
SWIFT (Surveillance Working In the Field Technology) - Using mobile devices for Site Condition Monitoring

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Scottish Natural Heritage (SNH) has a rolling programme for monitoring the condition of habitats, species populations and geological interests on protected areas in Scotland called Site Condition Monitoring (SCM). The SWIFT app supports field survey work for SCM through the use of mobile devices. Developed on the Android platform, it operates on 7 and 10 inch tablets running Android 4.4. Existing data from SNH's corporate databases is downloaded over Wi-Fi, populating the SWIFT app with information required for supporting SCM field visits. Data capture takes the form of recording monitoring and species data, sample points, notes and geo-tagged photographs. Field data is uploaded back in the office by syncing over Wi-Fi, stored automatically in SNH corporate repositories and viewed in existing desktop applications. SWIFT provides multiple benefits to SNH. Time taken to carry out SCM is reduced through automatic uploading of data. Data is stored electronically in corporate repositories and is accessible to all staff. Capturing standardised species records electronically will allow us to upload records to national repositories such as National Biodiversity Network. The adoption of new techniques and technology brings wider benefits to SNH as a whole.

Remote Environmental Monitoring through Wireless Sensor Network and Satellite

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The dot.rural WiSE (Wireless Internet Sensing Environment) Project is researching and testing new digital techniques for monitoring the natural environment, underpinned by developments in state-of-the-art communications and low-cost sensor technology. The system combines still and video capture to monitor a remote location, with sensors and remote processing accessible via satellite Internet access. Night-vision capable cameras and sensors can be flexibly combined to allow triggering methods for the capture of imagery to evolve as operational experience is gained.

The demonstration will display the start-to-finish process of sensor activation, communication from the remote site and image capture, to final storage of data in a web database. Visitors will be shown samples of the in-house developed sensors/cameras and will be able to trigger (or try to avoid triggering) capture of images. Remote access will be provided with live streaming from the field site, monitoring of the current sensor values, and the status of the solar-powered battery system. Previously captured sensor data and imagery will be available.

rNBN - Access to over 90 million biological records

Tom August

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The Biological Records Centre (BRC) is part of the NERC Centre for Ecology & Hydrology and is celebrating its 50th anniversary this year. BRC works very closely with the voluntary recording community, principally through support of national recording schemes and societies. Much of the data collected by volunteer naturalists in the UK finds a permanent home at the National Biodiversity Network (NBN). The majority of this data is open access but until now has not been easily accessible to researchers.

This demonstration will introduce the rNBN package. This package, for the programming language R, provides easy access to the species occurrence data in the NBN. The package includes features for filtering data by year, species, location and dataset amongst an array of other features. During the demo we will cover setting up an account with the NBN, installing the R package and requesting data as well as constraints on data use. We encourage people to bring their own laptops so that they can play along.
