

es-pred-causl^{11,40}

$\forall the_es: \text{event_system}\{i:l\}, j: \text{es-E}(the_es).$

$(\neg(\uparrow \text{es-first}(the_es; j))) \Rightarrow \text{es-causl}(the_es; \text{es-pred}(the_es; j); j)$