



Towards a Community Environmental Observation Network

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The Community Environmental Observation Network (CEON) is dedicated to the development of a free sensor network to collect and distribute environmental data (e.g. ground shaking, climate parameters). The data collection will be done with contributions from citizens, research institutions and public authorities like communities or schools. This will lead to a large freely available data base which can be used for public information, research, the arts,.....

To start a free sensor network, the most important step is to provide easy access to free data collection and – distribution tools. The initial aims of the project CEON are dedicated to the development of these tools. A high quality data logger based on open hardware and free software is developed and a software suite of already existing free software for near-real time data communication and data distribution over the Internet will be assembled. Foremost, the development focuses on the collection of data related to the deformation of the earth (such as ground shaking, surface displacement of mass movements and glaciers) and the collection of climate data. The extent to other measurements will be considered in the design. The data logger is built using open hardware prototyping platforms like BeagleBone Black and Arduino. Main features of the data logger are: a 24Bit analog-to-digital converter; a GPS module for time reference and positioning; wireless mesh networking using Optimized Link State Routing; near real-time data transmission and communication; and near real-time differential GNSS positioning using the RTKLIB software.

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