

t58_fsm_1

(TMSK9w1bQbg7vZ1DE5cv6LyswUmELBWrDYY)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v8_struct_0 : \iota \Rightarrow o$ be given. Let $l2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k13_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r5_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.(m2_finseq_1 X2 X0) \Rightarrow (\forall X3.((\neg v2_struct_0 X3) \wedge \\
& (l2_fsm_1 X3 X0 X1)) \Rightarrow (\forall X4.((\neg v2_struct_0 X4) \wedge (l2_fsm_1 \\
& X4 X0 X1)) \Rightarrow (\forall X5.(m1_subset_1 X5 (u1_struct_0 X4)) \Rightarrow (\forall X6. \\
& ((\neg v2_struct_0 X6) \wedge (v8_struct_0 X6) \wedge (l2_fsm_1 X6 X0 X1))) \Rightarrow (\\
& \forall X7.(m1_subset_1 X7 (u1_struct_0 X6)) \Rightarrow (((X6 = k13_fsm_1 \\
& X0 X1 X3 X4) \wedge (X5 = X7)) \Rightarrow (k4_fsm_1 X0 X1 X4 X5 X2 = k4_fsm_1 X0 X1 X6 X7 \\
& X2))))))))))
\end{aligned}
\tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\
& (\forall X2.((\neg v2_struct_0 X2) \wedge (l2_fsm_1 X2 X0 X1)) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X2)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 X2)) \Rightarrow ((r5_fsm_1 X0 X1 X2 X3 X4) \Leftrightarrow (\forall X5.(m2_finseq_1 \\
& X5 X0) \Rightarrow (k4_fsm_1 X0 X1 X2 X3 X5 = k4_fsm_1 X0 X1 X2 X4 X5))))))
\end{aligned}
\tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow \\ & (\forall X2.((\neg v2_struct_0 X2) \wedge ((v8_struct_0 X2) \wedge (l2_fsm_1 \\ & X2 X0 X1))) \Rightarrow (\forall X3.((\neg v2_struct_0 X3) \wedge ((v5_fsm_1 X3 X0 X1) \wedge \\ & ((v7_fsm_1 X3 X0 X1) \wedge (l2_fsm_1 X3 X0 X1)))) \Rightarrow (\forall X4.((\neg v2_struct_0 \\ & X4) \wedge ((v5_fsm_1 X4 X0 X1) \wedge ((v7_fsm_1 X4 X0 X1) \wedge (l2_fsm_1 X4 X0 X1)))) \Rightarrow \\ & (\forall X5.(m1_subset_1 X5 (u1_struct_0 X2)) \Rightarrow (\forall X6.(m1_subset_1 \\ & X6 (u1_struct_0 X2)) \Rightarrow (\forall X7.(m1_subset_1 X7 (u1_struct_0 \\ & X3)) \Rightarrow (\forall X8.(m1_subset_1 X8 (u1_struct_0 X3)) \Rightarrow (\neg(X7 = X5) \wedge \\ & ((X8 = X6) \wedge ((X2 = k13_fsm_1 X0 X1 X4 X3) \wedge ((\neg r5_fsm_1 X0 X1 X3 X7 X8) \wedge \\ & (r5_fsm_1 X0 X1 X2 X5 X6)))))))))))))) \end{aligned}$$