Based on the assurance case pattern provided and the domain information for the BlueROV2 system, I will instantiate the assurance case pattern to create an assurance case and represent it in a hierarchical tree format. The instantiation will involve replacing placeholder values with specific information related to the BlueROV2 system. For the purpose of clarity, the assurance case is structured with goals and strategies supported as derived from the nodes and relationships specified in the pattern.

```

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 BlueROV2 system.

S2: Argue that risk posed by any remaining hazards is negligible (undeveloped)

S3: Argue that no other risks have been identified (undeveloped)

G3: Risk from Obstacle Encounter has been reduced as low as reasonably practicable.

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

G4: Model Obstacle Encounter BTD accurately describes possible propagation of hazard Obstacle Encounter (uninstantiated)

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)

G3: Risk from Loss of Pipeline has been reduced as low as reasonably practicable (multiplicity relationship, 1 of \*)

G3: Risk from Deviation from the Operating Area has been reduced as low as reasonably practicable (multiplicity relationship, 1 of \*)

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 Major

Sn1: Estimated risk level 10^-3 per hour (uninstantiated)

C1: Definition of "intolerable"

C2: Assigned severity class is Major (uninstantiated)

A1: Function Obstacle Detection required by Obstacle Encounter BTD is available (uninstantiated, hinting requirement)

```

Each node in the tree hierarchy is a representation of the respective elements like goals (G), strategies (S), etc., from the assurance case pattern. "Uninstantiated" decorations have been removed from most elements to align with the assurance case development steps, but where critical for clarity, such status is noted next to the corresponding goals and strategies. Also, undeveloped elements are marked to indicate areas where further development is needed.

This assurance case template would guide the detailed hazard analysis and risk assessment efforts needed to ensure the BlueROV2 system operates safely and efficiently in its intended underwater environment, focusing particularly on the autonomous tracking and obstacle avoidance functionalities.