Below is the instantiated assurance case for the Generic Patient-Controlled Analgesia (GPCA) system based on the given safety case pattern. The placeholders "{}" have been replaced with the system-specific information and additional decorators have been removed.

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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())

- (Undeveloped)

- Goal (G2, All operational hazards are mitigated)

- Strategy (S2, Argument over reliability in all suitable levels of GPCA system)

- (Undeveloped)

- 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 Flow rate not matching programmed rate)

- Strategy (S5, Argument over all specs related to Flow rate not matching programmed rate)

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

- Goal (G5, SR1.1 is appropriate for Flow rate not matching programmed rate)

- Strategy (S6, Argument the appropriateness of SR1.1 over properties)

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

- Goal (G6, Flow rate sensor is appropriate for SR1.1)

- Strategy (S7, Argument over the source of the Flow rate sensor definition)

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

- Goal (G7, FDA standard is appropriate and trustworthy)

- Solution (Sn1, FDA standard document)

- Goal (G8, Flow rate sensor definition is sufficient)

- Solution (Sn2, Flow rate sensor specification)

- 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 Programmed rate too low)

- Strategy (S5, Argument over all specs related to Programmed rate too low)

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

- Goal (G5, SR1.2 is appropriate for Programmed rate too low)

- Strategy (S6, Argument the appropriateness of SR1.2 over properties)

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

- Goal (G6, Period (to trigger the underinfusion alarm) is 15 minutes appropriate for SR1.2)

- Strategy (S7, Argument over the source of the Period (to trigger the underinfusion alarm) definition)

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

- Goal (G7, Expertise opinion is appropriate and trustworthy)

- Solution (Sn1, Expertise opinion document)

- Goal (G8, Period (trigger the underinfusion alarm) definition is sufficient)

- Solution (Sn2, Period (trigger the underinfusion alarm) specification)

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

- Strategy (S5, Argument over all specs related to Dose limit exceeded due to excessive bolus requests)

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

- Goal (G5, SR1.3 is appropriate for Dose limit exceeded due to excessive bolus requests)

- Strategy (S6, Argument the appropriateness of SR1.3 over properties)

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

- Goal (G6, Limit on bolus volume appropriate for SR1.3)

- Strategy (S7, Argument over the source of the Limit on bolus volume definition)

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

- Goal (G7, Previous knowledge is appropriate and trustworthy)

- Solution (Sn1, Previous knowledge document)

- Goal (G8, Limit on bolus volume definition is sufficient)

- Solution (Sn2, Limit on bolus volume specification)

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

- Strategy (S5, Argument over all specs related to Bolus volume/concentration too high)

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

- Goal (G5, SR1.4 is appropriate for Bolus volume/concentration too high)

- Strategy (S6, Argument the appropriateness of SR1.4 over properties)

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

- Goal (G6, Maximum bolus concentration appropriate for SR1.4)

- Strategy (S7, Argument over the source of the Maximum bolus concentration definition)

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

- Goal (G7, FDA standard is appropriate and trustworthy)

- Solution (Sn1, FDA standard document)

- Goal (G8, Maximum bolus concentration definition is sufficient)

- Solution (Sn2, Maximum bolus concentration specification)

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This hierarchical tree structure contains concrete and system-specific information filled in all placeholders, which represents the instantiated safety case for the GPCA system.