

Inference at \* 1  
of proof for Lemma fseg\_extend:

1.  $T : \text{Type}$
  2.  $l_1 : T \text{ List}$
  3.  $v : T$
  4.  $l_2 : T \text{ List}$
  5.  $L : T \text{ List}$
  6.  $l_2 = (L @ l_1)$
  7.  $\|l_1\| < \|l_2\|$
  8.  $l_2[(\|l_2\| - (\|l_1\| + 1))] = v$
  9.  $\neg(\uparrow \text{null}(L))$
  10.  $\exists L' : T \text{ List. } (L = (L' @ [\text{last}(L)]))$
- $\vdash \exists L @_0 : T \text{ List. } ((L @ l_1) = (L @_0 @ [v / l_1]))$   
by (((ParallelOp (-1)·)  
CollapseTHEN (((if (first.bool T:b  
) then HypSubst' else RevHypSubst') (-1)(0)·)  
CollapseTHEN (Auto·)·)·)

CollapseTHEN (((RWO "append\_assoc" 0)  
CollapseTHENA (Auto·)·)·)

1:

10.  $L' : T \text{ List}$
  11.  $L = (L' @ [\text{last}(L)])$
- $\vdash (L' @ [\text{last}(L)] @ l_1) = (L' @ [v / l_1])$   
.