

baltrad



BALTRAD support to radiation and nuclear safety

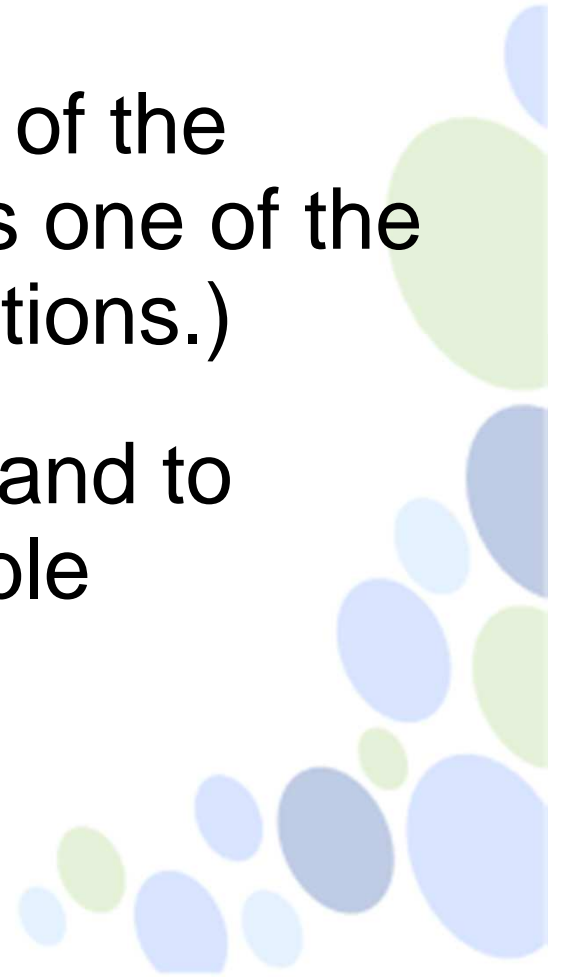
Juhani Lahtinen and Tuomas Peltonen
Radiation and Nuclear Safety Authority (STUK)

Final Seminar, Tallinn, 7 December 2011



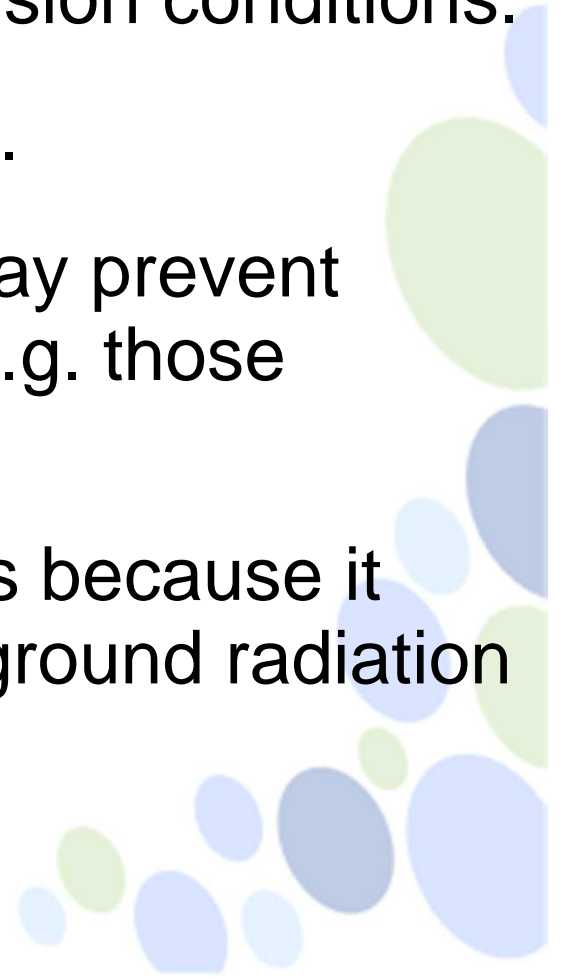
STUK's role in nuclear emergencies (with respect to environmental consequences):

- To create and maintain an overview of the radiation situation. (Of course, this is one of the main tasks also during routine conditions.)
- To analyse the situation as a whole and to prepare recommendations on possible countermeasures.

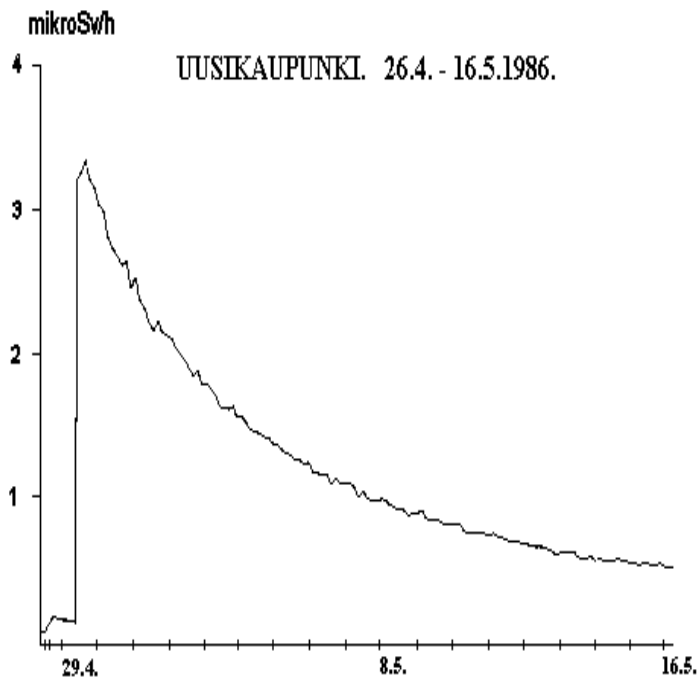


Weather data is very important in major emergencies because:

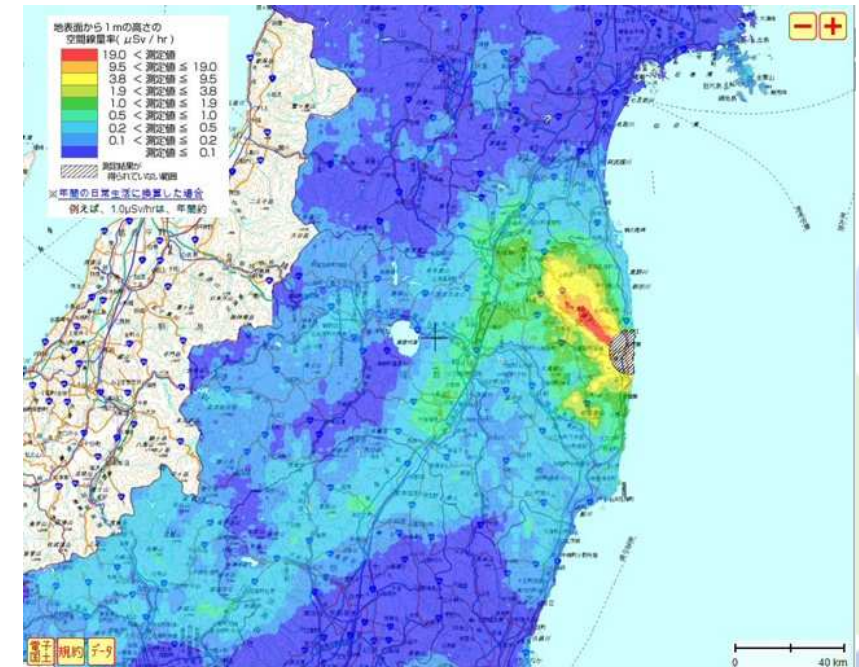
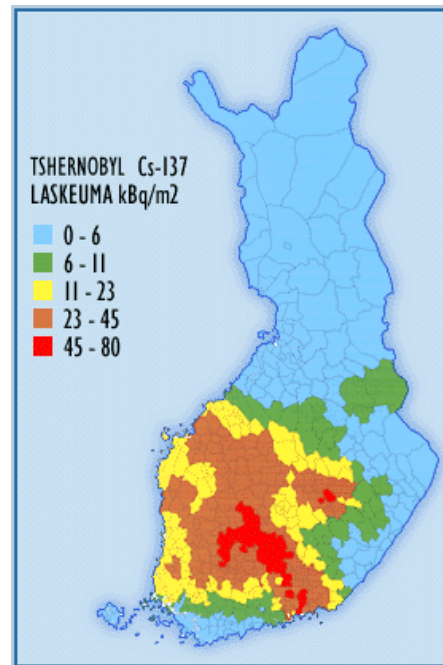
- Wind field and turbulence determine dispersion conditions.
- Rain affects strongly the deposition pattern.
- Poor weather - heavy rain, strong wind - may prevent certain types of radiation measurements (e.g. those performed with airborne platforms).
- Rain data is useful also in routine situations because it helps to interpret higher-than-normal background radiation levels.



Effect of rain:



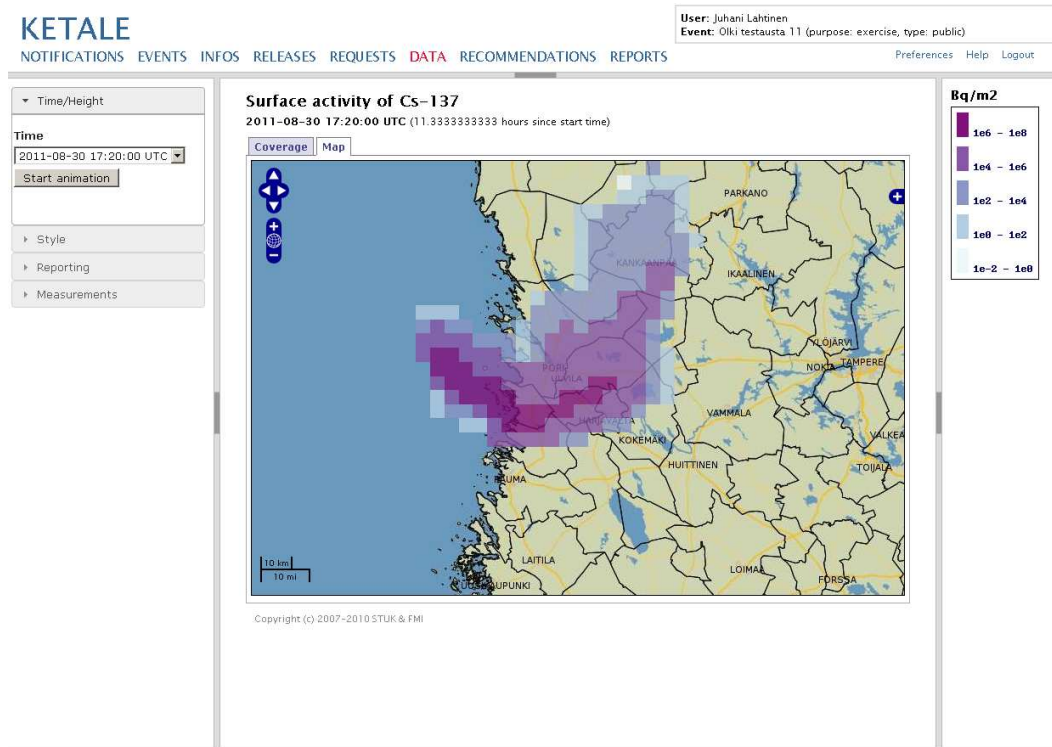
Chernobyl



Fukushima

Rain increases deposition and thus also external dose rates, and creates patchy deposition patterns.

STUK's KETALE system:

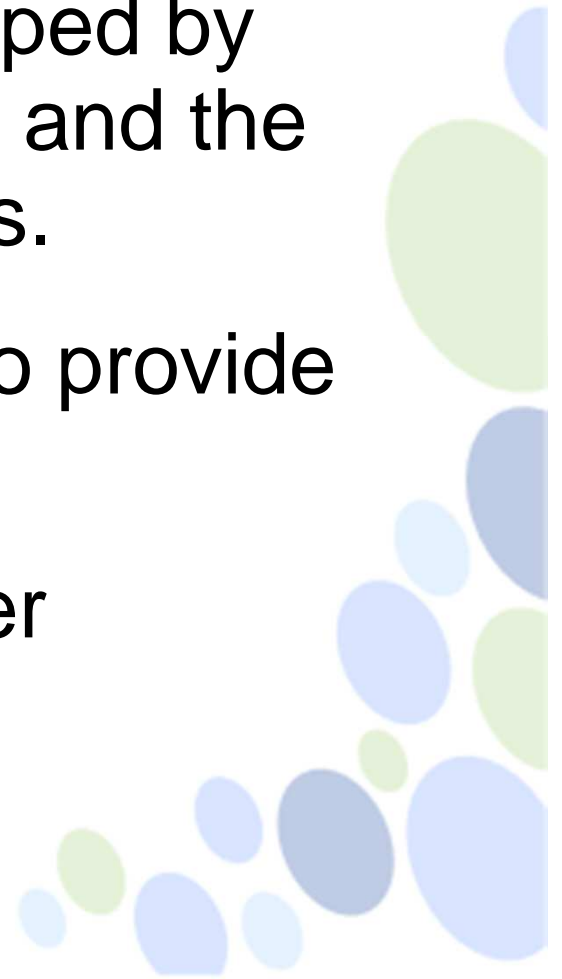


KETALE system is the platform for the management of dispersion/dose calculation results and meteorological data and for preparing countermeasure recommendations in nuclear or major radiological emergencies (developed by STUK and FMI).

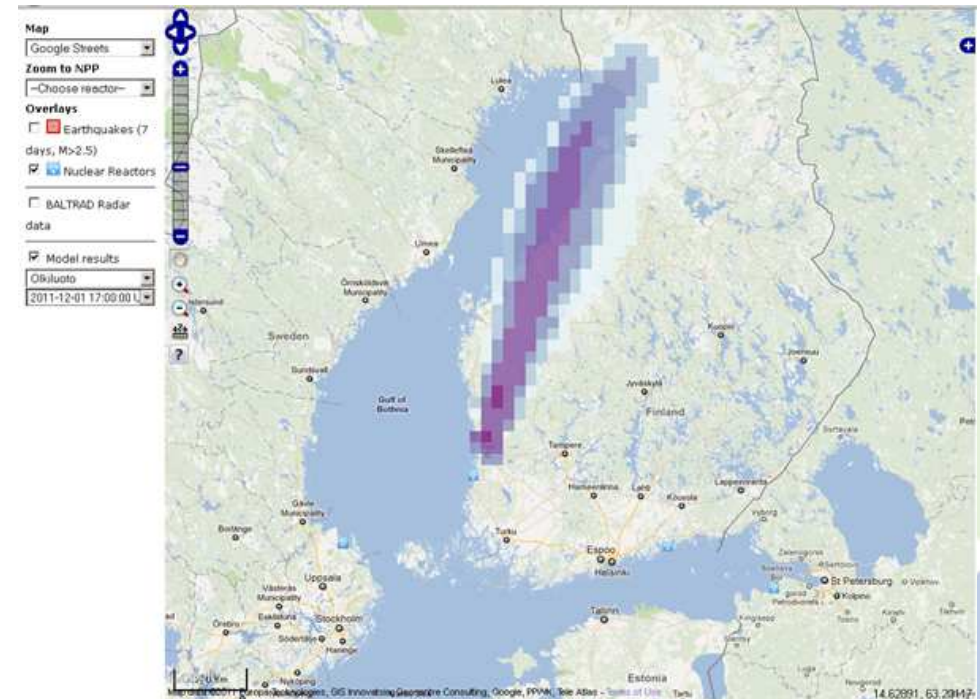
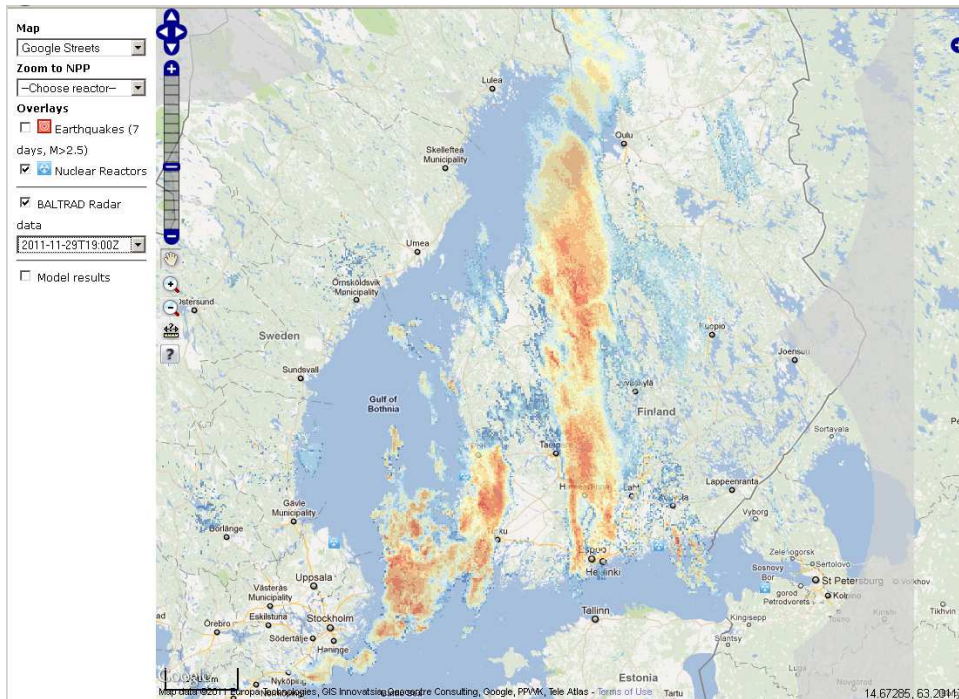
KETALE is to be updated 2012 and the link with BALTRAD data will be finalised then.

Final product: BALTRAD WMS

- WMS is a standard protocol for serving map images over the Internet. It is developed by Open Geospatial Consortium (OGC) and the protocol is supported by many clients.
- STUK has implemented a program to provide BALTRAD data via WMS.
- The program will be available to other BALTRAD members too.

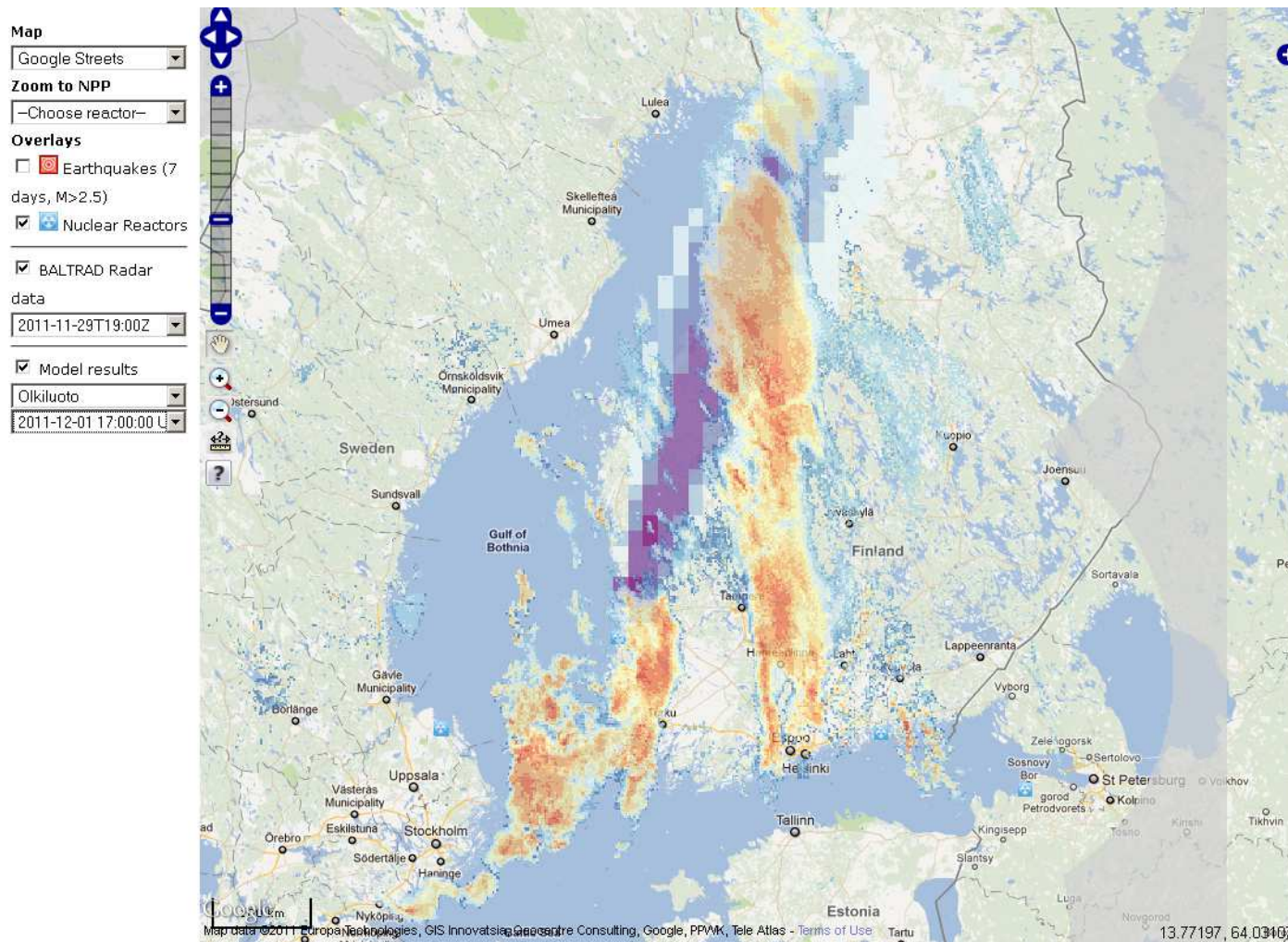


Example (displaying radar data and dispersion calculation results separately):



Note that the dispersion pattern and radar data do not represent the same point of time.

Example (combination of radar data and dispersion calculation data):



Note that the dispersion pattern and radar data do not represent the same point of time.