

Inference at *
of proof for Lemma equiv_rel_functionality_wrt_iff:

$\vdash \forall T, T': \text{Type}, E: (T \rightarrow T \rightarrow \mathbb{P}), E': (T' \rightarrow T' \rightarrow \mathbb{P}).$
 $(T = T')$
 $\Rightarrow (\forall x, y: T. E(x, y) \iff E'(x, y))$
 $\Rightarrow (\text{EquivRel}(T; x, y. E(x, y)) \iff \text{EquivRel}(T'; x, y. E'(x, y)))$
by ((UnivCD)
CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n), (first_nat 3:n)
)) (first_tok :t) inil_term)))

1:

1. $T : \text{Type}$
 2. $T' : \text{Type}$
 3. $E : T \rightarrow T \rightarrow \mathbb{P}$
 4. $E' : T' \rightarrow T' \rightarrow \mathbb{P}$
 5. $T = T'$
 6. $\forall x, y: T. E(x, y) \iff E'(x, y)$
- $\vdash \text{EquivRel}(T; x, y. E(x, y)) \iff \text{EquivRel}(T'; x, y. E'(x, y))$
- .