

R-state-var-init-rule^{11,40}

$$\begin{aligned}
& \forall i:\text{Id}, ds:\text{fpf}(\text{Id}; x.\text{Type}), da:\text{fpf}(\text{Knd}; k.\text{Type}), x:\text{Id}, T:\text{Type}, v:T, ks:(\text{Knd List}), \\
& \quad tr:(k:\{k:\text{Knd} \mid (k \in ks)\} \rightarrow \text{decl-state}(ds) \rightarrow \text{ma-valtype}(da; k) \rightarrow T \rightarrow T). \\
& \text{fpf-compatible}(\text{Id}; x.\text{Type}; \text{id-deq}; ds; \text{fpf-single}(x; T)) \\
& \Rightarrow \text{normal-type}\{i:l\} \\
& \quad (T) \\
& \Rightarrow (\forall k:\text{Knd}. (k \in ks) \Rightarrow (\uparrow \text{isrcv}(k)) \Rightarrow (i = \text{destination}(\text{lnk}(k)))) \\
& \Rightarrow \text{normal-ds}\{i:l\} \\
& \quad (ds) \\
& \Rightarrow \text{normal-da}\{i:l\} \\
& \quad (da) \\
& \Rightarrow \text{R-realizes}\{i:l\} \\
& \quad (\text{R-state-var-init}(i; ds; da; x; T; v; ks; tr); \\
& \quad \quad es.\text{es-decls}(es; i; ds; da) \\
& \quad \Rightarrow (\text{es-dtype}(es; i; x; T) \\
& \quad \quad c \wedge \text{alle-at}(es; \\
& \quad \quad \quad i; \\
& \quad \quad \quad e.((\text{es-after}(es; x; e) \\
& \quad \quad \quad = \\
& \quad \quad \quad \text{es-trans-state-from}\{i:l\}(es; ks; tr; v; \text{es-init}(es; e); e) \\
& \quad \quad \quad \in T) \\
& \quad \quad \wedge ((\uparrow \text{es-first}(es; e)) \Rightarrow (\text{es-when}(es; x; e) = v \in T))))))
\end{aligned}$$