t12_incproj (TMSqJfcTLncKHSD4yRJaQGdkKYeJEv4JndJ)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_collsp : \iota \Rightarrow o$ be given. Let $v3\_collsp : \iota \Rightarrow o$ be given. Let $v4\_collsp : \iota \Rightarrow o$ be given. Let $v2\_anproj\_2 : \iota \Rightarrow o$ be given. Let $v3\_anproj\_2 : \iota \Rightarrow o$ be given. Let $l1\_collsp : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u2\_incsp\_1 : \iota \Rightarrow \iota$ be given. Let $k3\_incproj : \iota \Rightarrow \iota$ be given. Let $u1\_incsp\_1 : \iota \Rightarrow \iota$ be given. Let $r1\_incsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_incproj : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_incproj : \iota \Rightarrow \iota$ be given. Let $u3\_incsp\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_incproj : \iota \Rightarrow \iota$ be given. Let $m2\_collsp : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_collsp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_collsp\ X0) \wedge ((v3\_collsp\ X0) \wedge ((v4\_collsp\ X0) \wedge (l1\_collsp\ X0))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_incsp\_1\ (k3\_incproj\ X0))) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u2\_incsp\_1\ (k3\_incproj\ X0))) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_incproj\ X4\ X0) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow ((r1\_incsp\_1\ (k3\_incproj\ X0)\ X1\ X2) \Leftrightarrow (X3 \in X4))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_collsp\ X0) \wedge ((v3\_collsp\ X0) \wedge ((v4\_collsp\ X0) \wedge (l1\_collsp\ X0))))) \Rightarrow (\forall X1.(m1\_incproj\ X1\ X0) \Leftrightarrow (m1\_subset\_1\ X1\ (u2\_incsp\_1\ (k3\_incproj\ X0)))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_collsp\ X0) \wedge ((v3\_collsp\ X0) \wedge (l1\_collsp\ X0)))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((r1\_collsp\ X0\ X1\ X2\ X3) \Rightarrow ((r1\_collsp\ X0\ X2\ X1\ X3) \wedge (r1\_collsp\ X0\ X1\ X3\ X2)))))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge(l1\_collsp\ X0)))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Leftrightarrow(m1\_subset\_1\ X1\ (u1\_incsp\_1\ (k3\_incproj\ X0)))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge(l1\_collsp\ X0)))))\Rightarrow((u1\_incsp\_1\ (k3\_incproj\ X0) = u1\_struct\_0\ X0)\wedge((u2\_incsp\_1\ (k3\_incproj\ X0) = k1\_incproj\ X0)\wedge(u3\_incsp\_1\ (k3\_incproj\ X0) = k2\_incproj\ X0))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge(l1\_collsp\ X0)))))\Rightarrow(\forall X1.(m2\_collsp\ X1\ X0)\Rightarrow(\exists X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\wedge(\exists X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\wedge((X2\neq X3)\wedge((X2 \in X1)\wedge(X3 \in X1))))))) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge(l1\_collsp\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow((r1\_collsp\ X0\ X1\ X2\ X3)\Leftrightarrow(X3 \in k1\_collsp\ X0\ X1\ X2))))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge(l1\_collsp\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((X1 \in k1\_collsp\ X0\ X1\ X2)\wedge(X2 \in k1\_collsp\ X0\ X1\ X2)))) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge(l1\_collsp\ X0)))))\Rightarrow(\forall X1.(m1\_incproj\ X1\ X0)\Leftrightarrow(m2\_collsp\ X1\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge(l1\_collsp\ X0)))))\Rightarrow(\forall X1.(m2\_collsp\ X1\ X0)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\wedge(\exists X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\wedge((X2\neq X3)\wedge(X1 = k1\_collsp\ X0\ X2\ X3))))) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_collsp\ X0))\Rightarrow((v2\_collsp\ X0)\Leftrightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow((r1\_collsp\ X0\ X1\ X2\ X1)\wedge((r1\_collsp\ X0\ X1\ X1\ X2)\wedge(r1\_collsp\ X0\ X1\ X2\ X2)))))))) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_collsp\ X0))\Rightarrow((v4\_collsp\ X0)\Leftrightarrow (\neg\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(r1\_collsp\ X0\ X1\ X2\ X3))))) \tag{12}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge(l1\_collsp\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_collsp\ X0\ X1\ X2 = ReplSep\ (toset\ (\lambda X3 : \iota.m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)))\ (\lambda X3 : \iota.r1\_collsp\ X0\ X1\ X2\ X3)\ (\lambda X3 : \iota.X3)))) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_collsp\ X0))\Rightarrow((v3\_anproj\_2\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\exists X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\wedge((X1\neq X3)\wedge((X2\neq X3)\wedge(r1\_collsp\ X0\ X1\ X2\ X3))))))) \tag{14}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_collsp\ X0)\wedge((v3\_collsp\ X0)\wedge((v4\_collsp\ X0)\wedge((v2\_anproj\_2\ X0)\wedge((v3\_anproj\_2\ X0)\wedge(l1\_collsp\ X0)))))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u2\_incsp\_1\ (k3\_incproj\ X0)))\Rightarrow(\exists X2.(m1\_subset\_1\ X2\ (u1\_incsp\_1\ (k3\_incproj\ X0)))\wedge(\exists X3.(m1\_subset\_1\ X3\ (u1\_incsp\_1\ (k3\_incproj\ X0)))\wedge(\exists X4.(m1\_subset\_1\ X4\ (u1\_incsp\_1\ (k3\_incproj\ X0)))\wedge((X2\neq X3)\wedge((X3\neq X4)\wedge((X4\neq X2)\wedge((r1\_incsp\_1\ (k3\_incproj\ X0)\ X2\ X1)\wedge((r1\_incsp\_1\ (k3\_incproj\ X0)\ X3\ X1)\wedge(r1\_incsp\_1\ (k3\_incproj\ X0)\ X4\ X1))))))))))$$