

union-decodes-property^{11,40}

$$\begin{aligned} & \forall es:ES, C, T:\text{Type}, R_1, R_2:(C \rightarrow E \rightarrow \mathbb{P}), \text{decodes}_1:(i:C \rightarrow e:\{x:E \mid R_1(i,x)\} \rightarrow \text{state}@loc(e) \rightarrow T), \\ & \quad \text{decodes}_2:(i:C \rightarrow e:\{x:E \mid R_2(i,x)\} \rightarrow \text{state}@loc(e) \rightarrow T), \text{dec_}R_1:(i:C \rightarrow e:E \rightarrow \text{Dec}(R_1(i,e))). \\ & (\forall i:C, e:E. \neg(R_1(i,e) \ \& \ R_2(i,e))) \\ \Rightarrow & (\forall i:C, e:\{x:E \mid (R_1(i,x)) \vee (R_2(i,x))\}, st:\text{state}@loc(e). \\ & ((R_1(i,e)) \Rightarrow ([R_1 \ ? \ \text{decodes}_1 : \text{decodes}_2](i,e,st) = \text{decodes}_1(i,e,st))) \\ & \ \& \ ((R_2(i,e)) \Rightarrow ([R_1 \ ? \ \text{decodes}_1 : \text{decodes}_2](i,e,st) = \text{decodes}_2(i,e,st)))) \end{aligned}$$