Here is the instantiated assurance case for the BlueROV2 system based on the given assurance case pattern. I have instantiated placeholders and accommodated domain-specific details to tailor the pattern to the BlueROV2 system:

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- G1: Hazards for BlueROV2 system addressed in accordance with ALARP principle.

- S1: Argument by risk reduction/elimination of each hazard

- G2: No intolerable risks present in the system.

- C1: Definition of "intolerable"

- S2: (Undeveloped)

- S3: (Undeveloped)

- G3: Risk from Obstacle encounter has been reduced as low as reasonably practicable

- C2: Assigned severity class is Major

- S4: Apply ReSonAte to estimate level of risk from hazard condition Obstacle encounter

- A1: Function obstacle detection required by Avoidance Maneuver BTD is available

- G4: Model Avoidance Maneuver BTD accurately describes possible propagation of Obstacle encounter

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

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

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

- G5: Quantitative risk estimates are accurate and below acceptable threshold

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

- G10: Estimated probability of collision is below allowable threshold for severity class

- Sn1: Estimated risk level 10^-3 per hour

```

### Explanation:

- \*\*Top-Level Goal (G1):\*\* The overall claim that all hazards for the BlueROV2 system have been addressed according to the ALARP principle.

- \*\*Strategy (S1):\*\* Arguing through risk reduction or elimination of each hazard.

- \*\*Goal (G2):\*\* Ensuring no intolerable risks are present in the BlueROV2 system with context defining "intolerable".

- \*\*Hazard-Specific Goal (G3):\*\* Addressing the risk from the "Obstacle encounter" hazard, with context specifying its severity level as "Major".

- \*\*Strategy (S4):\*\* Applying ReSonAte to estimate the level of risk from the "Obstacle encounter" hazard, assuming the availability of the "obstacle detection" function required by the BTD.

- \*\*Subgoals under G4:\*\*

- Ensuring the BTD accurately captures hazard propagation paths (undeveloped).

- Verifying the barriers in the BTD accurately describe control actions (undeveloped).

- Confirming all non-negligible threats have been identified (undeveloped).

- \*\*Goal (G5):\*\* Ensuring quantitative risk estimates are accurate and below an acceptable threshold.

- \*\*Subgoals under G5:\*\*

- Validating the state probability distribution (undeveloped).

- Ensuring the estimated probability of collision is below the allowable threshold, supported by a risk estimate of 10^-3 per hour.

This hierarchical tree format provides a structured assurance case that conforms to the original pattern while being specific to the BlueROV2 system.