

w-machine-constraint^{0,22}

w-machine-constraint(w)
 $\equiv_{\text{def}} \forall i:\text{Id}.$
let $Choose, Trans, Send = \text{w-machine}(w; i)$ in
 $\forall t:\mathbb{N}.$
 $\neg \text{isnull}(a(i; t))$
 $\Rightarrow (\lambda x.s(i; t+1).x) = Trans(\text{kind}(a(i; t)), \text{val}(a(i; t)), \lambda x.s(i; t).x)$
& $(\text{islocal}(\text{kind}(a(i; t))))$
 $\Rightarrow \text{isl}(Choose(\text{act}(\text{kind}(a(i; t))), \lambda x.s(i; t).x))$
 & $\text{val}(a(i; t)) = \text{outl}(Choose(\text{act}(\text{kind}(a(i; t))), \lambda x.s(i; t).x))$
& $m(i; t) = Send(\text{kind}(a(i; t)), \text{val}(a(i; t)), \lambda x.s(i; t).x)$

clarification:

w-machine-constraint(w)
 $\equiv_{\text{def}} \forall i:\text{Id}.$
let $Choose, Trans, Send = \text{w-machine}(w; i)$ in
 $\forall t:\mathbb{N}.$
 $\neg \text{w-isnull}(w; \text{w-a}(w; i; t))$
 $\Rightarrow (\lambda x.\text{w-s}(w; i; (t+1); x))$
= $Trans(\text{w-kind}(w; \text{w-a}(w; i; t)), \text{w-val}(w; \text{w-a}(w; i; t)), \lambda x.\text{w-s}(w; i; t; x))$
 $\in x:\text{Id} \rightarrow \text{w-vartype}(w; i; x)$
& $(\text{islocal}(\text{w-kind}(w; \text{w-a}(w; i; t))))$
 $\Rightarrow \text{isl}(Choose(\text{act}(\text{w-kind}(w; \text{w-a}(w; i; t))), \lambda x.\text{w-s}(w; i; t; x)))$
 & $\text{w-val}(w; \text{w-a}(w; i; t))$
= $\text{outl}(Choose(\text{act}(\text{w-kind}(w; \text{w-a}(w; i; t))), \lambda x.\text{w-s}(w; i; t; x)))$
 $\in \text{w-valtype}(w; i; \text{w-a}(w; i; t))$
& $\text{w-m}(w; i; t)$
= $Send(\text{w-kind}(w; \text{w-a}(w; i; t)), \text{w-val}(w; \text{w-a}(w; i; t)), \lambda x.\text{w-s}(w; i; t; x))$
 $\in \text{Msg}(w.M) \text{ List}$