

sys-order^{13,45}

sys-order($es; Sys; f$)
 $\equiv_{\text{def}} \forall a_1, b_1: \mathbf{E}(Sys).$
 a_1 is $f^*(b_1)$
 $\Rightarrow (\forall a_2, b_2: \mathbf{E}(Sys).$
 a_2 is $f^*(b_2)$
 $\Rightarrow (a_1 < \text{loc } a_2)$
 $\Rightarrow (\neg a_1 \text{ is } f^*(a_2))$
 $\Rightarrow (\text{loc}(b_1) = \text{loc}(b_2))$
 $\Rightarrow (b_1 < \text{loc } b_2))$

clarification:

sys-order($es; Sys; f$)
 $\equiv_{\text{def}} \forall a_1: \text{es-E-interface}(es; Sys), b_1: \text{es-E-interface}(es; Sys).$
 fun-connected(es-E-interface($es; Sys; f; b_1; a_1$))
 $\Rightarrow (\forall a_2: \text{es-E-interface}(es; Sys), b_2: \text{es-E-interface}(es; Sys).$
 fun-connected(es-E-interface($es; Sys; f; b_2; a_2$))
 $\Rightarrow \text{es-locl}(es; a_1; a_2)$
 $\Rightarrow (\neg \text{fun-connected}(es-E-interface($es; Sys; f; a_2; a_1$)))$
 $\Rightarrow (\text{es-loc}(es; b_1) = \text{es-loc}(es; b_2) \in \text{Id})$
 $\Rightarrow \text{es-locl}(es; b_1; b_2))$