

R-state-var-compat^{11,40}

$$\begin{aligned} & \forall i:\text{Id}, ds:\text{fpf}(\text{Id}; x.\text{Type}), da:\text{fpf}(\text{Knd}; k.\text{Type}), x:\text{Id}, T:\text{Type}, ks:(\text{Knd List}), \\ & \quad tr:(k:\{k:\text{Knd} \mid (k \in ks)\} \rightarrow \text{decl-state}(ds) \rightarrow \text{ma-valtype}(da; k) \rightarrow T \rightarrow T). \\ & (\neg(\uparrow \text{fpf-dom}(\text{id-deq}; x; ds))) \\ \Rightarrow & (\forall A:\text{es_realizer}\{i:l\}. \\ & \quad \text{R-Feasible}\{i:l\} \\ & \quad (A) \\ \Rightarrow & (\neg(\uparrow \text{R-occurs}(A; i; x))) \\ \Rightarrow & \text{fpf-compatible}(\text{Id}; x.\text{Type}; \text{id-deq}; ds; \text{R-ds}(A; i)) \\ \Rightarrow & \text{fpf-compatible}(\text{Knd}; k.\text{Type}; \text{Kind-deq}; da; \text{R-da}(A; i)) \\ \Rightarrow & \text{L.all}(ks; \\ & \quad \text{Knd}; \\ & \quad k.(\uparrow \text{isrcv}(k)) \\ & \quad \Rightarrow \text{subtype_rel}(\text{fpf-cap}(\text{R-da}(A; \text{source}(\text{lnk}(k))); \text{Kind-deq}; k; \text{void}); \\ & \quad \quad \text{ma-valtype}(da; k))) \\ \Rightarrow & \text{L.all}(ks; \text{Knd}; k.(\uparrow \text{fpf-dom}(\text{Kind-deq}; k; da))) \\ \Rightarrow & (\forall k:\text{Knd}. (k \in ks) \Rightarrow (\neg(\uparrow \text{write-restricted}(A; i; k)))) \\ \Rightarrow & (\forall y:\text{Id}. \\ & \quad (\uparrow \text{fpf-dom}(\text{id-deq}; y; \text{fpf-join}(\text{id-deq}; ds; \text{fpf-single}(x; T)))) \\ & \quad \Rightarrow (\neg(\uparrow \text{read-restricted}(A; i; y)))) \\ \Rightarrow & \text{R-compat}\{i:l\} \\ & \quad (\text{R-state-var}(i; ds; da; x; T; ks; tr); A) \end{aligned}$$