HELGESON
SCIENTIFIC SERVICES

ERM ENVIRONMENTAL RADIATION MONITOR

The Environmental Radiation Monitor is a environmental surveillance system composed by several stations (Mobil Station or MS) that operates as standalone units transmitting their data via radio to a central point (Base Station or BS).

Each MS is equipped with a radioactive detector that measures the radiation levels in the air, recording the results in their internal memory. The BS can retrieve the readings interrogating each MS through the bidirectional wireless link.

The radioactive detector used is the Geiger-Müller type (GM). Each detector is composed of two GM tubes sensitives to gamma radiation, one for measuring low activity levels in the range of 0.0002-3 mGy/h and another for high-activity levels, this one is intended to generate a alarm condition due to excesive radioactive levels. Spectrometry con be added to the system.

Each MS has a GPS that tracks and stores their position in the internal memory. Additionally the unit can be equipped with a meteorological pod to sense temperature, relativity humidity and atmosferic pressure.

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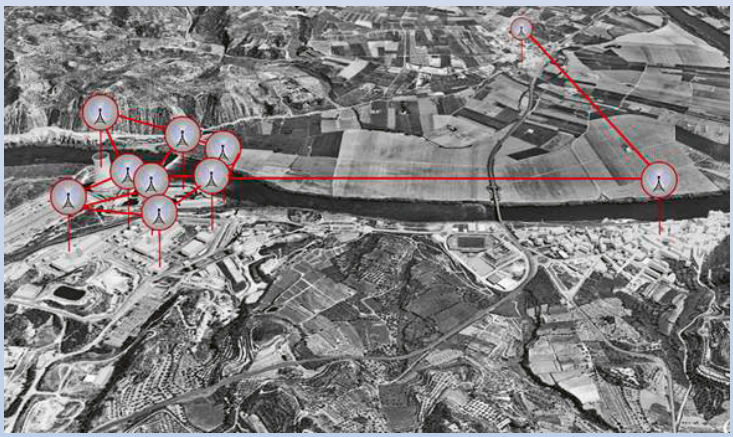
The BS/MS communication is made through a radio link in the 400 MHz band (another frequencies upon request). The standard power used is 1 W in the uplink (MS to BS) and downlink (BS to MS). The communication range depends heavily in the antenna placement and local propagation conditions but it can extend easily to several kilometers.

The systems uses a bidirectional digital protocol that allows the addition of services such encryption, etc.

The BS is equipped with a PC running the user software that allows communicating and managing each MS separately. The user can configurate several parameters and alarms, perform real-time interrogation, or browse each unit internal memory. A graphical interface plots each MS individual position enabling the real-time geolocation.

Each MS is powered from mains, an internal battery allows 48 hours operation during mains disconnection. Additionally the unit can be powered from a photovoltaic panel that recharges the internal battery, allowing continuos operation as a fully standalone unit.

Mechanically each MS is constructed in a ruggerized stainless case adapted to hard environmental conditions. The case is attached to a tripod equipped mast that facilitates the transportation and installation. The system can be designed to comply with different IP requirements. AC can be installed in order to mantain the inner temperature.



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