

es-pstar-q^{11,40}

$$\begin{aligned} & [e_1; e_2] \sim ([a, b].p(a; b)) * [a, b].q(a; b) \\ \equiv_{\text{def}} & \exists m: \mathbb{N}^+ \\ & \exists f: \text{int_seg}(0; m) \rightarrow \{e: \text{es-E}(es) \mid \text{loc}(e) = \text{loc}(e_1)\} \\ & \quad (((f(0) = e_1) \wedge \text{es-le}(es; (f(m-1)); e_2)) \\ & \quad \wedge ((\forall i: \text{int_seg}(0; (m-1)). \text{es-locl}(es; (f(i)); (f(i+1)))) \\ & \quad \wedge (\forall i: \text{int_seg}(0; (m-1)). p(f(i); \text{es-pred}(es; (f(i+1)))))) \\ & \quad \wedge q(f(m-1); e_2)) \end{aligned}$$

clarification:

$$\begin{aligned} & \text{es-pstar-q}(es; a, b.p(a; b); a, b.q(a; b); e_1; e_2) \\ \equiv_{\text{def}} & \exists m: \mathbb{N}^+ \\ & \exists f: \text{int_seg}(0; m) \rightarrow \{e: \text{es-E}(es) \mid \text{es-loc}(es; e) = \text{es-loc}(es; e_1) \in \text{Id}\} \\ & \quad (((f(0) = e_1 \in \text{es-E}(es)) \wedge \text{es-le}(es; (f(m-1)); e_2)) \\ & \quad \wedge ((\forall i: \text{int_seg}(0; (m-1)). \text{es-locl}(es; (f(i)); (f(i+1)))) \\ & \quad \wedge (\forall i: \text{int_seg}(0; (m-1)). p(f(i); \text{es-pred}(es; (f(i+1)))))) \\ & \quad \wedge q(f(m-1); e_2)) \end{aligned}$$