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Acquiring data under high probability of loss of equipment

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In some areas, geophysical measurements carry a high risk of loss or damage to equipment. Examples include measurements in areas that are exposed to hazards such as ice break-up, avalanches, mud slides, or volcanic activity. One way to address this challenge is to reduce equipment costs below the pain point while ensuring remote transfer of data during the acquisition period. Faced with the challenge of coastal oceanographic measurements in the presence of multiple freeze-up and break-up events during the winter we developed a low-cost buoy for battery-powered data acquisition and transfer through the cell phone network. The design of the buoy and experiences of the first season of deployment of half a dozen systems will be presented.