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THEORY Theo4DeadlockFree
IMPORT THEORY
  EvtBTheory
TYPE PARAMETERS EVENT, STATE
OPERATORS
  DeadlockFreeness Definition predicate (m : Machine(STATE, EVENT))
    direct definition
       $Inv(m) \subseteq Grd(m)[Progress(m)]$ 
  check Machine DeadLockFreeness predicate (m : Machine(STATE, EVENT))
    well-definedness Machine_WellCons(m)
    direct definition
      DeadlockFreeness_Definition(m)
PROOF RULES
  extension_def:
  Metavariables
    m : Machine(STATE, EVENT)
  Rewrite Rules
  rew1 : check_Machine_DeadLockFreeness(m)
    rhs1 :  $\top \Rightarrow DeadlockFreeness\_Definition(m)$ 
  rew2 : DeadlockFreeness_Definition(m)
    rhs1 :  $\top \Rightarrow \forall g, i, p. Progress(m) = p \wedge Grd(m) = g \wedge Inv(m) = i \Rightarrow i \subseteq g[p]$ 
END

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