

## send-once-p<sup>0,22</sup>

locl( $a$ ) sends  $[tg, f\{A \rightarrow T\}(x)]$  on link  $l$  once

$$\begin{aligned} \equiv_{\text{def}} & \text{vartype}(\text{source}(l); x) \subseteq \rho A \ \& \ (\forall e:\mathbb{E}. \text{kind}(e) = \text{rcv}(l, tg) \Rightarrow \text{valtype}(e) \subseteq \rho T) \\ & \ \& \ (\exists e:\mathbb{E}. \\ & \quad \text{kind}(e) = \text{rcv}(l, tg) \\ & \quad \ \& \ \text{val}(e) = f(x \text{ when sender}(e)) \\ & \quad \ \& \ \text{kind}(\text{sender}(e)) = \text{locl}(a) \\ & \quad \ \& \ (\forall e':\mathbb{E}. \text{kind}(e') = \text{rcv}(l, tg) \Rightarrow \text{kind}(\text{sender}(e')) = \text{locl}(a) \Rightarrow e' = e)) \end{aligned}$$

*clarification:*

send-once-p( $es; T; A; a; l; tg; f; x$ )

$$\begin{aligned} \equiv_{\text{def}} & \text{es-vartype}(es; \text{source}(l); x) \subseteq \rho A \\ & \ \& \ (\forall e:\text{es-E}(es). \text{es-kind}(es; e) = \text{rcv}(l, tg) \in \text{Knd} \Rightarrow \text{es-valtype}(es; e) \subseteq \rho T) \\ & \ \& \ (\exists e:\text{es-E}(es). \\ & \quad \text{es-kind}(es; e) = \text{rcv}(l, tg) \in \text{Knd} \\ & \quad \ \& \ \text{es-val}(es; e) = f(\text{es-when}(es; x; \text{es-sender}(es; e))) \in T \\ & \quad \ \& \ \text{es-kind}(es; \text{es-sender}(es; e)) = \text{locl}(a) \in \text{Knd} \\ & \quad \ \& \ (\forall e':\text{es-E}(es). \\ & \quad \quad \text{es-kind}(es; e') = \text{rcv}(l, tg) \in \text{Knd} \\ & \quad \quad \Rightarrow \text{es-kind}(es; \text{es-sender}(es; e')) = \text{locl}(a) \in \text{Knd} \\ & \quad \quad \Rightarrow e' = e \in \text{es-E}(es))) \end{aligned}$$