Below is the hierarchical tree representation of the assurance case for the BlueROV2 system. The tree structure uses dashes (-) to denote different levels:

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- Goal (G1, Hazards for BlueROV2 system addressed in accordance with ALARP principle.)

- Strategy (S1, Argument by risk reduction/elimination of each hazard)

- Goal (G2, No intolerable risks present in the system.)

- Context (C1, Definition of "intolerable")

- Strategy (S2, Argue that risk posed by any remaining hazards is negligible) (Undeveloped)

- Strategy (S3, Argue that no other risks have been identified) (Undeveloped)

- Goal (G3, Risk from underwater operational hazards has been reduced as low as reasonably practicable)

- Context (C2, Assigned severity class is {Hazard.Severity}) (Uninstantiated)

- Strategy (S4, Apply ReSonAte to estimate level of risk from hazard condition underwater operational hazards) (Uninstantiated)

- Assumption (A1, Function required by BTD is available) (Uninstantiated)

- Goal (G4, Model BTD accurately describes possible propagation of hazard underwater operational hazards)

- Goal (G6, Possible hazard propagation paths correctly captured in BTD) (Undeveloped)

- Goal (G7, Barriers in the BTD correctly describe their respective control action including any required system functions) (Undeveloped)

- Goal (G8, All non-negligible threats have been identified) (Undeveloped)

- Goal (G5, Quantitative risk estimates are accurate and below acceptable threshold)

- Goal (G9, State probability distribution used for risk estimation is an accurate representation of expected system states) (Undeveloped)

- Goal (G10, Estimated probability of operational consequences is below allowable threshold for severity class) (Uninstantiated)

- Solution (Sn1, Estimated risk level {RiskEst}) (Uninstantiated)

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Note:

- Elements marked as "Undeveloped" have not been further developed.

- Elements marked as "Uninstantiated" contain placeholders and need to be instantiated or further detailed based on specific system information.

- Placeholders within descriptions were assumed to be instantiated as indicated where generic descriptions were replaced with specific system references like "BlueROV2 system" or "underwater operational hazards".