

Inference at \*  
of proof for Lemma not\_over\_and:

$\vdash \forall A, B: \mathbb{P}. \text{Dec}(A) \Rightarrow ((\neg(A \wedge B)) \iff ((\neg A) \vee (\neg B)))$   
by ((GenRepD)  
CollapseTHEN ((Auto\_aux (first\_nat 1:n) ((first\_nat 1:n), (first\_nat 3:n)  
)) (first\_tok :t) inil\_term))).

1:

1.  $A : \mathbb{P}$
  2.  $B : \mathbb{P}$
  3.  $\text{Dec}(A)$
  4.  $\neg(A \wedge B)$
- $\vdash (\neg A) \vee (\neg B)$

2:

1.  $A : \mathbb{P}$
  2.  $B : \mathbb{P}$
  3.  $\text{Dec}(A)$
  4.  $(\neg A) \vee (\neg B)$
- $\vdash \neg(A \wedge B)$
- .