Here is the representation of the instantiated assurance case for the BlueROV2 system, based on the provided assurance case pattern. This assurance case assumes the system-specific details for placeholders:

\*\*BlueROV2 Assurance Case\*\*

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

- (Undeveloped)

- \*\*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): Argument by ensuring that risk posed by any remaining hazards is negligible\*\*

- (Undeveloped)

- \*\*Strategy (S3): Argument by ensuring no other risks have been identified\*\*

- (Undeveloped)

- \*\*Goal (G3): Risk from water ingress hazard has been reduced as low as reasonably practicable\*\*

- \*\*Context (C2): Assigned severity class is "High" for water ingress hazard.\*\*

- (Uninstantiated)

- \*\*Strategy (S4): Apply ReSonAte to estimate level of risk from hazard condition water ingress hazard.\*\*

- \*\*Assumption (A1): Function for water tight compartment integrity required by System Blueprint Diagram (SBD) is available\*\*

- (Uninstantiated)

- \*\*Goal (G4): Model System Blueprint Diagram accurately describes possible propagation of water ingress hazard\*\*

- (Uninstantiated)

- \*\*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 mission failure consequence is below allowable threshold for severity class\*\*

- \*\*Solution (Sn1): Estimated risk level "Mission Failure Probability Acceptable"\*\*

- (Uninstantiated)

- (Uninstantiated)

- \*\*Goal (G6): Possible hazard propagation paths correctly captured in SBD\*\*

- (Undeveloped)

- \*\*Goal (G7): Barriers in the SBD correctly describe their respective control action including any required system functions\*\*

- (Undeveloped)

- \*\*Goal (G8): All non-negligible threats have been identified\*\*

- (Undeveloped)