

Cooperative Research & Development on Environmental Radiation Detection Stations (ERDS)

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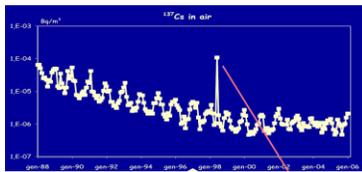


Middle East Scientific Institute for Security, Amman, Jordan, <http://www.mesis.jo/content/6>

Background for the Environmental Radiation Detection Station (ERDS) Project

A number of countries in the Middle East and North Africa (MENA) currently possess nuclear and/or radiological research programs, while many others are considering development of such programs, including expansion into the nuclear energy sector. This heightens the future risk of accidental (or even intentional) releases of potentially harmful radionuclides into the environment. The region currently lacks a comprehensive monitoring system which can detect and characterize such releases, or inform emergency response and consequence management efforts.

The ERDS Project has been established to develop and support the concept of a network of regional radionuclide environmental detection stations. This project is an outcome of the an existing institutional laboratory network created through the Radiation Measurements Cross-Calibration (RMCC) project, a successful annual workshop series that brings together subject matter experts from throughout the region to discuss and address radiation measurement issues of common concern.



In 2012, the ERDS Project brought together key individuals and organizations from three MENA countries to define the issues necessary for design and monitoring system, as well as collection, analysis, sharing, goal was development of a relevant data and to initiate a technical demonstration in at results of this effort will be the possible future implementation network in the region. This effort, engaging regional nuclear engineers and scientists as partners in building a regional radionuclide early warning system, is a demonstration of the United States' commitment to enhancing indigenous capabilities in nuclear safety and security – a commitment voiced in President Obama's Cairo Speech.



Proof-Of-Concept Data Exchange Protocol & Demonstration

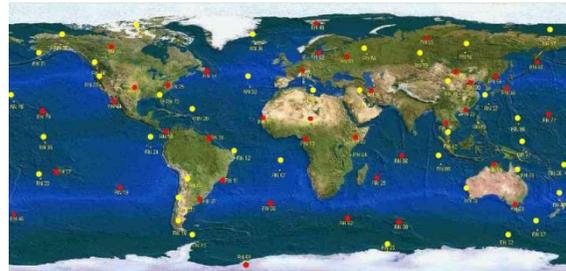


For the 2013 year project goals, Sandia identified several key scientists from the MENA region and formed a cooperative Core Working Group (CWG). The CWG developed the methods and protocols, wrote data exchange protocols relevant to their needs, defined specific requirements, determined what data and information they are able and willing to share, and the methods by which



they will share this data and information in the future.

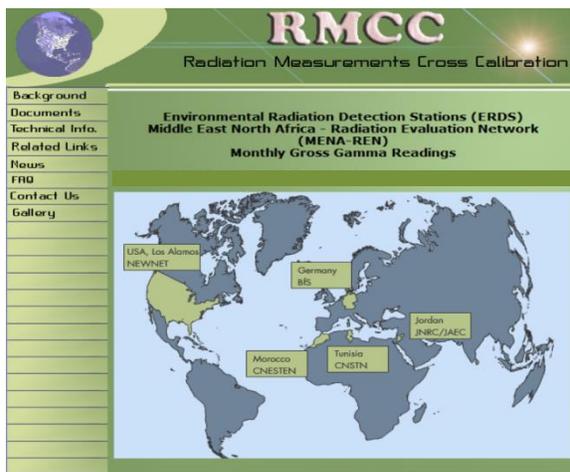
To accomplish this goal, the CWG began by participating in a technical study and training of existing networks in the European Union, including the networks of the German Federal Office for Radiation Protection (BsF), the International Atomic Energy Agency (IAEA), and the Comprehensive Test Ban Treaty Organization (CTBT). Examples from the USA were also analyzed, discussed and studied, including EPA's RADNET network. Subject matter experts from Sandia National Laboratories and the German Federal Office for Radiation Protection acted as a Mentor Working Group (MWG) guiding the CWG through their study and training. Using this information and training, the CWG developed a draft proposal for a MENA data exchange Protocol during the study.



Subsequently, they returned home and further developed the details of the MENA Protocol, refined the draft with the other participants of the CWG via email, and discussed the results with their organizational managements. The Core Working Group presented their recommended Protocol at the ERDS-3 Workshop in Amman, Jordan in June 2013. The workshop was hosted by the Middle East Scientific Institute for Security (MESIS) in collaboration with the Royal Scientific Society (RSS), Amman, Jordan. The assembled Workshop participants were keen to discuss and finalize their ideas regarding the proposed Protocol. In addition, all of the participants expressed interest in further implementation of an environmental radiation data network in the MENA region.

Based on the finalized MENA Protocol, a pilot data-sharing demonstration of agreed data was planned as a proof-of-concept. Currently, several of the CWG have shared initial gross gamma radiation as part of the demonstration. The ERDS project information and shared data are being hosted on the RMCC project's website and email server, which is maintained and hosted by the Jordanian Royal Scientific Society. The ERDS and RMCC Project websites provide information about the projects, past events, and informational documents. The email server is also used to facilitate communication among the ERDS and RMCC participants, including exchanges of the latest technical issues, challenges, dissemination of useful information or reports, and requests for advice.

The ERDS Project is sponsored by the Department of State's Partnership for Nuclear Security (DOS/PNS) and is implemented in collaboration with the Sandia National Laboratories. For further information on the ERDS Project, please contact the Project POCs.



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