

ma-send^{0,22}

$$\begin{aligned} & M.\text{send}(k;l;s;v;ms;i) \\ \equiv_{\text{def}} & L \text{ !} = \text{1of}(\text{2of}(\text{2of}(\text{2of}(\text{2of}(\text{2of}(M))))))(\langle k, l \rangle) \\ & \Rightarrow \\ & \quad ms \\ & = \\ & \quad \text{if source}(l) = i \rightarrow \text{concat}(\text{map}(\lambda \text{tgf}.\text{map}(\lambda x.\langle \text{1of}(\text{tgf}), x \rangle; \text{2of}(\text{tgf})(s,v)); L)) \text{ else nil fi} \end{aligned}$$

clarification:

$$\begin{aligned} & M.\text{send}(k;l;s;v;ms;i) \\ \equiv_{\text{def}} & \text{fpf-val}(\text{product-deq}(\text{Knd}; \text{IdLnk}; \text{KindDeq}; \text{IdLnkDeq}); \\ & \quad \text{1of}(\text{2of}(\text{2of}(\text{2of}(\text{2of}(\text{2of}(M)))))); \\ & \quad \langle k, l \rangle; \\ & \quad k, L.(ms \\ & \quad = \\ & \quad \quad \text{if source}(l) = i \rightarrow \text{concat}(\text{map}(\lambda \text{tgf}.\text{map}(\lambda x.\langle \text{1of}(\text{tgf}), x \rangle; \text{2of}(\text{tgf})(s,v)); L)) \\ & \quad \quad \text{else nil fi} \\ & \quad \in (tg:\text{Id} \times \text{if source}(l) = i \rightarrow M.\text{da}(\text{rcv}(l, tg)) \text{ else Top fi List})) \end{aligned}$$