1-true
 STM: alle-between1-false
 STM: alle-between1_functionality_wrt_iff
 STM: decidable__alle-between1
 ABS: $\exists e \in [e_1, e_2]. P(e)$ **existse-between1**
 STM: existse-between1_wf
 STM: existse-between1-true
 STM: existse-between1-false
 STM: existse-between1_functionality_wrt_iff
 STM: decidable__existse-between1
 ABS: $\forall e \in [e_1, e_2]. P(e)$ **alle-between2**
 STM: alle-between2_wf
 STM: alle-between2-true
 STM: alle-between2-false
 STM: alle-between2_functionality_wrt_iff
 STM: decidable__alle-between2
 ABS: $\exists e \in [e_1, e_2]. P(e)$ **existse-between2**
 STM: existse-between2_wf
 STM: existse-between2-false
 STM: existse-between2-true
 STM: existse-between2_functionality_wrt_iff
 STM: decidable__existse-between2
 ABS: $\exists e \in (e_1, e_2]. P(e)$ **existse-between3**
 STM: existse-between3_wf
 STM: existse-between3-false
 STM: existse-between3-true

STM: existse-between3_functionality_wrt_iff

STM: decidable__existse-between3

ABS: $\forall e \in (e_1, e_2]. P(e)$ **alle-between3**

STM: alle-between3_wf

STM: alle-between3_false

STM: es-subinterval

STM: last-change

ABS: e is first@ i s.t. $e.P(e)$ **es-first-at**

STM: es-first-at_wf

STM: es-first-before

STM: es-first-before2

ABS: es-first-at-since($es; i; e; e.R(e); e.P(e)$) **es-first-at-since**

STM: es-first-at-since_wf

STM: previous-event-exists

STM: es-first-at-since-iff

ABS: es-first-at-since'($es; i; e; e.R(e); e.P(e)$) **es-first-at-since'**

STM: es-first-at-since'_wf

ABS: $\forall e = \text{rcv}(l, tg). P(e)$ **alle-rcv**

STM: alle-rcv_wf

ABS: $\exists e = \text{rcv}(l, tg). P(e)$ **existse-rcv**

STM: existse-rcv_wf

STM: es-bound-list

STM: es-bound-list2

STM: es-machine-axiom

ABS: e receives $\parallel a$ **es-rcv-atom**

STM: es-rcv-atom_wf

ABS: e sends $\parallel a$ **es-send-atom**

STM: es-send-atom_wf
 ABS: e sends to $i \parallel a$ **es-send-atom-to**
 STM: es-send-atom-to_wf
 ABS: e leaks x to e' **es-leaks**
 ABS: e copies x **es-copies**
 STM: state-after-pred
 STM: implies-es-atom-axiom
 ABS: $i \parallel a$ **es-atom**
 STM: es-atom_wf
 STM: es-copies_wf
 STM: es-leaks_wf
 STM: es-atom-axiom
 STM: es-atom-lemma1
 STM: es-atom-lemma2
 ABS: @ i discrete ds **es-dds**
 STM: es-dds_wf
 STM: es-dds-single
 ABS: discrete state@ i **es-dstate**
 STM: es-dstate_wf
 STM: es-state-dstate-subtype
 STM: es-dstate-subtype
 ABS: (discrete state when e) **es-dstate-when**
 STM: es-dstate-when_wf
 STM: es-state-when-dstate-when
 ABS: (discrete state after e) **es-dstate-after**
 STM: es-dstate-after_wf
 STM: es-state-after-dstate-after

STM: dstate-after-pred

STM: alle-between1-after

STM: alle-between1-after-1

ABS: @*i* stable *state.P(state)* **es-stable**

STM: es-stable_wf

STM: stable-implies

STM: stable-implies2

STM: stable-implies3

STM: stable-implies4

ABS: @*i* Precondition for *a(Outcome(p)) P* discrete state(*ds*) **discrete-pre-p**

STM: discrete-pre-p_wf

STM: last-event

ABS: last-solution(*es;P;d*) **last-solution**

STM: last-solution_wf

STM: last-transition

STM: last-decidable

STM: last-state-change

STM: last-state-change2

STM: last-state-change3

ABS: @*i* only *L* affect *x:T* **es-frame**

STM: es-frame_wf

STM: frame-p-es-frame

STM: es-stable-1

STM: es-stable-2

STM: es-stable-3

STM: es-constant-1

ABS: es-responsive(*es;l₁;tg₁;l₂;tg₂*) **es-responsive**

STM: es-responsive_wf

STM: es-responsive-bijection

ABS: only $k(v):B$ sends $[tg, f(s;v)] : T$ on l **es-only-sender**

STM: es-only-sender_wf

ABS: @ i x has type T **es-type**

STM: vartype-es-type

STM: vartype-es-state-sub

STM: es-state-subtype

STM: es-state-subtype-iff

STM: es-state-subtype2

STM: state-after-pred-ds

STM: es-invariant

STM: state-when-first

STM: es-when-first

STM: es-when-init

STM: es-discrete-when-first

STM: es-when-first-discrete

STM: dds-state-after-elapsed

STM: dds-init-elapsed

STM: init-p-implies

ABS: $\text{usends1-p}(es;ds;k;T;l;tg;B;f)$ **usends1-p**

STM: usends1-p_wf

STM: usends1-function

ABS: $\text{sends1-p}(es;x;A;k;B;l;tg;T;f)$ **sends1-p**

STM: sends1-p_wf

STM: sends-p-implies-sends1-p

ABS: $k(v:B)$ sends $f(x:A,v)$ on l tagged with $tg:T$ provided $c(x,v)$ **conditional-send1-p**

STM: conditional-send1-p_wf

STM: sends1-p-implies-conditional-send1-p

STM: conditional-send1-function

ABS: $k(v:B)$ sends on l $[tg:T, f <state, v>]?\square$ **conditional-send-p**

STM: conditional-send-p_wf

STM: sends-p-implies-conditional-send-p

ABS: pre-init1-p($es;i;x;X;x_0;a;p;P$) **pre-init1-p**

STM: pre-init1-p_wf

ABS: weak-precond-send-p($es;T;A;l;tg;a;ds;P;f$) **weak-precond-send-p**

STM: weak-precond-send-p_wf

ABS: discrete-weak-precond-send-p($es;T;A;l;tg;a;ds;P;f$) **discrete-weak-precond-send-p**

STM: discrete-weak-precond-send-p_wf

STM: wps-implies-discrete-wps

ABS: weak-send-do-apply($es;T;l;tg;a;ds;f$) **weak-send-do-apply**

STM: weak-send-do-apply_wf

ABS: $@i$ locl(a) occurs once **once-p**

STM: once-p_wf

ABS: locl(a) sends $[tg, f\{A \rightarrow T\}(x)]$ on link l once **send-once-p**

STM: send-once-p_wf

ABS: recognizer-p($es;T;A;P;k;i;r;x$) **recognizer-p**

STM: recognizer-p_wf

ABS: recognizer($es;i;ds;x;k;T;test$) **recognizer**

STM: recognizer_wf

ABS: $@i$ $k(v:T)$ triggers local action a when $P(x:A) \vee$ **trigger1-p**

STM: trigger1-p_wf

STM: es-interval-induction

STM: es-interval-induction2

ABS: PossibleEvent(*poss*) **possible-event**

STM: possible-event_wf

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

STM: pe-es_wf

ABS: pe-e(*p*) **pe-e**

STM: pe-e_wf

ABS: pe-state(*p*) **pe-state**

STM: pe-state_wf

ABS: pe-loc(*p*) **pe-loc**

STM: pe-loc_wf

ABS: K(*P*)@*e* **es-knows**

STM: es-knows_wf

STM: es-knows-true

STM: es-knows-knows

STM: es-knows-not

STM: es-knows-trans

STM: es-knows-valid

ABS: $e_1 \leq e_2$ **poss-le**

STM: poss-le_wf

STM: es-knows-stable

ABS: *e*:*s*.*P*(*s*)@*j* **es-simul**

STM: es-simul_wf

ABS: es-decls(*es*;*i*;*ds*;*da*) **es-decls**

STM: es-decls_wf

STM: es-decls-iff

STM: es-decls-join-single

ABS: with decls ds $dasends$ on l from e include $f(e)$ and only these for tags in tgs

es-sends-iff

STM: es-sends-iff_wf

ABS: state $dsk:A$ sends $[tg, e.f(e):B]$ on l **es-kind-sends-iff**

STM: es-kind-sends-iff_wf

STM: es-sends-iff_functionality

ABS: es-update-iff($es;i;x;ds;e.P(e);s.f(s)$) **es-update-iff**

STM: es-update-iff_wf

ABS: (e sends on l with tag tg) **es-sends-on**

STM: es-sends-on_wf

ABS: es-first-from($es;e;l;tg$) **es-first-from**

STM: es-first-from_wf

STM: es-kind-first-from

STM: es-loc-first-from

ABS: loc-on-path($es;i;L$) **loc-on-path**

STM: loc-on-path_wf

STM: loc-on-path-append

STM: loc-on-path-cons

STM: loc-on-path-nil

STM: loc-on-path-singleton

STM: es-sender-first-from

STM: es-first-from-is-first

ABS: es-sends-iff2($es;l;tg;B;ds;e.P(e);e.f(e)$) **es-sends-iff2**

STM: es-sends-iff2_wf

STM: es-sends-iff2_functionality

ABS: event-info($ds;da$) **event-info**

STM: event-info_wf
 ABS: es-info($es;e$) **es-info**
 STM: es-info_wf
 ABS: es-hist $\{i:l\}(es;e_1;e_2)$ **es-hist**
 STM: es-hist_wf
 STM: member-es-hist
 STM: null-es-hist
 STM: es-hist-iseg
 STM: es-hist-partition
 STM: es-hist-last
 STM: last-es-hist
 STM: es-hist-is-append
 STM: es-hist-is-concat
 STM: iseg-es-hist
 STM: es-hist-one-one
 ABS: es-trans-state-from $\{i:l\}(es;ks;g;z;e_1;e_2)$ **es-trans-state-from**
 STM: es-trans-state-from_wf
 ABS: $e_2 = \text{first } e \geq e_1.P(e)$ **es-first-since**
 STM: es-first-since_wf
 STM: es-first-since_functionality_wrt_iff
 STM: alle-between1-not-first-since
 STM: alle-between2-not-first-since
 STM: es-increasing-sequence
 STM: es-increasing-sequence2
 ABS: $[e_1;e_2] \sim ([a,b].p(a;b)) * [a,b].q(a;b)$ **es-pstar-q**
 STM: es-pstar-q_wf
 STM: es-pstar-q-trivial

STM: es-pstar-q-le

STM: es-pstar-q_functionality_wrt_implies

STM: es-pstar-q_functionality_wrt_rev_implies

STM: es-pstar-q_functionality_wrt_iff

STM: es-pstar-q-partition

ABS: $[e_1, e_2] \sim ([a, b].p(a; b)) + \mathbf{es-pplus}$

STM: es-pplus_wf

STM: es-pplus_functionality_wrt_implies

STM: es-pplus_functionality_wrt_rev_implies

STM: es-pplus_functionality_wrt_iff

STM: es-pplus-trivial

STM: es-pplus-le

STM: es-pplus-alle-between2

STM: es-pplus-partition

STM: es-pplus-first-since

STM: es-pplus-first-since-exit

ABS: $\text{data}(T)$ **data**

STM: data_wf

ABS: $\text{secret-table}(T)$ **secret-table**

STM: secret-table_wf

ABS: $\|tab\|$ **st-length**

STM: st-length_wf

ABS: $\text{ptr}(tab)$ **st-ptr**

STM: st-ptr_wf

ABS: $\text{st-atom}(tab; n)$ **st-atom**

STM: st-atom_wf

ABS: $\text{atoms-distinct}(tab)$ **st-atoms-distinct**

STM: es-secret-server_wf
 STM: ss-ptr-non-decreasing
 STM: ss-table-length
 STM: ss-atom-constant
 STM: ss-atoms-distinct
 STM: ss-encrypt-unique
 ABS: $\text{es-seq}(es;S)$ **es-seq**
 STM: es-seq_wf
 STM: send-minimal-lemma
 ABS: $@e(x \rightarrow v)$ **es-change-to**
 STM: es-change-to_wf
 STM: change-to-lemma
 STM: change-to-lemma2
 ABS: $\text{change-to}(x;e)$ **change-to**
 STM: change-to_wf
 ABS: x changed before e **changed**
 STM: changed_wf
 ABS: (last change to x before e) **last-change**
 STM: last-change_wf
 STM: last-change-property
 STM: last-change-after-property
 STM: change-to-last-change
 STM: after-last-change
 STM: loc-last-change
 STM: assert-changed
 STM: not-changed
 STM: has-changed

STM: last-change-pred
 STM: init-changed
 STM: init-not-changed
 STM: last-change-equal
 STM: last-change-equal2
 STM: es-le-last-change
 ABS: lastchange($x;e$) **es-lc**
 STM: es-lc_wf
 STM: es-lc-init-p
 STM: es-lc-after
 STM: es-loc-lc
 STM: es-lc-le
 STM: es-after-lc-before
 STM: es-lc-no-change
 STM: es-lc-no-change2
 STM: es-lc-cases
 STM: es-lc-cases2
 STM: es-lc-bool
 STM: es-lc-btrue
 STM: es-lc-unique
 STM: es-lc-equal
 STM: once-lemma
 STM: const-lemma1
 STM: const-lemma
 STM: next-state-relation
 STM: next-var-value
 ABS: next event in $[e;bound]$ after which $x = v$ **es-next-assign**

STM: es-next-assign_wf

STM: es-next-assign-property

STM: es-next-assign-unique

ABS: next event in $[e, bound]$ after which $x =_b b$ **es-next-bool-assign**

STM: es-next-bool-assign_wf

STM: es-next-bool-assign-property

ABS: $(x \text{ unchanged-for } t @ e)$ **unchanged-for**

STM: unchanged-for_wf

STM: es-causle-time

STM: es-causl-fifo

STM: unchanged-for-change-to

ABS: $\text{val}(e) \equiv \text{val}(e')$ **es-same-val**

STM: es-same-val_wf

ABS: $\text{AbsInterface}(A)$ **es-interface**

STM: es-interface_wf

STM: es-interface-subtype_rel

ABS: $f'Ia$ **es-interface-image**

STM: es-interface-image_wf

STM: p-first_wf-interface

ABS: $\text{es-in-port}(es; l; tg)$ **es-in-port**

STM: es-in-port_wf

ABS: $\text{es-trigger}(es; i; knd; ds; f)$ **es-trigger**

STM: es-trigger_wf

ABS: $\text{es-triggers}(es; i; ds; conds)$ **es-triggers**

STM: es-triggers_wf

ABS: $\text{es-in-port-conds}(A; l; tg)$ **es-in-port-conds**

STM: es-in-port-conds_wf

STM: es-in-port-triggers

ABS: es-triggers-params-consistent($es; A; i; ds; conds$) **es-triggers-params-consistent**

STM: es-triggers-params-consistent_wf

STM: es-triggers-params-join

STM: es-triggers-params-list-join

STM: functions-decl-state

STM: es-interface-conditional

ABS: es-interface-left(X) **es-interface-left**

STM: es-interface-left_wf

ABS: es-interface-right(X) **es-interface-right**

STM: es-interface-right_wf

ABS: $e \in_b X$ **es-is-interface**

STM: es-is-interface_wf

ABS: es-interface-empty($es; I$) **es-interface-empty**

STM: es-interface-empty_wf

ABS: Empty **es-empty-interface**

STM: es-empty-interface_wf

ABS: isempty{isempty_compseq_tag_def:ObjectId}(e) **isempty_compseq_tag_def**

STM: es-empty-interface-property

STM: es-trigger-not-loc

STM: es-trigger-loc

STM: es-triggers-not-loc

STM: es-triggers-loc

ABS: $\{I\}$ **es-interface-predicate**

STM: es-interface-predicate_wf

STM: es-interface-conditional-domain

STM: es-interface-conditional-domain-iff

STM: es-interface-conditional-predicate-equivalent
 STM: es-interface-conditional-domain-member
 ABS: $E(X)$ **es-E-interface**
 STM: es-E-interface_wf
 STM: decidable_equal_es-E-interface
 ABS: es-interface-sublist($X; z$) **es-interface-sublist**
 STM: es-interface-sublist_wf
 STM: es-E-interface-subtype
 STM: es-E-interface-subtype_rel
 STM: es-E-interface-strong-subtype
 STM: es-E-interfaces-strong-subtype
 STM: es-E-interface_functionality
 STM: es-E-interface-conditional
 STM: es-E-interface-conditional2
 STM: es-E-interface-conditional-subtype1
 STM: es-E-interface-conditional-subtype2
 STM: es-causle-interface-retraction
 STM: es-fix_wf2
 STM: es-fix_property
 STM: es-fix-equal
 STM: es-fix-step
 STM: es-fix-connected
 STM: es-fix-sqeual
 STM: es-fix-equal-E-interface
 STM: fun-connected-causle
 STM: loc-on-path-decomp
 STM: es-fix-causle

STM: es-fix-causal

STM: es-is-interface-image

STM: es-E-interface-image

STM: es-E-interface-predicate

ABS: $\text{es_E_interface_predicate}\{\text{es_E_interface_predicate_compseq_tag_def:}\text{ObjectId}\}$
 $(I; es)$

es_E_interface_predicate_compseq_tag_def

ABS: $X(e)$ **es-interface-val**

STM: es-interface-val_wf

STM: es-interface-val_wf2

ABS: $X(L)$ **es-interface-vals**

STM: es-interface-vals_wf

STM: es-interface-vals-append

STM: es-interface-image-val

STM: es-interface-extensionality

STM: es-interface-image-trivial

STM: es-interface-val-conditional

STM: es-interface-val-disjoint

ABS: $(I|p)$ **es-interface-restrict**

STM: es-interface-restrict_wf

ABS: $(I| \neg p)$ **es-interface-co-restrict**

STM: es-interface-co-restrict_wf

STM: es-is-interface-restrict

STM: es-is-interface-restrict-guard

STM: es-is-interface-restrict2

STM: es-is-interface-co-restrict

STM: es-interface-val-restrict
 STM: es-interface-val-restrict-sq
 STM: es-interface-val-co-restrict
 STM: es-interface-restrict-trivial
 STM: es-interface-restrict-idempotent
 STM: es-E-interface-restrict
 STM: es-E-interface-co-restrict
 ABS: $X \cap Y = 0$ **es-interface-disjoint**
 STM: es-interface-disjoint_wf
 STM: es-interface-restrict-disjoint
 STM: es-interface-restrict-conditional
 ABS: $X|a.P(a)$ **es-interface-filter**
 STM: es-interface-filter_wf
 STM: es-is-interface-filter
 STM: es-interface-filter-val
 STM: es-is-interface-in-port
 STM: es-is-interface-trigger
 STM: es-is-interface-triggers
 STM: es-is-interface-triggers2
 STM: es-triggers-conditional
 STM: es-is-interface-p-first
 STM: es-E-interface-p-first
 STM: es-triggers-p-first
 STM: es-in-port-val
 STM: es-trigger-val
 STM: es-triggers-val
 STM: es-in-port-receives

ABS: X is local **es-interface-local**
 STM: es-interface-local_wf
 ABS: X is finite **es-interface-finite**
 STM: es-interface-finite_wf
 STM: es-interface-finite-implies
 ABS: es-interface-history($es;X;e$) **es-interface-history**
 STM: es-interface-history_wf
 STM: es-interface-history-first
 STM: es-interface-history-pred
 STM: es-interface-history-iseg
 STM: member-es-interface-history
 STM: nonempty-es-interface-history
 STM: es-interface-from-decidable
 ABS: es-p-local-pred($es;P$) **es-p-local-pred**
 STM: es-p-local-pred_wf
 ABS: es-p-le-pred($es;P$) **es-p-le-pred**
 STM: es-p-le-pred_wf
 STM: decidable__es-p-local-pred
 STM: decidable__es-p-le-pred
 STM: decidable__exists-es-p-local-pred
 STM: decidable__exists-es-p-le-pred
 STM: es-interface-local-pred
 STM: es-interface-le-pred
 STM: es-interface-local-pred-bool
 STM: es-interface-le-pred-bool
 ABS: last(P) **es-local-pred**
 STM: es-local-pred_wf

STM: es-local-pred-property
 ABS: es-local-le-pred $\{i:l\}(es;P)$ **es-local-le-pred**
 STM: es-local-le-pred_wf
 STM: es-local-le-pred-property
 ABS: prior(X) **es-prior-interface**
 STM: es-prior-interface_wf
 ABS: le(X) **es-le-interface**
 STM: es-le-interface_wf
 STM: es-is-prior-interface
 STM: es-is-prior-interface-pred
 STM: es-is-le-interface
 STM: es-is-le-interface-iff
 STM: es-prior-interface-val
 STM: es-le-interface-val
 STM: es-le-interface-val-cases
 STM: es-prior-interface-val-pred
 STM: es-prior-interface-locl
 STM: es-prior-interface-causl
 STM: es-le-prior-interface-val
 STM: es-prior-interface-val-locl
 STM: es-le-interface-le
 STM: es-le-interface-causle
 STM: es-interface-history-prior
 ABS: prior-state($f;base;X;e$) **es-local-prior-state**
 STM: es-local-prior-state_wf
 ABS: local-state($f;base;X;e$) **es-interface-local-state**
 STM: es-interface-local-state_wf

STM: es-interface-local-state-prior
 STM: es-interface-local-state-cases
 ABS: $\text{es-prior-interface-vals}(es; X; e)$ **es-prior-interface-vals**
 STM: es-prior-interface-vals_wf
 STM: es-prior-interface-vals-property
 STM: local-prior-state-accumulate
 ABS: $\Sigma \leq_e(X)$ **es-interface-sum**
 STM: es-interface-sum_wf
 STM: es-interface-sum-cases
 STM: es-interface-sum-le-interface
 ABS: $\text{prior-}f\text{-fixedpoints}(e)$ **es-prior-fixedpoints**
 STM: es-prior-fixedpoints_wf
 STM: es-prior-fixedpoints-fix
 STM: member-es-fix-prior-fixedpoints
 STM: es-fix-last-prior-fixedpoints
 STM: es-prior-fixedpoints-non-null
 STM: es-prior-fixedpoints-cause
 STM: es-prior-fixedpoints-iseg
 STM: es-prior-fixedpoints-no_repeats
 STM: es-prior-fixedpoints-fixed
 STM: es-prior-fixedpoints-unequal
 ABS: $\text{ComponentSpec}(A; B)$ **es-component**
 STM: es-component_wf
 ABS: $\text{es-decl}(es; ds; da)$ **es-decl**
 STM: es-decl_wf
 ABS: $[P? \ f : g]$ **conditional**
 STM: conditional_wf

STM: conditional_wf2

STM: conditional-idempotent

STM: conditional-iffthenelse

STM: conditional-apply

STM: conditional_wf-interface

STM: conditional_wf-interface2

ABS: $Q \leftarrow == f == P$ **weak-antecedent-function**

STM: weak-antecedent-function_wf

STM: weak-antecedent-function-property

STM: weak-antecedent-function_functionality_wrt_pred_equiv

STM: weak-antecedent-functions-compose

STM: weak-antecedent-conditional

ABS: $Q \leftarrow \leftarrow = f == P$ **weak-antecedent-surjection**

STM: weak-antecedent-surjection_wf

STM: weak-antecedent-surjection-property

STM: weak-antecedent-surjection_functionality_wrt_pred_equiv

STM: weak-antecedent-surjections-compose

STM: weak-antecedent-surjection-conditional

STM: weak-antecedent-surjection-conditional2

ABS: f is Q - R -pre-preserving on P **Q-R-pre-preserving**

STM: Q-R-pre-preserving_wf

STM: Q-R-pre-preserving_functionality_wrt_implies

STM: Q-R-pre-preserving-rewrite-test

STM: Q-R-pre-preserving-compose

STM: Q-R-pre-preserving-1-1

STM: Q-R-pre-preserving-conditional

STM: sender-le-pre-preserving

ABS: f is R -pre-preserving on P **rel-pre-preserving**
 STM: rel-pre-preserving_wf
 STM: rel-pre-preserving-compose
 ABS: f is locl-pre-preserving on P **locl-pre-preserving**
 STM: locl-pre-preserving_wf
 STM: locl-pre-preserving-compose
 STM: locl-pre-preserving-1-1
 ABS: g glues $Ia:Qa \dashrightarrow Ib:Rb$ **Q-R-glues**
 STM: Q-R-glues_wf
 STM: Q-R-glues-property
 STM: Q-R-glues_functionality
 STM: Q-R-glues-empty
 STM: Q-Q-glues-to-self-image
 STM: Q-Q-glues-to-self
 STM: inject-composes
 STM: Q-R-glues-composes
 STM: Q-R-glues-composes2
 STM: Q-R-glues-conditional
 STM: Q-R-glues-conditional2
 STM: Q-R-glues-split
 STM: Q-R-glues-trivial-restrict
 STM: Q-R-glues-trivial-split
 ABS: $Ia:Qa \rightarrow -f \rightarrow Ib:Rb$ **Q-R-glued**
 STM: Q-R-glued_wf
 STM: Q-R-glued-empty
 STM: Q-Q-glued-self-image
 STM: Q-Q-glued-to-self

STM: Q-R-glued-composes
 STM: Q-R-glued-conditional
 STM: Q-R-glued-first
 ABS: g glues $Ia \dashrightarrow Ib$ **glues**
 STM: glues_wf
 STM: glues-property
 ABS: $\text{glued}(es; B; f; Ia; Ib)$ **glued**
 STM: glued_wf
 STM: glued-Q-R-glued
 STM: glued-to-self
 STM: glue-composes
 STM: glued-composes
 STM: glued-composes-simple
 STM: glued-first
 STM: sender-glues-trigger
 STM: sender-glues-triggers
 STM: sender-glues-triggers2
 STM: sender-frame-glues-triggers
 ABS: $\text{sender-glues-triggers-p}(es; A; l; tg; ds; conds)$ **sender-glues-triggers-p**
 STM: sender-glues-triggers-p_wf
 ABS: $\text{triggers-glued-p}(es; A; l; tg; ds; conds)$ **triggers-glued-p**
 STM: triggers-glued-p_wf
 STM: sender-glues-implies-triggers-glued
 STM: causal-p-predecessor
 ABS: $\text{retrace}(es; Q; X)$ **retrace**
 STM: retrace_wf
 ABS: $\text{retracer}(p)$ **retracer**

STM: retracer_wf

ABS: $\text{state-machine-spec}\{i:l\}(es;C;R;F;I;O)$ **state-machine-spec**

STM: state-machine-spec_wf

DIR: abstract chain replication

DIR: chain replication