l113_bcialg_1 (TMbD-MGKDpC7EJHBYod789A27Bz8KNWw1Tkf)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v3\_bcialg\_1 : \iota \Rightarrow o$ be given. Let $v4\_bcialg\_1 : \iota \Rightarrow o$ be given. Let $v5\_bcialg\_1 : \iota \Rightarrow o$ be given. Let $v7\_bcialg\_1 : \iota \Rightarrow o$ be given. Let $l2\_bcialg\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_bcialg\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_bcialg\_1 : \iota \Rightarrow \iota$ be given. Let $k4\_struct\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_bcialg\_1\ X0) \wedge ((v4\_bcialg\_1\ X0) \wedge ((v5\_bcialg\_1\ X0) \wedge ((v7\_bcialg\_1\ X0) \wedge (l2\_bcialg\_1\ X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (k2\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X1\ X2) = k1\_bcialg\_1\ X0\ (k2\_bcialg\_1\ X0\ X1)\ (k2\_bcialg\_1\ X0\ X2)))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_bcialg\_1\ X0) \wedge ((v4\_bcialg\_1\ X0) \wedge ((v5\_bcialg\_1\ X0) \wedge ((v7\_bcialg\_1\ X0) \wedge (l2\_bcialg\_1\ X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (k1\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X1\ X2)\ X3 = k1\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X1\ X3)\ X2)))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v3\_bcialg\_1\ X0) \wedge ((v4\_bcialg\_1\ X0) \wedge ((v5\_bcialg\_1\ X0) \wedge ((v7\_bcialg\_1\ X0) \wedge (l2\_bcialg\_1\ X0))))))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (k2\_bcialg\_1\ X0\ X1 \in k5\_bcialg\_1\ X0)) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v3\_bcialg\_1\ X0)\wedge((v4\_bcialg\_1\ X0)\wedge((v5\_bcialg\_1\ X0)\wedge((v7\_bcialg\_1\ X0)\wedge(l2\_bcialg\_1\ X0)))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow((X1\in k5\_bcialg\_1\ X0)\Leftrightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k1\_bcialg\_1\ X0\ (k2\_bcialg\_1\ X0\ X2)\ (k2\_bcialg\_1\ X0\ X1) = k1\_bcialg\_1\ X0\ X1\ X2))))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge(l2\_bcialg\_1\ X0))\wedge(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)))\Rightarrow(m1\_subset\_1\ (k2\_bcialg\_1\ X0\ X1)\ (u1\_struct\_0\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_bcialg\_1\ X0))\Rightarrow((v5\_bcialg\_1\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k1\_bcialg\_1\ X0\ X1\ X1 = k4\_struct\_0\ X0))) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_bcialg\_1\ X0))\Rightarrow((v4\_bcialg\_1\ X0)\Leftrightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(k1\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X1\ X2)\ X3)\ (k1\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X1\ X3)\ X2) = k4\_struct\_0\ X0))))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_bcialg\_1\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(k2\_bcialg\_1\ X0\ X1 = k1\_bcialg\_1\ X0\ (k4\_struct\_0\ X0)\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_bcialg\_1\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow((r1\_bcialg\_1\ X0\ X1\ X2)\Leftrightarrow(k1\_bcialg\_1\ X0\ X1\ X2 = k4\_struct\_0\ X0)))) \tag{9}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v3\_bcialg\_1\ X0)\wedge((v4\_bcialg\_1\ X0)\wedge((v5\_bcialg\_1\ X0)\wedge((v7\_bcialg\_1\ X0)\wedge(l2\_bcialg\_1\ X0)))))\Rightarrow((\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(r1\_bcialg\_1\ X0\ (k2\_bcialg\_1\ X0\ X1)\ X1))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(k2\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X1\ X2) = k2\_bcialg\_1\ X0\ (k1\_bcialg\_1\ X0\ X2\ X1))))))$$