

cr-fails-before^{13,45}

$\text{cr-fails-before}(es; Sys; chain; x; y) \equiv_{\text{def}} \exists e: E(Sys). ((y \in chain(e)) \ \& \ (\neg(x \in chain(e))))$

clarification:

$\text{cr-fails-before}(es; Sys; chain; x; y)$
 $\equiv_{\text{def}} \exists e: \text{es-E-interface}(es; Sys). ((y \in chain(e) \in \text{Id}) \ \& \ (\neg(x \in chain(e) \in \text{Id})))$