Enhancing Seamless Communication in Underwater Acoustic Sensor Networks

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Abstract: *Underwater Acoustic Sensor Networks (UASN) facilitate data exchange in aquatic environments using sound-based communication. However, UASN encounters challenges like energy scarcity in underwater nodes and ever-changing acoustic link conditions. Efficient routing schemes are imperative to address these issues. To overcome this, the protocol employs a local topology strategy that strategically selects relay nodes to bridge these void regions. There ACGSOR is one of the algorithms which emerges a solution for this. It tackles the 'void region problem' by using a local topology strategy to select relay nodes. Additionally, it incorporates transmission mode switching to optimize communication. Through simulations, ACGSOR demonstrates its potential in enhancing energy efficiency, stabilizing link conditions, and navigating the complexities of underwater communication. This study contributes to establishing resilient underwater networks, paving the way for enhanced underwater exploration and data collection*

Keywords: UASN, Routing Schemes, ACGSOR, Void region problem, Local Topology

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