

es-sends-iff^{0,22}

with decls ds $dasends$ on l from e include $f(e)$ and only these for tags in tgs

$$\begin{aligned}
&\equiv_{\text{def}} (\forall e:\mathbf{E}. \\
&\quad \text{isrcv}(e) \\
&\quad \Rightarrow \text{lnk}(e) = l \\
&\quad \Rightarrow (\exists e':\mathbf{E}. \text{isrcv}(e') \ \& \ \text{lnk}(e') = l \ \& \ (\text{tag}(e') \in tgs) \ \& \ \text{sender}(e') = \text{sender}(e)) \\
&\quad \Rightarrow (\text{tag}(e) \in tgs)) \\
&\quad \& \ (\forall e':\mathbf{E}. \\
&\quad \quad \text{isrcv}(e') \Rightarrow \text{lnk}(e') = l \Rightarrow (\text{tag}(e') \in tgs) \Rightarrow \text{valtype}(e') \subseteq \rho \ da(\text{kind}(e'))? \text{Void}) \\
&\quad \& \ (\forall x:\text{Id}. \text{vartype}(\text{source}(l);x) \subseteq \rho \ ds(x)? \text{Top}) \\
&\quad \& \ \forall e@\text{source}(l). \\
&\quad \quad \forall i:\mathbb{N}_{<\|f(e)\|}. \\
&\quad \quad \exists e':\mathbf{E}. \text{isrcv}(e') \ \& \ \text{lnk}(e') = l \ \& \ (\text{tag}(e') \in tgs) \ \& \ \text{sender}(e') = e \ \& \ \text{index}(e') = i \\
&\quad \quad \& \ (\forall e':\mathbf{E}. \\
&\quad \quad \quad \text{isrcv}(e') \\
&\quad \quad \quad \Rightarrow \text{lnk}(e') = l \\
&\quad \quad \quad \Rightarrow (\text{tag}(e') \in tgs) \\
&\quad \quad \quad \Rightarrow \text{index}(e') < \|f(\text{sender}(e'))\| \ \& \ \langle \text{tag}(e'), \text{val}(e') \rangle = f(\text{sender}(e'))[\text{index}(e')])
\end{aligned}$$

clarification:

es-sends-iff($es;l;tgs;da;ds;e.f(e)$)

$$\begin{aligned}
&\equiv_{\text{def}} (\forall e:\text{es-E}(es). \\
&\quad \text{es-isrcv}(es; e) \\
&\quad \Rightarrow \text{es-lnk}(es; e) = l \in \text{IdLnk} \\
&\quad \Rightarrow (\exists e':\text{es-E}(es). \\
&\quad \quad \text{es-isrcv}(es; e') \\
&\quad \quad \& \ \text{es-lnk}(es; e') = l \in \text{IdLnk} \\
&\quad \quad \& \ (\text{es-tag}(es; e') \in tgs \in \text{Id}) \\
&\quad \quad \& \ \text{es-sender}(es; e') = \text{es-sender}(es; e) \in \text{es-E}(es)) \\
&\quad \Rightarrow (\text{es-tag}(es; e) \in tgs \in \text{Id})) \\
&\quad \& \ (\forall e':\text{es-E}(es). \\
&\quad \quad \text{es-isrcv}(es; e') \\
&\quad \quad \Rightarrow \text{es-lnk}(es; e') = l \in \text{IdLnk} \\
&\quad \quad \Rightarrow (\text{es-tag}(es; e') \in tgs \in \text{Id}) \\
&\quad \quad \Rightarrow \text{es-valtype}(es; e') \subseteq \rho \ \text{fpf-cap}(da;\text{KindDeq};\text{es-kind}(es; e'); \text{Void})) \\
&\quad \& \ (\forall x:\text{Id}. \text{es-vartype}(es; \text{source}(l); x) \subseteq \rho \ \text{fpf-cap}(ds;\text{IdDeq};x; \text{Top})) \\
&\quad \& \ \text{alle-at}(es;\text{source}(l);e.\forall i:\{0..\|f(e)\|^{-}\}). \\
&\quad \quad \exists e':\text{es-E}(es). \\
&\quad \quad \text{es-isrcv}(es; e') \\
&\quad \quad \& \ \text{es-lnk}(es; e') = l \in \text{IdLnk} \\
&\quad \quad \& \ (\text{es-tag}(es; e') \in tgs \in \text{Id}) \\
&\quad \quad \& \ \text{es-sender}(es; e') = e \in \text{es-E}(es)
\end{aligned}$$

$$\begin{aligned}
& \& \text{es-index}(es; e') = i \in \mathbb{Z}) \\
& \& (\forall e': \text{es-E}(es). \\
& \quad \text{es-isrcv}(es; e') \\
& \quad \Rightarrow \text{es-lnk}(es; e') = l \in \text{IdLnk} \\
& \quad \Rightarrow (\text{es-tag}(es; e') \in \text{tgs} \in \text{Id}) \\
& \quad \Rightarrow \text{es-index}(es; e') < \|f(\text{es-sender}(es; e'))\| \\
& \quad \quad \& \langle \text{es-tag}(es; e'), \text{es-val}(es; e') \rangle \\
& \quad = \\
& \quad f(\text{es-sender}(es; e'))[\text{es-index}(es; e')] \\
& \quad \in \text{tg:Id} \times \text{fpf-cap}(da; \text{KindDeq}; \text{rcv}(l, \text{tg}); \text{Void})
\end{aligned}$$