

chain-consistent-monotone-lemma0^{13,45}

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