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trace_consistent_action_effect  THM

⊢  ∀A:ioa{i:l}(), I:Fmla, rho:Decl, te:(Label→Label→𝔹), a:dec().
|  ¬ioa_mentions_trace(A)
|  ⇒
|  trace_consistent_pred(rho;A.da;te;I)
|  ⇒
|  a ∈ A.da
|  ⇒
|  trace_consistent_pred(rho;A.da;te;smts_eff_pred(...;I))
| by ...
THEN Try (Fold ‘pred‘ 0 THEN Auto)
|
1. A : ioa{i:l}()
2. I : Fmla
3. rho : Decl
4. te : Label→Label→𝔹
5. a : dec()
6. ¬ioa_mentions_trace(A)
7. ∀r:rel(). r ∈ I ⇒ trace_consistent_rel(rho;A.da;te;r)
8. a ∈ A.da
9. r : rel()
10. r ∈ smts_eff_pred(action_effect(a.lbl;A.eff;A.frame);I)
⊢  trace_consistent_rel(rho;A.da;te;r)
| by Unfold ‘smts_eff_pred‘ (-1)
THEN RW ColMemberC (-1) THEN ExRepD
|
THEN AllHyps (\h. InstWithVar (-3) h THENA Complete Auto)
|
|
1. A : ioa{i:l}()
2. I : Fmla
3. rho : Decl
4. te : Label→Label→𝔹
5. a : dec()
6. ¬ioa_mentions_trace(A)
7. ∀r:rel(). r ∈ I ⇒ trace_consistent_rel(rho;A.da;te;r)
8. a ∈ A.da
9. r : rel()
10. r@0 : rel()
11. r@0 ∈ I
12. r ∈ smts_eff_rel(action_effect(a.lbl;A.eff;A.frame);r@0)
13. trace_consistent_rel(rho;A.da;te;r@0)
⊢  trace_consistent_rel(rho;A.da;te;r)
| by Unfold ‘smts_eff_rel‘ (-2) THEN RW0 "member_col_subst" (-2)

|    THENA Auto THEN ExRepD THEN All Reduce
THEN HypSubstSq (-2) 0
|
|
1. A : ioa{i:l}()
2. I : Fmla
3. rho : Decl
4. te : Label→Label→𝔹
5. a : dec()
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6. ¬ioa_mentions_trace(A)
7. ∀r:rel(). r ∈ I ⇒ trace_consistent_rel(rho;A.da;te;r)
8. a ∈ A.da
9. r : rel()
10. r@0 : rel()
11. r@0 ∈ I
12. as : (Label×Term) List
13. 1of(unzip(as)) = rel_vars(r@0)
14. ∀i:ℕ.
|   i<||as||
|   ⇒
|   2of(as[i]) ∈ smts_eff(action_effect(a.lbl;A.eff;A.frame);...)
15. r = rel_subst(as;r@0)
16. trace_consistent_rel(rho;A.da;te;r@0)
⊢  trace_consistent_rel(rho;A.da;te;rel_subst(as;r@0))
| by BackThruLemma ‘trace_consistent_rel_subst‘
THEN Auto
|
1. A : ioa{i:l}()
2. I : Fmla
3. rho : Decl
4. te : Label→Label→𝔹
5. a : dec()
6. ¬ioa_mentions_trace(A)
7. ∀r:rel(). r ∈ I ⇒ trace_consistent_rel(rho;A.da;te;r)
8. a ∈ A.da
9. r : rel()
10. r@0 : rel()
11. r@0 ∈ I
12. as : (Label×Term) List
13. 1of(unzip(as)) = rel_vars(r@0)
14. ∀i:ℕ.
    i<||as||
    ⇒
    2of(as[i]) ∈ smts_eff(action_effect(a.lbl;A.eff;A.frame);...)
15. r = rel_subst(as;r@0)
16. trace_consistent_rel(rho;A.da;te;r@0)
⊢  ¬subst_mentions_trace(as)
  by BackThruLemma’ ‘effect_subst_mentions_trace‘ THEN Auto
END
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