MODULE *Mastership*

INSTANCE *Naturals*

INSTANCE *FiniteSets*

INSTANCE *Sequences*

INSTANCE *TLC*

An empty constant
CONSTANT *Nil*

A record of target masterships
VARIABLE *mastership*

This section models *mastership* for the configuration service.

Mastership is used primarily to track the lifecycle of individual configuration targets and react to state changes on the southbound. Each target is assigned a master from the Node set, and masters can be unset when the target disconnects.

Set node n as the master for target t

$$
\begin{aligned}
&\mathit{SetMaster}(n,\ t) \triangleq \\
&\quad \land\ \mathit{mastership}[t].\mathit{master} \neq n \\
&\quad \land\ \mathit{mastership}' = [\mathit{mastership}\ \text{EXCEPT}\ ![t].\mathit{term}\ \ = \mathit{mastership}[t].\mathit{term} + 1, \\
&\qquad\qquad\qquad\qquad\qquad\qquad\quad ![t].\mathit{master} = n]
\end{aligned}
$$

$$
\begin{aligned}
&\mathit{UnsetMaster}(t) \triangleq \\
&\quad \land\ \mathit{mastership}[t].\mathit{master} \neq \mathit{Nil} \\
&\quad \land\ \mathit{mastership}' = [\mathit{mastership}\ \text{EXCEPT}\ ![t].\mathit{master} = \mathit{Nil}]
\end{aligned}
$$