

es-responsive^{0,22}

$$\begin{aligned} & \text{es-responsive}(es; l_1; tg_1; l_2; tg_2) \\ \equiv_{\text{def}} & (\forall e = \text{rcv}(l_1, tg_1). \\ & \quad \exists e' = \text{rcv}(l_2, tg_2). \\ & \quad e \leq \text{sender}(e') \\ & \quad \& (\forall e_2 = \text{rcv}(l_1, tg_1). (e < \text{loc } e_2) \Rightarrow (\text{sender}(e') < \text{loc } e_2)) \\ & \quad \& (\forall e'' = \text{rcv}(l_2, tg_2). \text{sender}(e'') = \text{sender}(e') \Rightarrow e'' = e')) \\ & \quad \& (\forall e' = \text{rcv}(l_2, tg_2). \\ & \quad \quad \exists e = \text{rcv}(l_1, tg_1). \\ & \quad \quad e \leq \text{sender}(e') \\ & \quad \quad \& (\forall e'' = \text{rcv}(l_2, tg_2). (\text{sender}(e'') < \text{loc } \text{sender}(e')) \Rightarrow (\text{sender}(e'') < \text{loc } e))) \end{aligned}$$

clarification:

$$\begin{aligned} & \text{es-responsive}(es; l_1; tg_1; l_2; tg_2) \\ \equiv_{\text{def}} & \text{alle-rcv}(es; l_1; tg_1; e. \text{existse-rcv}(es; l_2; tg_2; e'. \text{es-le}(es; e; \text{es-sender}(es; e')) \\ & \quad \& \text{alle-rcv}(es; l_1; tg_1; e_2. \text{es-locl}(es; e; e_2) \Rightarrow \text{es-locl}(es; \text{es-sender}(es; e'); e_2)) \\ & \quad \& \text{alle-rcv}(es; l_2; tg_2; e''. \text{es-sender}(es; e'') = \text{es-sender}(es; e') \in \text{es-E}(es) \\ & \quad \quad \Rightarrow e'' = e' \in \text{es-E}(es))) \\ & \quad \& \text{alle-rcv}(es; l_2; tg_2; e'. \text{existse-rcv}(es; l_1; tg_1; e. \text{es-le}(es; e; \text{es-sender}(es; e')) \\ & \quad \quad \& \text{alle-rcv}(es; l_2; tg_2; e''. \text{es-locl}(es; \text{es-sender}(es; e''); \text{es-sender}(es; e')) \\ & \quad \quad \quad \Rightarrow \text{es-locl}(es; \text{es-sender}(es; e''); e))) \end{aligned}$$