

## ESAxioms\_wf<sup>0,22</sup>

$\forall E:\text{Type}_i, T, V:(\text{Id} \rightarrow \text{Id} \rightarrow \text{Type}_i), M:(\text{IdLnk} \rightarrow \text{Id} \rightarrow \text{Type}_i), loc:(E \rightarrow \text{Id}), kind:(E \rightarrow \text{Knd}),$   
 $val:(e:E \rightarrow \text{eventtype}(kind;loc;V;M;e)), when, after:(x:\text{Id} \rightarrow e:E \rightarrow T(loc(e),x)),$   
 $sends:(l:\text{IdLnk} \rightarrow E \rightarrow (\text{Msg\_sub}(l;M) \text{ List})), sender:(\{e:E \mid \text{isrcv}(kind(e))\} \rightarrow E),$   
 $index:(e:\{e:E \mid \text{isrcv}(kind(e))\} \rightarrow \mathbb{N}_{<\parallel sends(\text{lnk}(kind(e)),sender(e))\parallel}), first:(E \rightarrow \mathbb{B}),$   
 $pred:(\{e':E \mid \neg first(e')\} \rightarrow E), causl:(E \rightarrow E \rightarrow \text{Prop}_i).$

ESAxioms{i:l}

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

$\in \text{Prop}_i$