Call for Comments on Protocol Encoding

The Open Geospatial Consortium (OGC) Technical Committee's PUCK Standards Working Group was chartered to process the existing MBARI PUCK protocol as a candidate OGC standard compatible with the OGC Sensor Web Enablement (SWE) standards baseline. The standard proposal is available for comment.

Most sensor networks require careful manual installation and configuration by technicians to assure that software components are properly associated with the physical instruments that they represent. Instrument driver software, configuration files, and "metadata" describing the instrument and its capabilities must be manually installed and associated with a physical instrument port. Sometimes these manual procedures must be performed under physically challenging conditions, increasing the chances of human error. PUCK addresses these challenges by defining a standard instrument protocol to retrieve metadata and other information from the device itself. This information can include OGC SWE SensorML and IEEE 1451 Transducer Electronic Data Sheet (TEDS) documents, as well as actual instrument driver code. Computers on the network can use the PUCK protocol to retrieve this information from installed instruments and utilize it appropriately, e.g. to automatically identify, configure and operate the instruments. Thus PUCK enables automatic self-configuring "plug-and-work" sensor networks.

PUCK is relatively simple, and several manufacturers have implemented the protocol in their instruments' firmware. PUCK augments but doesn't replace existing instrument command sets, so can be implemented without abandoning existing firmware and software applications. PUCK was originally developed by the Monterey Bay Aquarium Research Institute (MBARI) for oceanographic applications, but is useful in any sensor network containing RS232 or Ethernet-connected instruments.

PUCK-enabled instruments have been deployed on ocean observatories in the USA and Europe, and the protocol is being considered for adoption by other projects as well.