



REPUBLIC OF ESTONIA
ENVIRONMENTAL BOARD



EESTI-ŠVEITSI KOOSTÖÖPROGRAMM
ESTONIAN-SWISS COOPERATION PROGRAMME

PROJECT: Upgrading of the Radiation Monitoring in Estonia

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Radiation Safety Department
Environmental Board

Environmental Board and Radiation Safety Department



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The Environmental Board falls within the area of governance of the Ministry of the Environment. It is our task to implement the state's policies on the use of the environment and nature conservation and to contribute to the development and improvement of legal acts and other official documents related to the environment.

Radiation Safety Department (17 employees)

Radiation Protection Bureau

- Proceeding licence applications including evaluation of the safety and pre-inspection on site;
- Registries (licences, sources, radioactive waste, nuclear material).

Radiation Monitoring Bureau

- Environmental radiation monitoring in national level (laboratory);
- Early warning system;
- Emergency preparedness;
- Indoor radon measurements;
- Personal dosimetry;
- State dose registry of exposed workers.

Project Information



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Implementation period: 29.05.2012 – 30.04.2016

Total cost: ~ 500 000 eur

Objectives:

- Environmental radiation monitoring in Estonia meets the requirements of European Union Directives and international obligations.
- To improve the effectiveness of the radiation monitoring system in Estonia and to increase its reliability to ensure that the outdoor air and surface radiation levels in normal and emergency situations territory are always known and that in case of emergency the applicable protective actions can be implemented.

Activities



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2014

- **High-volume air sampling station SnowWhite JL-900** (53 040 eur; Senya Oy, Finland);
- **Radiation monitoring network with 15 gamma monitoring stations** (291 858 eur; Envinet GmbH, Germany).

2015

- **HPGe gamma spectrometer (Canberra)** (76 752 eur; UAB Mokslinis-Techninis Susivienijimas Novatex, Lithuania);
- **Two fume hoods with three lockers for chemicals** (16 668 eur; Laboritugi OÜ, Estonia);
- **Renovation of high-volume air filter sampler SnowWhite JL-900 at Narva-Jõesuu + hydraulic press** (23 640 eur; Senya Oy, Finland).

2016

- **Gamma spectrum analysis softwares: Gammavision and Isotopic** (35 280 eur; Gammadata Instrument AB, Sweden).

**BEFORE: air sampling station
at Harku site**



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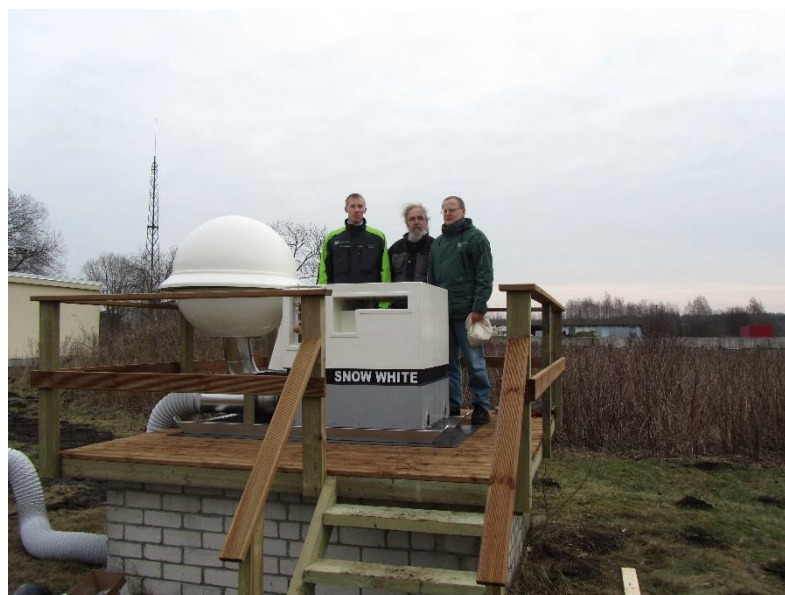
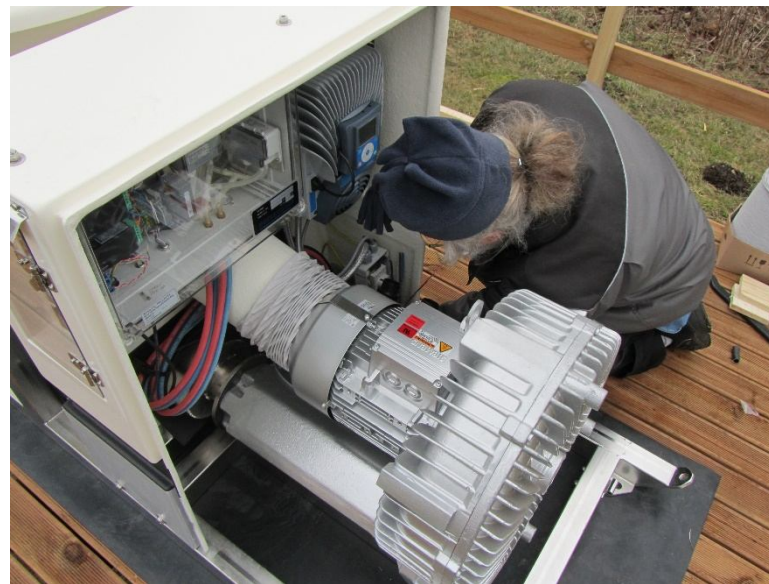
- Operational since ~1990;
- No air volume meter;
- Different sampling method;
- Technical problems;
- No gaseous iodine determination
Capability.



AFTER: high volume air sampler Snowwhite JL-900 in Harku



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BEFORE RENOVATION: high volume air sampler Snowwhite JL-900 in Narva-Jõesuu

- Operational since 1996;
- Technical problems;
- Illegible display.



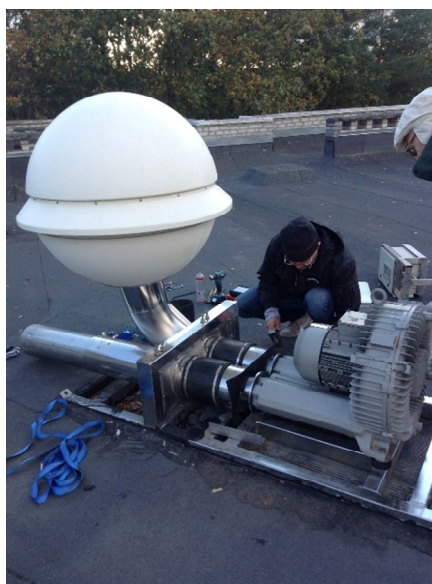
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AFTER RENOVATION: high volume air sampler Snowwhite JL-900 in Narva-Jõesuu



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BEFORE: HPGe gamma spectrometer



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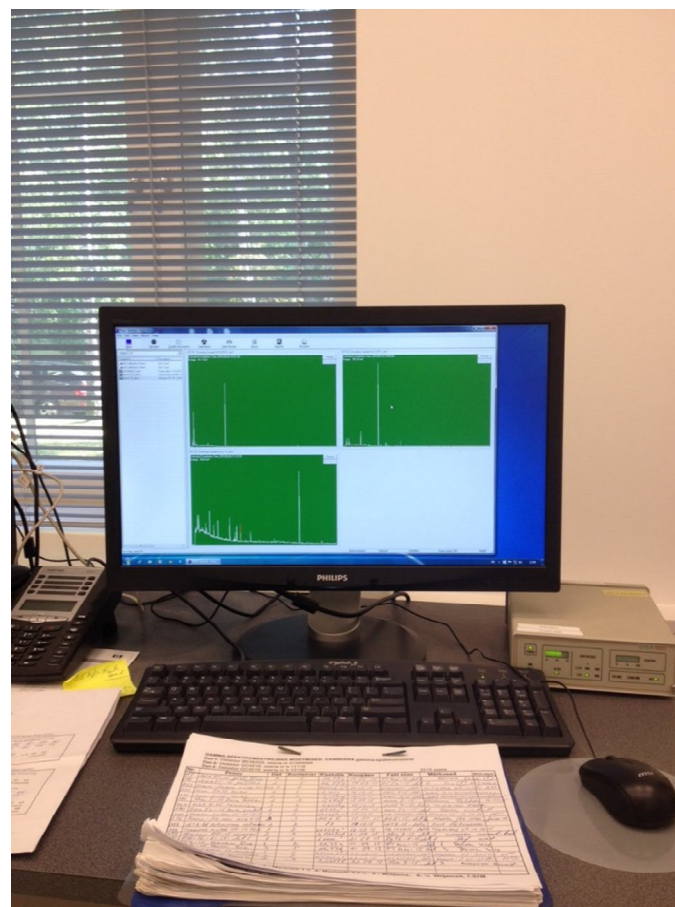
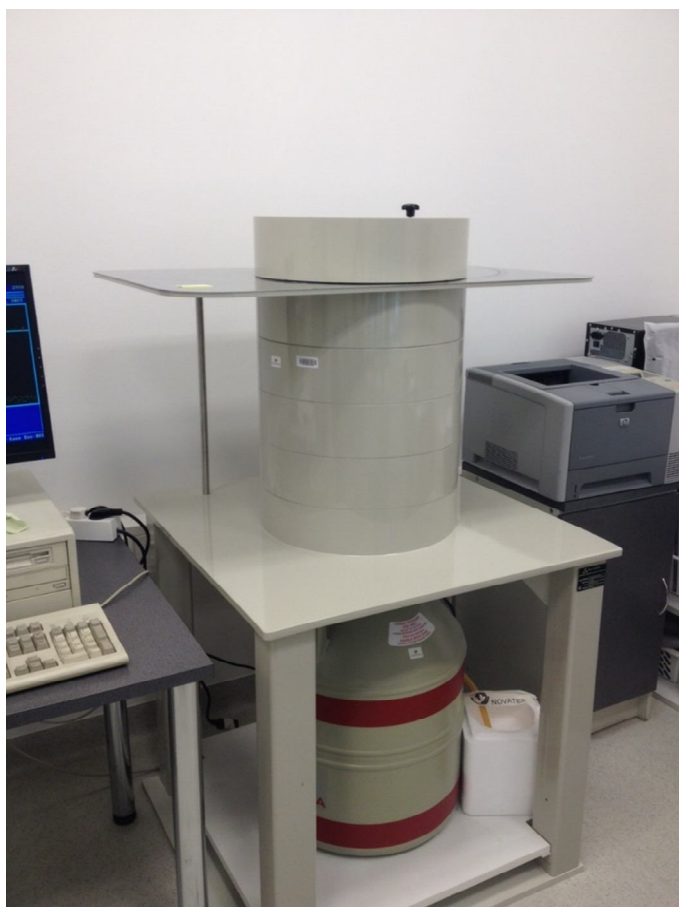
- 2 gammaspectrometers for the monitoring (23 and 10 years old);
- High risk for the interruption of measurements in technical matters;
- Low capacity to analyse samples in emergency situation.



AFTER: HPGe gamma spectrometer (Canberra)



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Two new fume hoods with three lockers for chemicals



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BEFORE

- Operational since 1996;
- There was no special chemical lockers.



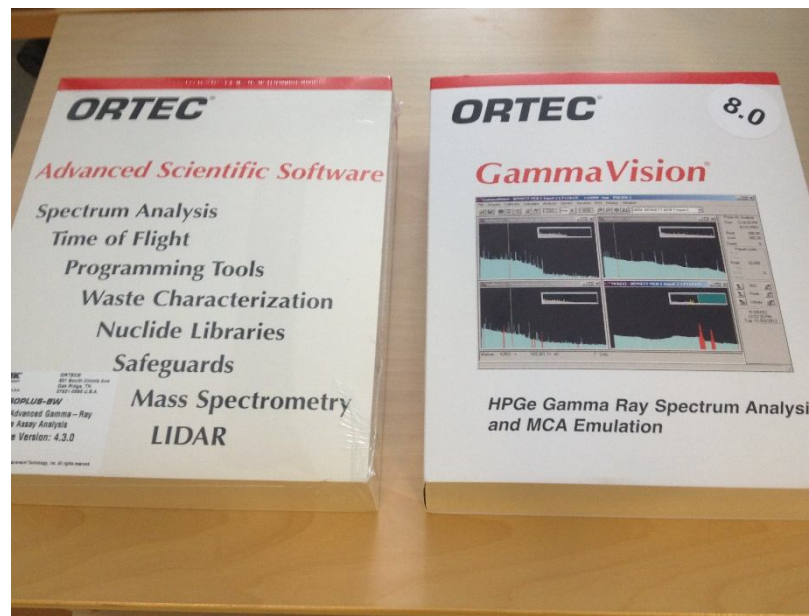
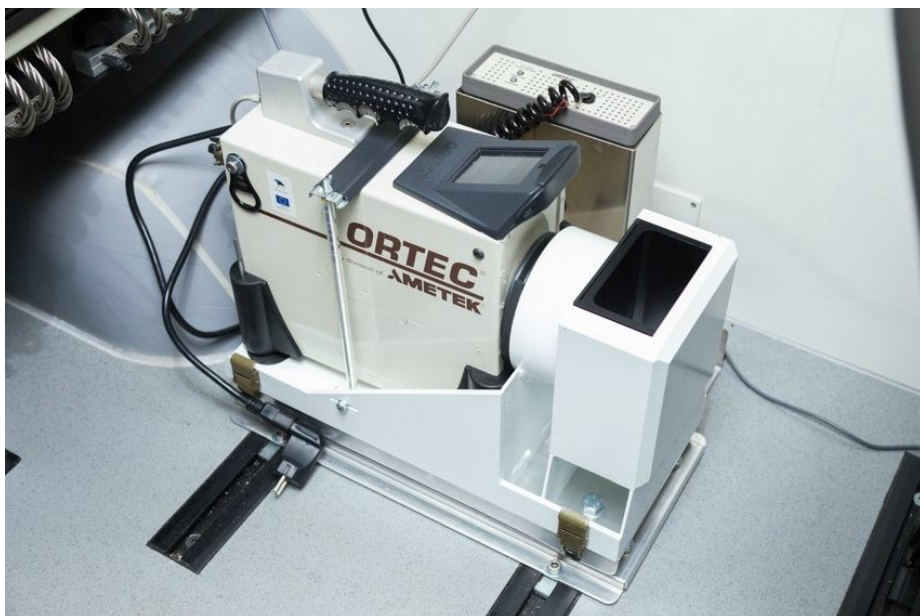
AFTER



Gamma spectroscopy software: GammaVision and Isotopic



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BEFORE: radiation monitoring network with 10 gamma monitoring stations



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- Operational since 1997;
- Only 7 spectrometric stations;
- Technical problems (no know-how);
- No support from manufacturer;
- Problems with alarming;
- Not compatible with our modern IT-systems.

Kärdla	28.03.2013 07:24	28.03.2013 07:21	OK	1.0 hours	10 min.
Kunda	-	-	ERROR	0.2 hours	10 min.
Mustvee	28.03.2013 07:21	28.03.2013 07:17	ERROR	1.0 hours	10 min.
Narva-Jõesuu	28.03.2013 08:14	28.03.2013 08:12	OK	1.0 hours	10 min.
Pärnu	26.03.2013 13:07	26.03.2013 13:04	ERROR	1.0 hours	10 min.
Sorve	28.03.2013 07:54	28.03.2013 07:54	ERROR	1.0 hours	10 min.
Tallinn	28.03.2013 08:15	28.03.2013 08:15	OK	0.2 hours	10 min.
Tyri	28.03.2013 07:54	28.03.2013 07:54	ERROR	1.0 hours	10 min.
Valga	-	-	OK	0.2 hours	10 min.
Voru	28.03.2013 07:54	28.03.2013 07:54	ERROR	1.0 hours	10 min.



AFTER: radiation monitoring network with 15 spectrometric gamma monitoring stations



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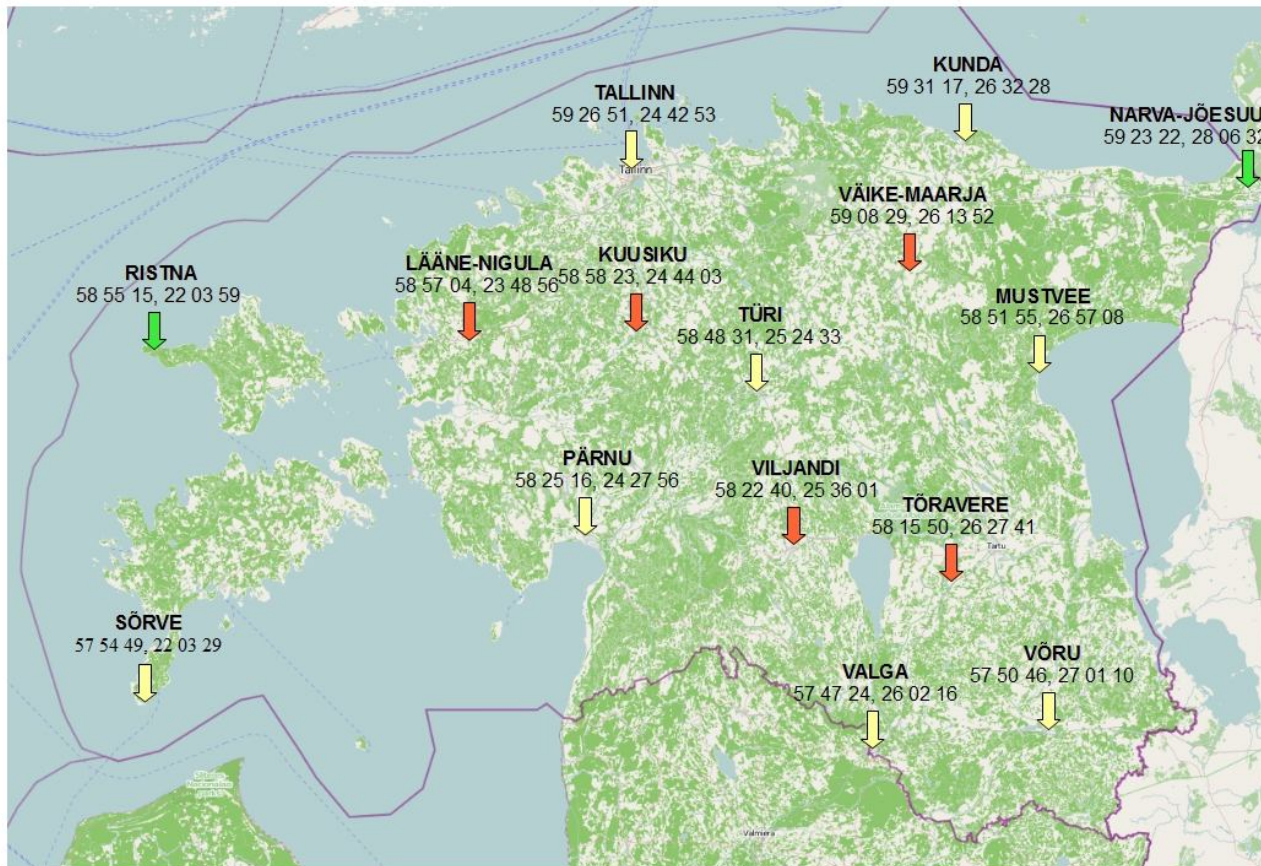


Radiation Monitoring Network at Estonia (Early warning system)



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Yellow and green- old locations
Red- new locations





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Thank you!

Monika Lepasson