JSAC – CALL FOR PAPERS

Underwater Wireless Communications and Networks

Wireless information transmission through the ocean is one of the enabling technologies for the development of future ocean-observation systems, whose applications include gathering of scientific data, pollution control, climate recording, detection of objects on the ocean floor, and transmission of images from remote sites. Implicitly, wireless signal transmission is crucial for control of autonomous vehicles which will serve as mobile nodes in the future information networks of distributed underwater sensors.

Wireless communications underwater are usually established using acoustic waves, while electro-magnetic waves can be used over short distances. Acoustic communications are governed by three factors: limited bandwidth, time-varying multipath propagation, and low speed of sound underwater. Together, these factors result in a communication channel of poor quality and high latency, thus ironically combining the worst properties of terrestrial mobile radio and satellite channels. In addition, because acoustic propagation is best supported at low frequencies, high-rate underwater systems are inherently ultra-wideband. These facts necessitate dedicated design of communication algorithms and network protocols at all layers of the system architecture. The proposed JSAC special issue seeks original research papers that explicitly address the unique technical challenges encountered in underwater scenarios, including (but not limited to) the following areas:

- Statistical channel modeling and estimation
- Underwater channel and network capacity
- Bandwidth-efficient modulation/detection methods
- Acoustic modem design and performance
- Coding for underwater channels
- Optical and RF underwater systems
- Network topology and architecture
- Resource allocation and spatial reuse
- Multiple access techniques
- Medium access control protocols
- Routing protocols
- Transport protocols
- Traffic characterization and modeling
- Data aggregation, fusion, and storage
- System integration and applications
- Experimental platforms
- Application experiences

Prospective authors should follow the IEEE J-SAC manuscript format described in the Information for Authors at . http://www.jsac.ucsd.edu/Guidelines/info.html. Authors should submit a PDF version of their complete manuscript to http://edas.info according to the following timetable:

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