

3rd Annual Report

Summary

This reporting period had as main objective evaluation of using UAV platforms to calibrate, validate and complement in situ measurements. Another objective was to continue the work in order to certify the research potential of Romania and also to promote, integrate and ensure the sustainability of Romanian Research capacities as part of European Research Infrastructure for atmosphere remote sensing.

In order to organize intercomparison test flights using ground and airborne equipments, technical modification of UAV (unmanned air vehicle model Wing Cub ARF 60% that belongs to INCAS) was continued. There have been made a number of test flights and also for research of atmospheric microphysical parameters with ATMOSLAB aircraft that belongs to National Institute of Aerospace Research "Elie Carafoli", Bucharest. The aircraft was equipped with two single sensor systems, CAPS (Cloud, Aerosol, Precipitation Spectrometer) and Hawkeye probe particles. There were organized four research flights as follows:

- Bucharest - Timisoara, 20.08.2014;
- Bucharest - Craiova, 07.10.2014;
- Bucharest - Baile Herculane, 23.10.2014;
- Bucharest- Botosani, 24.10.2014.

The campaign held between 1-2 September 2014 was organized in order to achieve synergy studies using airborne and ground parameters. There were used the following ground based measurements located at INOE 2000 headquarter: multichannel Raman Lidar System RALI, aerosol mass spectrometer AMS, spectrometer for continuous measurements of aerosol chemical species ACSM and gas monitors HORIBA. ATMOSLAB performed 3 flights to Clinceni having on board the aerosol particle sizer APS and the optical particle sizer DUST-TRACK.

On 10 - 15 November 2014 was organized "Atmospheric Remote Sensing" ARSS Summer School. The event was held at the Hotel Silva, Busteni, Romania and were invited to participate members of the entire scientific community in the field of remote sensing from Romania. At the event participated 31 people (22 students graduate, doctoral and postdoctoral students) from 8 institutions: five universities (University of Bucharest, Polytechnica University of Bucharest, Babes-Bolyai University of Cluj Napoca, Al. Ioan Cuza University of Iasi, Politehnica University Timisoara), 2 research institutes (National Institute of R & D for Optoelectronics INOE 2000 and National Institute for R & D Aerospace "Elie Carafoli") and a private company (Enviroscopy SRL).

There was strengthen the collaboration between Romanian institutions with complementary expertise in atmosphere remote sensing and there was developed new consortia in order to participate to international projects and networks. There was voted IAGOS logo for Romania.

There were carried out some intensive measurements in the frame of **AROMAT** international campaign (Airborne ROmanian Measurements of Aerosols and Trace gases, 1-13 September 2014 Bucharest and Turceni) and **VOLCEX** national campaign and **LORELAY** campaign (Laser and Optical Remote-sensing of

atmospheric layers (27 October - 4 November 2014 - active and passive remote sensing measurements of in Iasi and Bucharest).

Another event was the organization on September 24, 2014, of a meeting with international partners in order to write an ESA proposal.

Updating the project website was another objective of this reporting period - <http://capesa.inoe.ro>.