```
tc_addprime  THM

⊢  ∀r:rel(), ds:Collection(dec()), da:Collection(SimpleType)
   , de:sig(). tc(r;ds;da;de) ⟺ tc((r)';ds;da;de)
  by Auto THEN
All (Unfolds ``tc rel_addprime``) THEN

     D 1 THEN D 1 THEN
All Reduce THEN
ExRepD THEN D 0

     THEN Try (All (RWW "map_length_nat") THEN Auto)

     THEN All (RWW "map_select") THEN Auto
THEN All Reduce

     THEN Try (RWW "map_length_nat" (-1) THENA Auto)

     THEN Try (Complete
         (Subst
     term_types(ds;da;de;(r1[0])') ∼ term_types(ds;da;de;r1[0]) 0

              THEN Try Trivial

              THEN Try (BackThruLemma `term_types_addprime` THEN Auto)

         ))
THEN Try (Complete
         (Subst
     term_types(ds;da;de;(r1[1])') ∼ term_types(ds;da;de;r1[1]) 0

              THEN Try Trivial

              THEN Try (BackThruLemma `term_types_addprime` THEN Auto)

         ))
THEN Try (Complete
         (Subst
     term_types(ds;da;de;(r1[i])') ∼ term_types(ds;da;de;r1[i]) 0

              THEN Try Trivial

              THEN Try (BackThruLemma `term_types_addprime` THEN Auto)

         THEN Try (BackThruSomeHyp THEN Auto)
         ))

     THEN Try (Complete
         (Subst
     term_types(ds;da;de;(r1[0])') ∼ term_types(ds;da;de;r1[0]) (-3)

         THEN Try Trivial

              THEN Try (BackThruLemma `term_types_addprime` THEN Auto)
```

```
         ))
THEN Try (Complete
         (Subst
     term_types(ds;da;de;(r1[1])') ~ term_types(ds;da;de;r1[1]) (-2)

              THEN Try Trivial

              THEN Try (BackThruLemma `term_types_addprime` THEN Auto)

         ))
THEN Try (Complete
         (All (InstHyp [i
     ]) THENA Auto THEN
         Subst
     term_types(ds;da;de;(r1[i])') ~ term_types(ds;da;de;r1[i]) (-1)

              THEN Try Trivial

              THEN Try (BackThruLemma `term_types_addprime` THEN Auto)

         THEN Try (BackThruSomeHyp THEN Auto)
         ))

     THEN Try (Complete Auto')

END
```