src-edge THM

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⊢  ∀T:(Id→𝔹), to,from:(|T|→(IdLnk List)), u:Edge(T).
|  bi-graph(T;to;from) ⇒ source(u) ∈ |T|
| by Auto THEN All (Unfolds [‘bi-graph-edge‘;‘bi-graph‘;‘rset‘])
|    THEN
|    MaAuto
|
1. T : Id→𝔹
2. to : {i:Id| T(i) }→(IdLnk List)
3. from : {i:Id| T(i) }→(IdLnk List)
4. u : {l:IdLnk| ∃i:|T|. (l ∈ from(i)) }
5. ∀i:|T|.
|  (∀l∈to(i).destination(l) = i
|  & T(source(l))
|  & (l ∈ from(source(l)))
|  & (lnk-inv(l) ∈ from(i)))
|  & (∀l∈from(i).source(l) = i
|    & T(destination(l))
|    & (l ∈ to(destination(l)))
|    & (lnk-inv(l) ∈ to(i)))
⊢  T(source(u))
| by Analyze -2 THEN Unhide THEN MaAuto THEN ExRepD
|    THEN
|    InstHyp [i] -1
|    THEN
|    Unfold ‘l_all‘ -1
|    THEN
|    InstHyp [u] -1
|
1. T : Id→𝔹
2. to : {i:Id| T(i) }→(IdLnk List)
3. from : {i:Id| T(i) }→(IdLnk List)
4. u : IdLnk
5. i : |T|
6. (u ∈ from(i))
7. ∀i:|T|.
   (∀l∈to(i).destination(l) = i
   & T(source(l))
   & (l ∈ from(source(l)))
   & (lnk-inv(l) ∈ from(i)))
   & (∀l∈from(i).source(l) = i
     & T(destination(l))
     & (l ∈ to(destination(l)))
     & (lnk-inv(l) ∈ to(i)))
8. (∀l∈to(i).destination(l) = i
   & T(source(l))
   & (l ∈ from(source(l)))
   & (lnk-inv(l) ∈ from(i)))
9. ∀l:IdLnk.
   (l ∈ from(i))
   ⇒
   source(l) = i
   & T(destination(l))
   & (l ∈ to(destination(l)))
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   & (lnk-inv(l) ∈ to(i))
10. source(u) = i
11. T(destination(u))
12. (u ∈ to(destination(u)))
13. (lnk-inv(u) ∈ to(i))
⊢  T(source(u))  by HypSubst’ -4 0 THEN DVar ‘i’ THEN Unhide
END
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