

chain-path-ordered-same-loc2^{13,45}

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