To create an assurance case for the BlueROV2 system from the given assurance case pattern, we'll instantiate the placeholders with information specific to the BlueROV2 domain. This will involve replacing placeholder values, uninstantiated labels, and ensuring the resulting hierarchical tree structure is clear.

Below is the instantiated assurance case for the BlueROV2 system represented in a hierarchical tree format using dashes (-) to denote different levels of the structure.

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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"

- HasChoice (G2, [S2, S3], 1 of 2)

- S2: Argument by negligible risk for remaining hazards

- Undeveloped: This strategy is yet to be developed.

- S3: Argue that no other risks have been identified

- Undeveloped: This strategy is yet to be developed.

- G3: Risk from Deviation from the operating area hazard has been reduced as low as reasonably practicable

- C2: Assigned severity class is Minor

- S4: Apply ReSonAte to estimate level of risk from hazard condition Deviation from the operating area

- A1: Function obstacle detection required by the BTD is available

- G4: Model for Deviation from the operating area BTD accurately describes possible propagation of hazard Deviation from the operating area

- G6: Possible hazard propagation paths correctly captured in BTD

- Undeveloped: This goal is yet to be developed.

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

- Undeveloped: This goal is yet to be developed.

- G8: All non-negligible threats have been identified

- Undeveloped: This goal is yet to be developed.

- 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: This goal is yet to be developed.

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

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

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I followed the steps to instantiate the assurance case pattern as described. Here are the replacements made:

1. \*\*G1\*\*: Instantiated to "Hazards for BlueROV2 system addressed in accordance with ALARP principle".

2. \*\*G3\*\*: Instantiated to "Risk from Deviation from the operating area hazard has been reduced as low as reasonably practicable".

3. \*\*G4\*\*: Instantiated to "Model for Deviation from the operating area BTD accurately describes possible propagation of hazard Deviation from the operating area".

4. \*\*G10\*\*: Instantiated to "Estimated probability of collision is below allowable threshold for severity class".

5. \*\*C2\*\*: Instantiated to "Assigned severity class is Minor".

6. \*\*S4\*\*: Instantiated to "Apply ReSonAte to estimate level of risk from hazard condition Deviation from the operating area".

7. \*\*A1\*\*: Instantiated to "Function obstacle detection required by the BTD is available".

8. \*\*Sn1\*\*: Instantiated to "Estimated risk level 10^-3 per hour for collision".

Please review the hierarchical structure and instantiated information to ensure it aligns with the specific safety needs and requirements of the BlueROV2 system.