

t4_fsm_1 (TMRuw-
doW6qZQXSkyogZFUrhR9qR8BhEEFQC)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_fsm_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((\neg v2_struct_0 X1) \wedge (l1_fsm_1 X1 X0)) \wedge ((m1_subset_1 X2 (u1_struct_0 \\ & X1)) \wedge (m1_finseq_1 X3 X0)))) \Rightarrow (m2_finseq_1 (k2_fsm_1 X0 X1 X2 X3) \\ & (u1_struct_0 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2. (m2_finseq_1 X2 X0) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (\forall X4. (m1_subset_1 X4 \\ & (u1_struct_0 X1)) \Rightarrow ((r1_fsm_1 X0 X1 X2 X3 X4) \Leftrightarrow (k1_funct_1 (k2_fsm_1 \\ & X0 X1 X3 X2) (k2_nat_1 (k3_finseq_1 X2) np_1) = X4)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\
& (\forall X3.(m2_finseq_1 X3 X0) \Rightarrow (\forall X4.(m2_finseq_1 X4 (\\
& u1_struct_0 X1)) \Rightarrow ((X4 = k2_fsm_1 X0 X1 X2 X3) \Leftrightarrow ((k1_funct_1 X4 np_1 = \\
& X2) \wedge ((k3_finseq_1 X4 = k2_nat_1 (k3_finseq_1 X3) np_1) \wedge (\forall X5. \\
& (v7_ordinal1 X5) \Rightarrow (\neg(r1_xxreal_0 np_1 X5) \wedge (r1_xxreal_0 X5 (\\
& k3_finseq_1 X3)) \wedge (\forall X6.(m1_subset_1 X6 X0) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 (u1_struct_0 X1)) \Rightarrow (\forall X8.(m1_subset_1 X8 \\
& (u1_struct_0 X1)) \Rightarrow (\neg(X6 = k1_funct_1 X3 X5) \wedge ((X7 = k1_funct_1 X4 \\
& X5) \wedge ((X8 = k1_funct_1 X4 (k1_nat_1 X5 np_1)) \wedge (k1_fsm_1 X0 X1 X6 \\
& X7 = X8))))))))))))))))) \\
& \tag{4}
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m2_finseq_1 X2 X0) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 X1)) \Rightarrow ((k1_funct_1 (k2_fsm_1 X0 X1 X3 X2) (k3_finseq_1 \\
& (k2_fsm_1 X0 X1 X3 X2)) = X4) \Leftrightarrow (r1_fsm_1 X0 X1 X2 X3 X4))))))
\end{aligned}$$