

es-update-iff^{11,40}

$$\begin{aligned}
& \text{es-update-iff}(es; i; x; ds; e.P(e); s.f(s)) \\
& \equiv_{\text{def}} (\forall x:\text{Id}. \text{vartype}(i; x) \subseteq_r ds(x)?\text{Top}) \\
& \quad c \wedge \forall e @ i. \\
& \quad \quad (P(e) \Rightarrow ((x \text{ after } e) = f((\text{state when } e)))) \\
& \quad \quad \& ((\neg P(e)) \Rightarrow ((x \text{ after } e) = (x \text{ when } e)))
\end{aligned}$$

clarification:

$$\begin{aligned}
& \text{es-update-iff}(es; i; x; ds; e.P(e); s.f(s)) \\
& \equiv_{\text{def}} (\forall x:\text{Id}. \text{es-vartype}(es; i; x) \subseteq_r \text{fpf-cap}(ds; \text{IdDeq}; x; \text{Top})) \\
& \quad c \wedge \text{alle-at}(es; i; e.(P(e) \\
& \quad \quad \Rightarrow (\text{es-after}(es; x; e) \\
& \quad \quad = \\
& \quad \quad \quad f(\text{es-state-when}(es; e)) \\
& \quad \quad \quad \in \text{fpf-cap}(ds; \text{IdDeq}; x; \text{Top}))) \\
& \quad \& ((\neg P(e)) \Rightarrow (\text{es-after}(es; x; e) = \text{es-when}(es; x; e) \in \text{fpf-cap}(ds; \text{IdDeq}; x; \text{Top}))))
\end{aligned}$$