interleaved_family_occurence[4,23]

interleaved_family_occurence(T;I;L;L_2;f)
$\equiv_{\mathrm{def}}$ $(\forall i{:}I.\ \mathrm{increasing}(f(i);\|L(i)\|)\ \&\ (\forall j{:}\mathbb{N}_{<\|L(i)\|}.\ (L(i))[j] = L_2[f(i,j)]))$
$\&\ (\forall i_1,\ i_2{:}I.\ \neg i_1 = i_2 \Rightarrow (\forall j_1{:}\mathbb{N}_{<\|L(i_1)\|},\ j_2{:}\mathbb{N}_{<\|L(i_2)\|}.\ \neg f(i_1,j_1) = f(i_2,j_2)))$
$\&\ (\forall x{:}\mathbb{N}_{<\|L_2\|}.\ \exists i{:}I,\ j{:}\mathbb{N}_{<\|L(i)\|}.\ x = f(i,j))$

clarification:

interleaved_family_occurence(T;I;L;L_2;f)
$\equiv_{\mathrm{def}}$ $(\forall i{:}I.\ \mathrm{increasing}(f(i);\|L(i)\|)\ \&\ (\forall j{:}\{0..\|L(i)\|^-\}.\ (L(i))[j] = L_2[f(i,j)] \in T))$
$\&\ (\forall i_1{:}I,\ i_2{:}I.$
$\neg i_1 = i_2 \in I$
$\Rightarrow (\forall j_1{:}\{0..\|L(i_1)\|^-\},\ j_2{:}\{0..\|L(i_2)\|^-\}.\ \neg f(i_1,j_1) = f(i_2,j_2) \in \mathbb{Z}))$
$\&\ (\forall x{:}\{0..\|L_2\|^-\}.\ \exists i{:}I,\ j{:}\{0..\|L(i)\|^-\}.\ x = f(i,j) \in \mathbb{Z})$

http://www.nuprl.org/FDLcontent/p0_802137_/p95_81438_{interleaved_family_occurence}.html