

conditional-send1-p^{11,40}

$k(v:B)$ sends

$f(x:A,v)$ on

l tagged with $tg:T$

provided $c(x,v)$

$$\begin{aligned}
&\equiv_{\text{def}} ((\text{vartype}(\text{source}(l);x) \subseteq_r A) \\
&\quad \& (\forall e:\mathbb{E}. (\text{loc}(e) = \text{source}(l)) \Rightarrow (\text{kind}(e) = k) \Rightarrow (\text{valtype}(e) \subseteq_r B)) \\
&\quad \& (\forall e:\mathbb{E}. (\text{kind}(e) = \text{rcv}(l,tg)) \Rightarrow (\text{valtype}(e) \subseteq_r T))) \\
&\quad c \wedge (\forall e:\mathbb{E}. \\
&\quad \quad (\text{loc}(e) = \text{source}(l)) \\
&\quad \quad \Rightarrow (\text{kind}(e) = k) \\
&\quad \quad \Rightarrow (((\uparrow(c((x \text{ when } e), \text{val}(e)))) \\
&\quad \quad \quad \Rightarrow (\exists e':\mathbb{E} \\
&\quad \quad \quad \quad ((\text{kind}(e') = \text{rcv}(l,tg)) \\
&\quad \quad \quad \quad c \wedge (\text{sender}(e') = e \\
&\quad \quad \quad \quad \quad \& (\forall e'':\mathbb{E}. \\
&\quad \quad \quad \quad \quad \quad (\text{kind}(e'') = \text{rcv}(l,tg)) \Rightarrow (\text{sender}(e'') = e) \Rightarrow (e'' = e')) \\
&\quad \quad \quad \quad \quad \quad \& \text{val}(e') = f((x \text{ when } e), \text{val}(e)))))) \\
&\quad \quad \& ((\neg(\uparrow(c((x \text{ when } e), \text{val}(e)))) \\
&\quad \quad \quad \Rightarrow (\neg(\exists e':\mathbb{E}. ((\text{kind}(e') = \text{rcv}(l,tg)) c \wedge (\text{sender}(e') = e))))))
\end{aligned}$$

clarification:

conditional-send1-p($es;x;A;k;B;l;tg;T;c;f$)

$$\begin{aligned}
&\equiv_{\text{def}} ((\text{es-vartype}(es; \text{source}(l); x) \subseteq_r A) \\
&\quad \& (\forall e:\text{es-E}(es). \\
&\quad \quad (\text{es-loc}(es; e) = \text{source}(l) \in \text{Id}) \\
&\quad \quad \Rightarrow (\text{es-kind}(es; e) = k \in \text{Knd}) \\
&\quad \quad \Rightarrow (\text{es-valtype}(es; e) \subseteq_r B)) \\
&\quad \& (\forall e:\text{es-E}(es). (\text{es-kind}(es; e) = \text{rcv}(l,tg) \in \text{Knd}) \Rightarrow (\text{es-valtype}(es; e) \subseteq_r T))) \\
&\quad c \wedge (\forall e:\text{es-E}(es). \\
&\quad \quad (\text{es-loc}(es; e) = \text{source}(l) \in \text{Id}) \\
&\quad \quad \Rightarrow (\text{es-kind}(es; e) = k \in \text{Knd}) \\
&\quad \quad \Rightarrow (((\uparrow(c(\text{es-when}(es; x; e), \text{es-val}(es; e)))) \\
&\quad \quad \quad \Rightarrow (\exists e':\text{es-E}(es) \\
&\quad \quad \quad \quad ((\text{es-kind}(es; e') = \text{rcv}(l,tg) \in \text{Knd}) \\
&\quad \quad \quad \quad c \wedge (\text{es-sender}(es; e') = e \in \text{es-E}(es) \\
&\quad \quad \quad \quad \quad \& (\forall e'':\text{es-E}(es). \\
&\quad \quad \quad \quad \quad \quad (\text{es-kind}(es; e'') = \text{rcv}(l,tg) \in \text{Knd}) \\
&\quad \quad \quad \quad \quad \quad \Rightarrow (\text{es-sender}(es; e'') = e \in \text{es-E}(es)) \\
&\quad \quad \quad \quad \quad \quad \Rightarrow (e'' = e' \in \text{es-E}(es))) \\
&\quad \quad \quad \quad \quad \quad \& \text{es-val}(es; e') = f(\text{es-when}(es; x; e), \text{es-val}(es; e)) \in T)))) \\
&\quad \quad \& ((\neg(\uparrow(c(\text{es-when}(es; x; e), \text{es-val}(es; e))))
\end{aligned}$$

$$\Rightarrow (\neg(\exists e': \text{es-E}(es) \\
((\text{es-kind}(es; e') = \text{rcv}(l, tg) \in \text{Knd}) \\
c \wedge (\text{es-sender}(es; e') = e \in \text{es-E}(es))))))$$