Here is the instantiated safety case for the Generic Patient-Controlled Analgesia (GPCA) system, also known as an infusion pump, displayed in a hierarchical tree format:

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- Goal (G1, Operational safety is verified in GPCA system)

- Strategy (S1, Argument over the satisfaction of all specs over GPCA system)

- Context (C1, All specs are given by spec.allInstances())

- Goal (G2, All operational hazards are mitigated)

- Strategy (S3, Argument over operational hazards)

- Context (C2, Operational hazards are given by operational hazard.allInstances())

- Goal (G3, Overinfusion is mitigated)

- Strategy (S4, Argument over the applied scenarios of Overinfusion)

- Context (C3, All related scenarios are given by operational hazard)

- Goal (G4, Overinfusion is mitigated under scenario)

- Strategy (S5, Argument over all specs related to scenario)

- Context (C4, All related specs are given by scenario.spec.allinstances())

- Goal (G5, spec is appropriate for scenario)

- Strategy (S6, Argument the appropriateness of spec over properties)

- Context (C5, Properties are given by spec.property.allinstances())

- Goal (G6, property is appropriate for spec)

- Strategy (S7, Argument over the source of the property definition)

- Context (C6, Source is given by property.source)

- Goal (G7, Source is appropriate and trustworthy)

- Solution (Sn1, source)

- Goal (G8, property definition is sufficient)

- Solution (Sn2, property)

- Goal (G3, Underinfusion is mitigated)

- Strategy (S4, Argument over the applied scenarios of Underinfusion)

- Context (C3, All related scenarios are given by operational hazard)

- Goal (G4, Underinfusion is mitigated under scenario)

- Strategy (S5, Argument over all specs related to scenario)

- Context (C4, All related specs are given by scenario.spec.allinstances())

- Goal (G5, spec is appropriate for scenario)

- Strategy (S6, Argument the appropriateness of spec over properties)

- Context (C5, Properties are given by spec.property.allinstances())

- Goal (G6, property is appropriate for spec)

- Strategy (S7, Argument over the source of the property definition)

- Context (C6, Source is given by property.source)

- Goal (G7, Source is appropriate and trustworthy)

- Solution (Sn1, source)

- Goal (G8, property definition is sufficient)

- Solution (Sn2, property)

- Goal (G3, Flow rate does not match the programmed rate is mitigated)

- Strategy (S4, Argument over the applied scenarios of Flow rate does not match the programmed rate)

- Context (C3, All related scenarios are given by operational hazard)

- Goal (G4, Flow rate does not match the programmed rate is mitigated under scenario)

- Strategy (S5, Argument over all specs related to scenario)

- Context (C4, All related specs are given by scenario.spec.allinstances())

- Goal (G5, spec is appropriate for scenario)

- Strategy (S6, Argument the appropriateness of spec over properties)

- Context (C5, Properties are given by spec.property.allinstances())

- Goal (G6, property is appropriate for spec)

- Strategy (S7, Argument over the source of the property definition)

- Context (C6, Source is given by property.source)

- Goal (G7, Source is appropriate and trustworthy)

- Solution (Sn1, source)

- Goal (G8, property definition is sufficient)

- Solution (Sn2, property)

- Goal (G3, Programmed rate too low is mitigated)

- Strategy (S4, Argument over the applied scenarios of Programmed rate too low)

- Context (C3, All related scenarios are given by operational hazard)

- Goal (G4, Programmed rate too low is mitigated under scenario)

- Strategy (S5, Argument over all specs related to scenario)

- Context (C4, All related specs are given by scenario.spec.allinstances())

- Goal (G5, spec is appropriate for scenario)

- Strategy (S6, Argument the appropriateness of spec over properties)

- Context (C5, Properties are given by spec.property.allinstances())

- Goal (G6, property is appropriate for spec)

- Strategy (S7, Argument over the source of the property definition)

- Context (C6, Source is given by property.source)

- Goal (G7, Source is appropriate and trustworthy)

- Solution (Sn1, source)

- Goal (G8, property definition is sufficient)

- Solution (Sn2, property)

- Goal (G3, Dose limit exceeded due to excessive bolus requests is mitigated)

- Strategy (S4, Argument over the applied scenarios of Dose limit exceeded due to excessive bolus requests)

- Context (C3, All related scenarios are given by operational hazard)

- Goal (G4, Dose limit exceeded due to excessive bolus requests is mitigated under scenario)

- Strategy (S5, Argument over all specs related to scenario)

- Context (C4, All related specs are given by scenario.spec.allinstances())

- Goal (G5, spec is appropriate for scenario)

- Strategy (S6, Argument the appropriateness of spec over properties)

- Context (C5, Properties are given by spec.property.allinstances())

- Goal (G6, property is appropriate for spec)

- Strategy (S7, Argument over the source of the property definition)

- Context (C6, Source is given by property.source)

- Goal (G7, Source is appropriate and trustworthy)

- Solution (Sn1, source)

- Goal (G8, property definition is sufficient)

- Solution (Sn2, property)

- Goal (G3, Bolus volume/concentration too high is mitigated)

- Strategy (S4, Argument over the applied scenarios of Bolus volume/concentration too high)

- Context (C3, All related scenarios are given by operational hazard)

- Goal (G4, Bolus volume/concentration too high is mitigated under scenario)

- Strategy (S5, Argument over all specs related to scenario)

- Context (C4, All related specs are given by scenario.spec.allinstances())

- Goal (G5, spec is appropriate for scenario)

- Strategy (S6, Argument the appropriateness of spec over properties)

- Context (C5, Properties are given by spec.property.allinstances())

- Goal (G6, property is appropriate for spec)

- Strategy (S7, Argument over the source of the property definition)

- Context (C6, Source is given by property.source)

- Goal (G7, Source is appropriate and trustworthy)

- Solution (Sn1, source)

- Goal (G8, property definition is sufficient)

- Solution (Sn2, property)

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