fair-fifo[11,40]

FairFifo
$\equiv_{\text{def}}$ $(\forall i$:Id, t:$\mathbb{N}$, l:IdLnk. $(\neg(\text{source}(l) = i)) \Rightarrow (\text{onlnk}(l;\text{m}(i;t)) = [])$
& $(\forall i$:Id, t:$\mathbb{N}$.
$(\uparrow\text{isnull}(\text{a}(i;t))) \Rightarrow ((\forall x$:Id. $\text{s}(i;t+1).x = (\lambda q.\text{s}(i;t).x(q+1))$ & $\text{m}(i;t) = [])$
& $((\forall i$:Id, t:$\mathbb{N}$, l:IdLnk.
$(\uparrow\text{isrcv}(l;\text{a}(i;t)))$
$\Rightarrow (\text{destination}(l) = i$
& $((\|\text{queue}(l;t)\| \geq 1\ )$ c$\wedge$ $(\text{hd}(\text{queue}(l;t)) = \text{msg}(\text{a}(i;t))))))$
c$\wedge$ $((\forall l$:IdLnk, t:$\mathbb{N}$.
$\exists t'$:$\mathbb{N}$. $((t \leq t')$ & $((\uparrow\text{isrcv}(l;\text{a}(\text{destination}(l);t'))) \vee (\text{queue}(l;t') = [])))$
& w-machine-constraint(w)
& w-atom-constraint(w)
& w-discrete-constraint(w)))

clarification:

fair-fifo{i:l}
(w)
$\equiv_{\text{def}}$ $(\forall i$:Id, t:$\mathbb{N}$, l:IdLnk.
$(\neg(\text{source}(l) = i \in \text{Id})) \Rightarrow (\text{onlnk}(l;\text{w-m}(w;\ i;\ t)) = [] \in (\text{w-Msg}(w)\ \text{List})))$
& $(\forall i$:Id, t:$\mathbb{N}$.
$(\uparrow\text{w-isnull}(w;\ \text{w-a}(w;\ i;\ t)))$
$\Rightarrow ((\forall x$:Id.
$\text{w-s}(w;\ i;\ (t+1);\ x) = (\lambda q.\text{w-s}(w;\ i;\ t;\ x)(q+1)) \in \mathbb{Q} \rightarrow \text{w-vartype}(w;\ i;\ x))$
& $\text{w-m}(w;\ i;\ t) = [] \in (\text{w-Msg}(w)\ \text{List})))$
& $((\forall i$:Id, t:$\mathbb{N}$, l:IdLnk.
$(\uparrow\text{w-isrcvl}(w;\ l;\ \text{w-a}(w;\ i;\ t)))$
$\Rightarrow (\text{destination}(l) = i \in \text{Id}$
& $((\|\text{w-queue}(w;\ l;\ t)\| \geq 1\ )$
c$\wedge$ $(\text{hd}(\text{w-queue}(w;\ l;\ t)) = \text{w-msg}(w;\ \text{w-a}(w;\ i;\ t)) \in \text{w-Msg}(w)))))$
c$\wedge$ $((\forall l$:IdLnk, t:$\mathbb{N}$.
$\exists t'$:$\mathbb{N}$
$((t \leq t')$
& $((\uparrow\text{w-isrcvl}(w;\ l;\ \text{w-a}(w;\ \text{destination}(l);\ t')))$
$\vee$ $(\text{w-queue}(w;\ l;\ t') = [] \in (\text{w-Msg}(w)\ \text{List})))))$
& w-machine-constraint(w)
& w-atom-constraint{i:l}
(w)
& w-discrete-constraint(w)))

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http://www.nuprl.org/FDLcontent/p0_963683_/p69_486470_{fair-fifo}.html