

## chain-consistent-continuity<sup>13,45</sup>

$\forall es:ES, Cmd:Type, In:AbsInterface(Cmd), isupdate:(Cmd \rightarrow \mathbb{B}), Sys, Out:AbsInterface(Top).$   
 $(E(In) \subseteq_r E(Sys))$   
 $\Rightarrow (\forall f:sys\text{-antecedent}(es;Sys).$   
     $(\forall e:E(In). f(e) = e \in E)$   
     $\Rightarrow (\forall chain:(E(Sys) \rightarrow (Id\ List)).$   
         $chain\text{-consistent}(f;chain)$   
         $\Rightarrow (\forall x, y:E(Sys).$   
             $x \text{ is } f^*(y)$   
             $\Rightarrow (\forall e':E(In).$   
                 $(\uparrow(isupdate(In(e'))))$   
                 $\Rightarrow loc(x) \ll loc(e')$   
                 $\Rightarrow loc(e') \ll = loc(y)$   
                 $\Rightarrow (\exists e:E(Sys)$   
                     $(loc(e) = loc(e') \in Id$   
                     $\& (\neg(loc(f(e)) = loc(e) \in Id))$   
                     $\& e \text{ is } f^*(y)$   
                     $\& x \text{ is } f^*(e))))))$