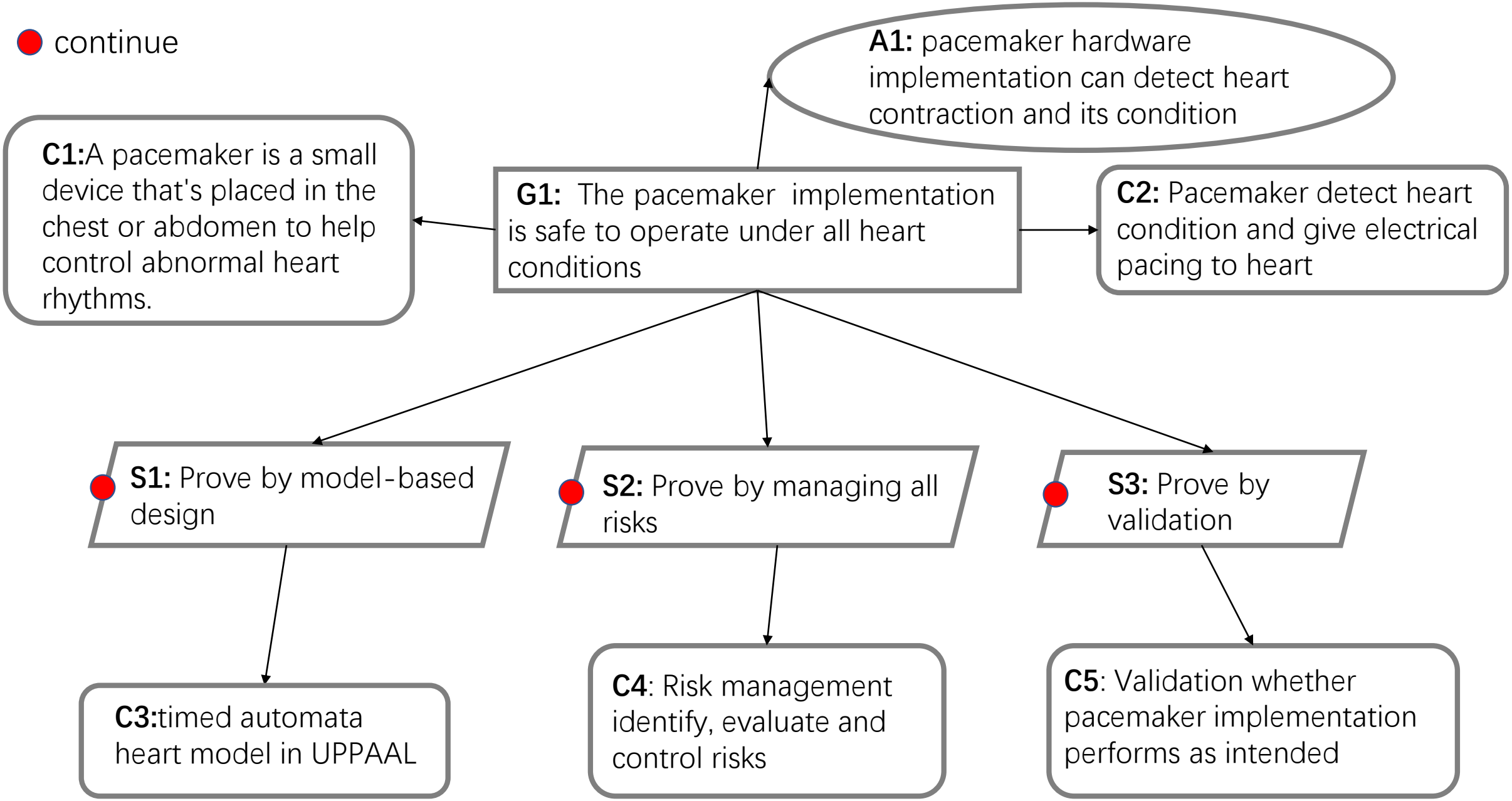
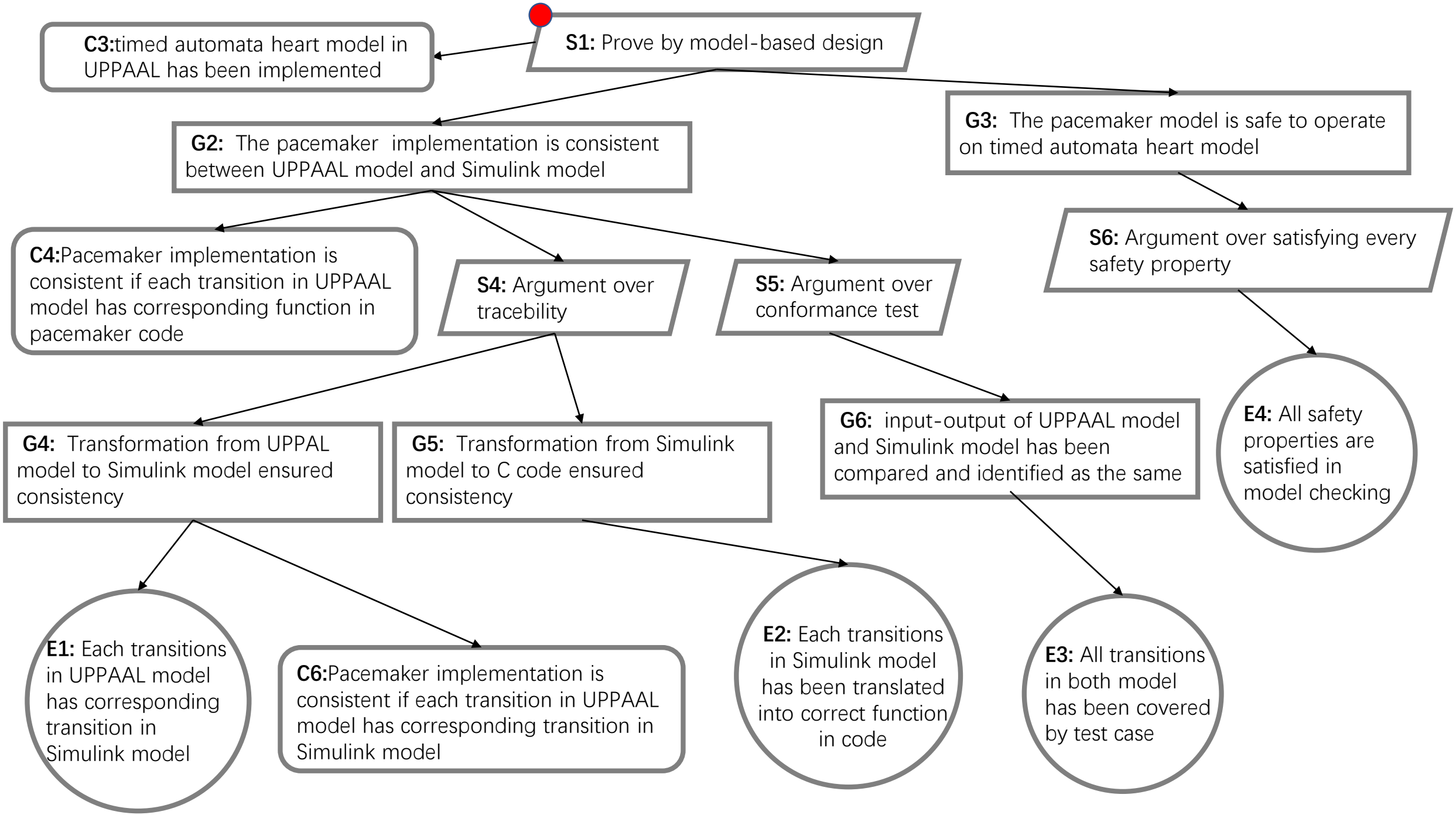
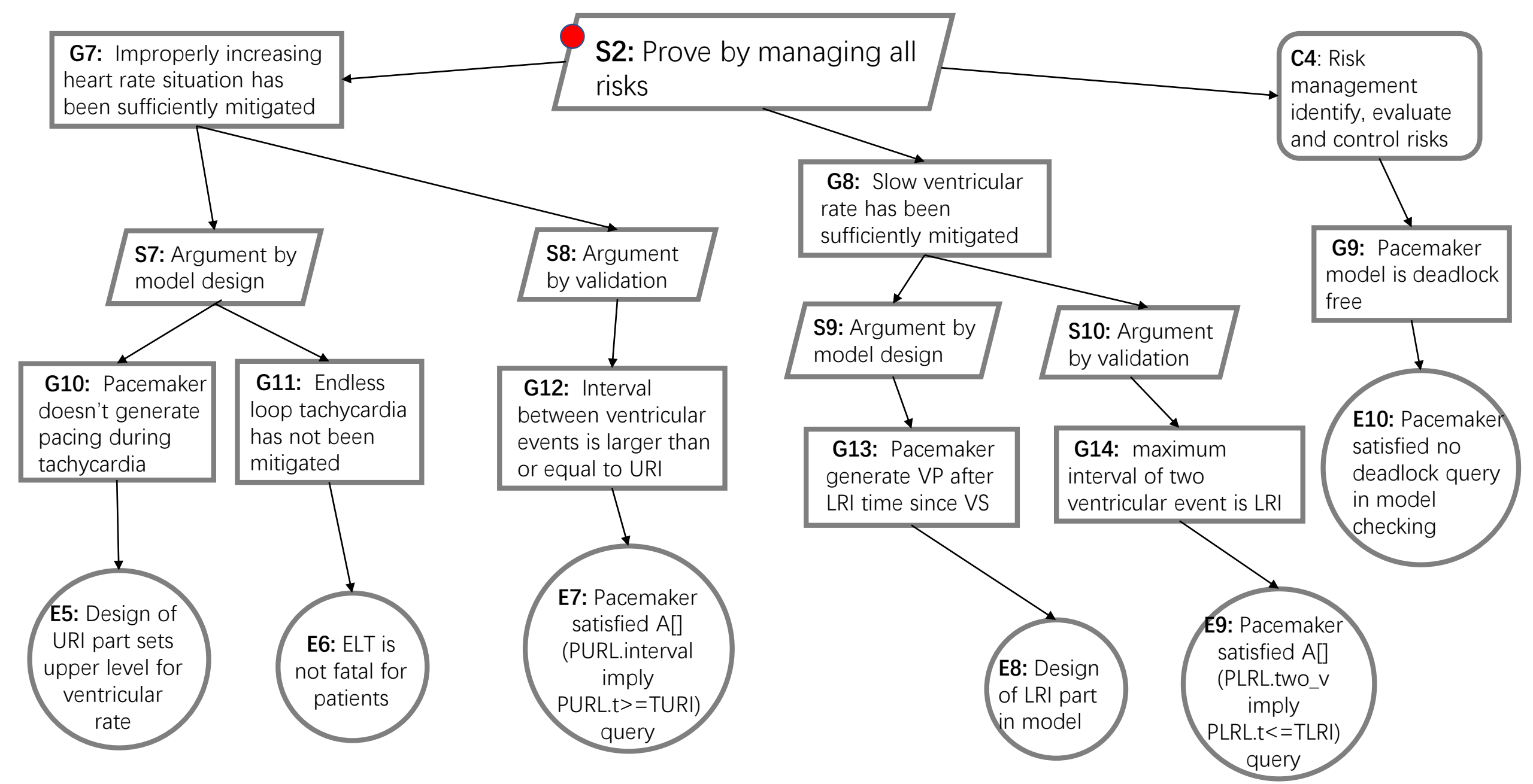
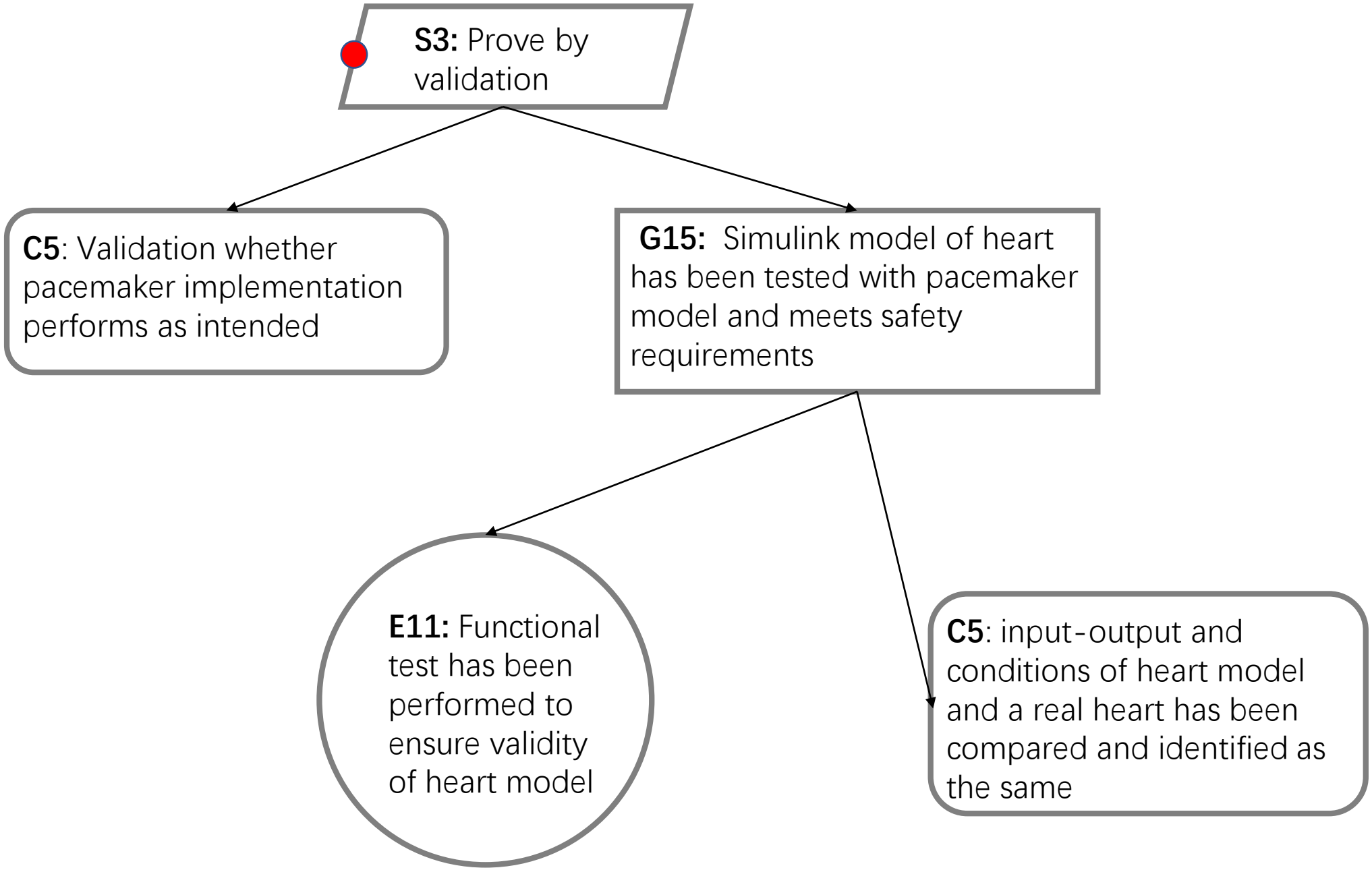
continue


A1: pacemaker hardware implementation can detect heart contraction and its condition
C1:A pacemaker is a small device that's placed in the chest or abdomen to help control abnormal heart rhythms.
G1: The pacemaker implementation is safe to operate under all heart conditions
C2: Pacemaker detect heart condition and give electrical pacing to heart
S1: Prove by model-based design
S2: Prove by managing all risks
S3: Prove by validation
C3:timed automata heart model in UPPAAL
C4: Risk management identify, evaluate and control risks
C5: Validation whether pacemaker implementation performs as intended


C3:timed automata heart model in UPPAAL has been implemented
S1: Prove by model-based design
G2: The pacemaker implementation is consistent between UPPAAL model and Simulink model
G3: The pacemaker model is safe to operate on timed automata heart model
C4:Pacemaker implementation is consistent if each transition in UPPAAL model has corresponding function in pacemaker code
S4: Argument over tracebility
S5: Argument over conformance test
S6: Argument over satisfying every safety property
G4: Transformation from UPPAL model to Simulink model ensured consistency
G5: Transformation from Simulink model to C code ensured consistency
G6: input-output of UPPAAL model and Simulink model has been compared and identified as the same
E4: All safety properties are satisfied in model checking
E1: Each transitions in UPPAAL model has corresponding transition in Simulink model
C6:Pacemaker implementation is consistent if each transition in UPPAAL model has corresponding transition in Simulink model
E2: Each transitions in Simulink model has been translated into correct function in code
E3: All transitions in both model has been covered by test case


S2: Prove by managing all risks
G7: Improperly increasing heart rate situation has been sufficiently mitigated
C4: Risk management identify, evaluate and control risks
G8: Slow ventricular rate has been sufficiently mitigated
G9: Pacemaker model is deadlock free
S7: Argument by model design
S8: Argument by validation
S9: Argument by model design
S10: Argument by validation
G10: Pacemaker doesn't generate pacing during tachycardia
G11: Endless loop tachycardia has not been mitigated
G12: Interval between ventricular events is larger than or equal to URI
G13: Pacemaker generate VP after LRI time since VS
G14: maximum interval of two ventricular event is LRI
E10: Pacemaker satisfied no deadlock query in model checking
E5: Design of URI part sets upper level for ventricular rate
E6: ELT is not fatal for patients
E7: Pacemaker satisfied A[] (PURL.interval imply PURL.t>=TURI) query
E8: Design of LRI part in model
E9: Pacemaker satisfied A[] (PLRL.two_v imply PLRL.t<=TLRI) query


S3: Prove by validation
C5: Validation whether pacemaker implementation performs as intended
G15: Simulink model of heart has been tested with pacemaker model and meets safety requirements
E11: Functional test has been performed to ensure validity of heart model
C5: input-output and conditions of heart model and a real heart has been compared and identified as the same