

master-antecedent^{11,40}

$$\begin{aligned}
& \text{master-antecedent}\{i:l\}(es; Cmd; Master; Config; Sys; m) \\
\equiv_{\text{def}} & (\forall e:\{e:E(Master)| \uparrow \text{cmseq?}(Master(e))\} . (m(e) < e)) \\
& \& (\forall e_1, e_2:\{e:E(Master)| \uparrow \text{cmseq?}(Master(e))\} . (m(e_1) <_{\text{loc}} m(e_2)) \Rightarrow (e_1 < e_2)) \\
& \& (\forall e:\{e:E(Master)| \uparrow \text{cmseq?}(Master(e))\} . \\
& \quad \text{let } c = \text{Config}(m(e)) \text{ in} \\
& \quad \quad (\uparrow \text{ccpred?}(c)) \\
& \quad \quad \& \text{ccpred-id}(c) = \text{cmseq-to}(Master(e)) \\
& \quad \quad \& \text{loc}(m(e)) = \text{cmseq-from}(Master(e)) \\
& \quad \quad \& \|\text{cmd-history}(m(e))\| = \text{cmseq-num}(Master(e)))
\end{aligned}$$

clarification:

$$\begin{aligned}
& \text{master-antecedent}\{i:l\} \\
& \quad (es; Cmd; Master; Config; Sys; m) \\
\equiv_{\text{def}} & (\forall e:\{e:\text{es-E-interface}(es; Master)| \uparrow \text{cmseq?}(Master(e))\} . \text{es-causl}(es; (m(e)); e)) \\
& \& (\forall e_1:\{e:\text{es-E-interface}(es; Master)| \uparrow \text{cmseq?}(Master(e))\} , \\
& \quad e_2:\{e:\text{es-E-interface}(es; Master)| \uparrow \text{cmseq?}(Master(e))\} . \\
& \quad \text{es-locl}(es; (m(e_1)); (m(e_2))) \Rightarrow \text{es-causl}(es; e_1; e_2)) \\
& \& (\forall e:\{e:\text{es-E-interface}(es; Master)| \uparrow \text{cmseq?}(Master(e))\} . \\
& \quad \text{let } c = \text{Config}(m(e)) \text{ in} \\
& \quad \quad (\uparrow \text{ccpred?}(c)) \\
& \quad \quad \& \text{ccpred-id}(c) = \text{cmseq-to}(Master(e)) \in \text{Id} \\
& \quad \quad \& \text{es-loc}(es; (m(e))) = \text{cmseq-from}(Master(e)) \in \text{Id} \\
& \quad \quad \& \|\text{cmd-history}\{i:l\} \\
& \quad \quad \quad (es; Config; Cmd; Sys; (m(e)))\| \\
& \quad \quad = \\
& \quad \quad \text{cmseq-num}(Master(e)) \\
& \quad \quad \in \mathbb{Z})
\end{aligned}$$