# t34_fsm_3 (TMcVB-VBz7WrV4t6nQWxHwWyj8LTkWKr77Ak)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_catalan2 : \iota \Rightarrow \iota$ be given. Let $k9\_flang\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_flang\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_flang\_1 : \iota \Rightarrow \iota$ be given. Let $u2\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v3\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g1\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $u1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.k3\_catalan2\ X0 = k8\_afinsq\_1\ X0 \tag{1}$$

Assume the following.

$$\forall X0.m1\_subset\_1\ (k9\_flang\_1\ X0)\ (k1\_zfmisc\_1\ (k3\_catalan2\ X0)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ X0)))\Rightarrow(m1\_subset\_1\ (k4\_subset\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0)))\wedge((\neg v2\_struct\_0\ X2)\wedge(l2\_fsm\_3\ X2\ X0\ X1))))\Rightarrow((v3\_fsm\_3\ (k4\_fsm\_3\ X0\ X1\ X2)\ X0\ (k9\_flang\_1\ X0))\wedge(l2\_fsm\_3\ (k4\_fsm\_3\ X0\ X1\ X2)\ X0\ (k9\_flang\_1\ X0))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X1\ (k3\_catalan2\ X0))\Rightarrow(m1\_subset\_1\ (k4\_flang\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k3\_catalan2\ X0))) \tag{5}$$

Assume the following.

$$\forall X0.m1\_subset\_1\ (k2\_flang\_1\ X0)\ (k3\_catalan2\ X0) \tag{6}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0)))\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(l2\_fsm\_3\ X2\ X0\ X1))\Rightarrow(\forall X3.((v3\_fsm\_3\ X3\ X0\ (k9\_flang\_1\ X0))\wedge(l2\_fsm\_3\ X3\ X0\ (k9\_flang\_1\ X0)))\Rightarrow((X3 = k4\_fsm\_3\ X0\ X1\ X2)\Leftrightarrow((g1\_fsm\_3\ X0\ (k9\_flang\_1\ X0)\ (u1\_struct\_0\ X3)\ (u1\_rewrite3\ (k9\_flang\_1\ X0)\ X3)\ (u1\_fsm\_3\ X0\ (k9\_flang\_1\ X0)\ X3) = k2\_fsm\_3\ X0\ X1\ (g1\_fsm\_3\ X0\ X1\ (u1\_struct\_0\ X2)\ (u1\_rewrite3\ X1\ X2)\ (u1\_fsm\_3\ X0\ X1\ X2)))\wedge(u2\_fsm\_3\ X0\ (k9\_flang\_1\ X0)\ X3 = ReplSep\ (toset\ (\lambda X4 : \iota.m1\_subset\_1\ X4\ (u1\_struct\_0\ X3)))\ (\lambda X4 : \iota.\neg r1\_xboole\_0\ X4\ (u2\_fsm\_3\ X0\ X1\ X2))\ (\lambda X4 : \iota.X4)))))) \tag{7}$$

**Theorem 1**

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(l2\_fsm\_3\ X2\ X1\ (k4\_subset\_1\ (k3\_catalan2\ X1)\ (k9\_flang\_1\ X1)\ (k4\_flang\_1\ X1\ (k2\_flang\_1\ X1)))))\Rightarrow(\neg(X0 \in u2\_fsm\_3\ X1\ (k9\_flang\_1\ X1)\ (k4\_fsm\_3\ X1\ (k4\_subset\_1\ (k3\_catalan2\ X1)\ (k9\_flang\_1\ X1)\ (k4\_flang\_1\ X1\ (k2\_flang\_1\ X1)))\ X2))\wedge(r1\_xboole\_0\ X0\ (u2\_fsm\_3\ X1\ (k4\_subset\_1\ (k3\_catalan2\ X1)\ (k9\_flang\_1\ X1)\ (k4\_flang\_1\ X1\ (k2\_flang\_1\ X1)))\ X2))))$$