t21_msualg_5 (TMHKuWSMWNWAjWMqgB-mACkmGoPzc3y5U9yp)

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Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k2\_msualg\_5 : \iota \Rightarrow \iota$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_relat\_2 : \iota \Rightarrow o$ be given. Let $v8\_relat\_2 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v3\_lattices : \iota \Rightarrow o$ be given. Let $v10\_lattices : \iota \Rightarrow o$ be given. Let $l3\_lattices : \iota \Rightarrow o$ be given. Let $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_lattices : \iota \Rightarrow \iota$ be given. Let $k4\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_lattices : \iota \Rightarrow \iota$ be given. Let $k5\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(\neg v2\_struct\_0\ (k2\_msualg\_5\ X0)) \wedge ((v3\_lattices\ (k2\_msualg\_5\ X0)) \wedge ((v10\_lattices\ (k2\_msualg\_5\ X0)) \wedge (l3\_lattices\ (k2\_msualg\_5\ X0)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2\_struct\_0\ X1) \wedge ((v3\_lattices\ X1) \wedge ((v10\_lattices\ X1) \wedge (l3\_lattices\ X1)))) \Rightarrow ((X1 = k2\_msualg\_5\ X0) \Leftrightarrow ((u1\_struct\_0\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))\ (\lambda X2 : \iota.(v1\_partfun1\ X2\ X0) \wedge ((v3\_relat\_2\ X2) \wedge ((v8\_relat\_2\ X2) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0))))))\ (\lambda X2 : \iota.X2)) \wedge (\forall X2.((v1\_partfun1\ X2\ X0) \wedge ((v3\_relat\_2\ X2) \wedge ((v8\_relat\_2\ X2) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))) \Rightarrow (\forall X3.((v1\_partfun1\ X3\ X0) \wedge ((v3\_relat\_2\ X3) \wedge ((v8\_relat\_2\ X3) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)))))) \Rightarrow ((k1\_binop\_1\ (u1\_lattices\ X1)\ X2\ X3 = k4\_eqrel\_1\ X0\ X2\ X3) \wedge (k1\_binop\_1\ (u2\_lattices\ X1)\ X2\ X3 = k5\_eqrel\_1\ X0\ X2\ X3)))))) \tag{2}$$

Theorem 1

$$\forall X0.\forall X1.(X0 \in u1\_struct\_0\ (k2\_msualg\_5\ X1)) \Leftrightarrow ((v1\_partfun1\ X0\ X1) \wedge ((v3\_relat\_2\ X0) \wedge ((v8\_relat\_2\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ X1))))))$$