

es-independent^{0,22}

es-independent($es; i; k; x$)
 $\equiv_{\text{def}} \forall s_1, s_2: (x: \text{Id} \rightarrow \text{vartype}(i; x)).$
 $s_1 \equiv s_2 \text{ mod } x@i$
 $\Rightarrow (\forall v: \text{kindtype}(i; k).$
 $\text{Trans}(i)(k, v, s_1) \equiv \text{Trans}(i)(k, v, s_2) \text{ mod } x@i \ \& \ \text{Send}(i)(k, v, s_1) = \text{Send}(i)(k, v, s_2))$
 $\ \& \ (\text{islocal}(k) \Rightarrow \text{Choose}(i)(\text{act}(k), s_1) = \text{Choose}(i)(\text{act}(k), s_2))$

clarification:

es-independent($es; i; k; x$)
 $\equiv_{\text{def}} \forall s_1: (x: \text{Id} \rightarrow \text{es-vartype}(es; i; x)), s_2: (x: \text{Id} \rightarrow \text{es-vartype}(es; i; x)).$
 es-x-equiv($es; i; x; s_1; s_2$)
 $\Rightarrow (\forall v: \text{es-kindtype}(es; i; k).$
 es-x-equiv($es; i; x; \text{es-trans}(es; i)(k, v, s_1); \text{es-trans}(es; i)(k, v, s_2)$)
 $\ \& \ \text{es-send}(es; i)(k, v, s_1) = \text{es-send}(es; i)(k, v, s_2) \in \text{es-Msg}(es) \text{ List}$)
 $\ \& \ (\text{islocal}(k)$
 $\Rightarrow \text{es-choose}(es; i)(\text{act}(k), s_1)$
 $=$
 $\text{es-choose}(es; i)(\text{act}(k), s_2)$
 $\in \text{es-kindtype}(es; i; k) + \text{Unit}$)