



EUROPEAN FACILITY FOR AIRBORNE RESEARCH  
FOR ENVIRONMENTAL AND GEO-SCIENCES

# NEWSLETTER



DECEMBER 2015, ISSUE 15

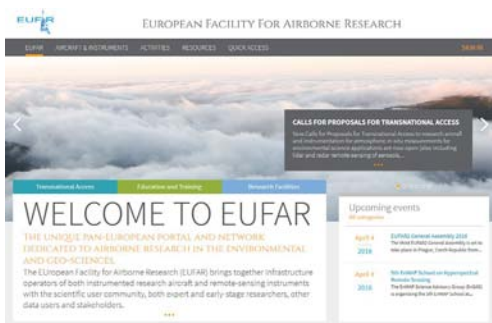
## E-COMMUNICATION

### Launch of new EUFAR website!

With the launch of a brand new website ([www.eufar.net](http://www.eufar.net)) in mid-November 2015, EUFAR aims to improve user experience on the website, which serves as a source of information and interactive platform where users are able to collaborate, learn, share expertise, and apply for transnational access, and education and training funded opportunities within the network. With its newly designed eye-catching interface, the website offers easy navigation and user-friendly functionalities. New features also include sections on news on EUFAR related activities, airborne research stories, careers, photo galleries, and much more.

For existing users, the log-in process will require the resetting of your password. If this is not clear, please visit the [FAQ section](#) to see how to do this. We also invite you all to check and complete your member profile to make sure the information is correct and up-to-date following the data transfer from the old site.

A big thanks to our amazing website development team at the University of Warsaw (EUFAR2 partner) and the EUFAR Office team who have worked so hard to get the new website up and running! We will continue to update content with helpful information, relevant documents, articles, newsletters and announcements. For any questions, suggestions, article suggestions and feedback, please contact us at [bureau@eufar.net](mailto:bureau@eufar.net).



Screenshot of the new EUFAR website

## TRANSNATIONAL ACCESS COORDINATION

### Transnational Access Research Campaigns

At the end of the first reporting period in July 2015, 18 projects had been awarded EUFAR funding and support, out of an anticipated total of 38. Hyperspectral surface-imaging activities continue to be popular and achievable within the limits of Transnational Access (TA) awards – 12 have been supported to date.

A 3rd set of Calls for Proposals were closed in September 2015. This resulted in only 4 new applications. However, two of these propose clustering with one of the nationally-supported flight campaigns that will take place in Namibia in 2016 as part of an international study of regional aerosol properties and aerosol-cloud-radiation interactions. This provides an important opportunity for TA participants to take part in a campaign of potentially high impact that would be well beyond the capacity of TA to support in the absence of such clustering.

The peer-review of these proposals was delayed so that this could be undertaken via the new EUFAR website, which was not yet in full operation by the end of October. However, a large amount of testing of the application and review process was undertaken, working together with the N9EC activity team and the EUFAR Office in order to ensure that the processes functioned correctly. This has enabled several minor bug-fixes and improvements to be introduced prior to the final release of the website to the public.

One of the leading aircraft facilities, which has supported a large number of individual TA projects during the current and preceding EUFAR contracts, is the NERC ARSF Dornier aircraft. Unfortunately, this aircraft has been withdrawn from use by its operator at the end of October 2015. The intention is that the observing capability will be continued by means of transferring the instrumentation to another NERC aircraft, one of the Twin Otters of the British Antarctic Survey, with it continuing to be available for airborne imaging activities during the northern hemisphere summer season. This will inevitably result in a hiatus owing to the need to re-define access costs for this facility, and hence it was not advertised as available in the Sept 2015 Call.

### Advertise with EUFAR today!

To publish airborne research related publications, articles, career opportunities, contact [bureau@eufar.net](mailto:bureau@eufar.net)



The EUFAR2 project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 312609

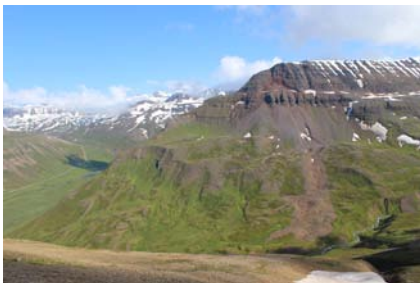


## Remote sensing flight campaigns in Iceland

Author: Susan Conway

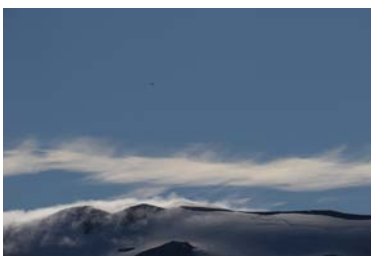
During the month of August 2015, EUFAR supported two airborne remote sensing projects in Iceland. Both flight campaigns were performed by NERC ARSF's Dornier DO228, and airborne VNIR-SWIR-LWIR-TIR hyperspectral data, LiDAR and digital photography data were collected. The two projects were clustered with a pre-existing campaign studying Hekla in south-west Iceland. The first project called HIDHAZ\_N\_ICELAND (The hidden hazard of melting ground-ice in Northern Iceland) aims to study the role of melting ground-ice in triggering landslides and to assess the risk of such failures to infrastructure and population.

For this project airborne data were collected in northern Iceland over 1) a ~500,000 m<sup>3</sup> landslide that happened in 2012 (Móafellshyrna), which was caused (in part) by melting ground-ice, but luckily was away from any habitation, and 2) over Siglufjörður town, where there is a potential risk from future landslides. For the second project called HOLUHRAUN\_HAZ (Assessing the hazard and testing our understanding of environmental and geophysical responses from emplacement of a large volume lava flow field), the aerial data were collected over a new flood basalt eruption in central Iceland, which was emplaced between August 2014 and February 2015. The data will enable more precise quantification of the lava volume and thickness along with characterisation of surface structures, degassing and cooling of a volumetrically significant lava flow field in a rift setting.



*Móafellshyrna landslide in northern Iceland, one of the sites surveyed for the HIDHAZ\_N\_ICELAND project. Photo taken by Susan Conway*

Costanza Morino (team member of HIDHAZ\_N\_ICELAND) GPS surveying at Móafellshyrna landslide in northern Iceland. Photo taken by Susan Conway



*NERC ARSF Dornier aircraft in action in Iceland during HIDHAZ\_N\_ICELAND and HOLUHRAUN\_HAZ re-search campaigns. Photo taken by Gro Pedersen*



*GAMARF TA campaign: two ENEA researchers during a radiosonde launch. The information from the radio sounding was used to integrate the ground-based and airborne measurements.*



*GAMARF TA campaign: The IMK-IFU ultralight aircraft D-MIFU, instrumented for airborne aerosol and radiation research, during its take off at Lampedusa airport. The airborne instruments allowed for the measuring of the longwave irradiance profiles for the first time in the Mediterranean.*

## Results from GAMARF campaign!

The GAMARF campaign, with transnational access flight hours financed by the EUFAR FP7 project (under EC grant agreement 227159), took place above the island of Lampedusa in 2008. The campaign, led by Dr Daniela Meloni from ENEA, sought to estimate the aerosol shortwave and longwave radiative forcing from surface and airborne measurements in the central Mediterranean.

In April 2015, the results of the campaign were published in an article entitled "Altitude-resolved shortwave and longwave radiative effects of desert dust in the Mediterranean during the GAMARF campaign: Indications of a net daily cooling in the dust layer" in the Journal of Geophysical Research. Click [here](#) to access the article.

## MORE success for EUFAR transnational access

The MORE transnational access airborne campaign was aimed at investigating the vertical distribution of aerosol and ozone in a rural coastal area with complex orography. The campaign was funded and supported by the EUFAR FP7 project, and was carried out in conjunction with the validation campaign of the MINNI project (National Integrated Assessment Modelling System for Policy Making, Italy) in Southern Italy in May/June 2010.

The results of the campaign have been recently published in an article entitled "On the complexity of the boundary layer structure and aerosol vertical distribution in the coastal Mediterranean regions: a case study" in the Tellus Series B Journal on Chemical and Physical Meteorology. Click [here](#) to access the article.

*Photos from MORE research campaign, Southern Italy, May/ June 2010: Campaign included EUFAR-funded flight hours on-board KIT's ENDURO aircraft*



## Visit the website and apply today for a transnational access opportunity!!

Transnational access applications are currently being accepted for atmospheric in-situ measurements, airborne imaging for science applications and for the use of small low-cost aircraft, until 31 Jan 2016.

We anticipate at least one further Call during 2016 and one in 2017. Potential applicants are reminded that they can also submit a short Expression of Interest for TA via the website at any time.

### Aircraft and Instruments

All operators have been requested to check and, where necessary, update the information on their instruments and aircraft, and also to update their aircraft planning information up to the end of 2016 on the current EUFAR website to make it easy to identify key opportunities for clustering of TA proposals. For instructions on how to do this, click [here](#).

As EUFAR is a network reuniting all users and providers of airborne research all over Europe, new operators are invited to contact the EUFAR Office if they wish to have their aircraft and instruments published on the EUFAR website. For more information please contact [Olivier Henry](#).

## EXPERT WORKING GROUPS

### EWG Operations & Certification Kick-off Meeting 23 September 2015, NLR, Amsterdam

A first exploratory meeting of the EWG on Research Aircraft Operations and Certification, led by Guy Gratton (FAAM) and hosted by NLR, took place at the Schiphol Airport on 23 September 2015. The meeting served to discuss and agree on the working group's objectives and work plan, and propose projects related to certification, flight permissions and research flying practices, as well as gauge the group's interest on research pilot training and approvals. 8 participants attended the meeting, and a follow-up meeting is planned for February 2016.

### Expert Workshops

Proposals to hold a EWG workshop are strongly encouraged. These workshops involve experts in airborne measurements from the academic and aircraft operator communities, and seek to exchange knowledge on measurement principles, calibration and operation of instruments, data processing and analysis, and to identify gaps and suggest priorities in terms of new developments. EUFAR provides financial and logistical support for up to 2 workshops a year. Interested in organising an expert workshop? Contact the [EUFAR Office](#) for more information.

## TECHNOLOGY TRANSFER

### Expert Working Groups/ TTO joint workshop Frankfurt, 5 February 2016

A one-day workshop bringing together the EUFAR EWGs and the Technology Transfer Office will be held on 5 February 2016 at the Frankfurt Airport Conference Centre. This meeting serves to discuss and decide on promising technologies developed within EUFAR that could be potentially presented to industry partners and SMEs at a future date. For this meeting, a guide on technology transfer issues will also be shared with EUFAR experts to provide a framework for effective dialogue and collaboration between scientists and the industrial community. For more information on this workshop, contact the [EUFAR Office](#).

## EDUCATION & TRAINING

### EUFAR training opportunities

EUFAR is currently accepting TA-training course proposals to host a 10 to 12-day training course (theory and practice) in hyperspectral imaging applications or in-situ sampling with TA flight hours in 2016. If you are interested in hosting such a training course in 2016, you are requested to [apply online](#) for TA-training course and to contact the EUFAR E&T activity coordinator, [Ils Reusen](#) before **31 January 2016**.

Other EUFAR training opportunities (Join an Existing Campaign, Participate in the Design of a New Flight Campaign and Visit an Aircraft/Instrument Operator) are continuously open for online application via the [E&T page](#).

Wiley Series in Atmospheric Physics and Remote Sensing  
Edited by  
M. Wendisch and J.-L. Brenguier

### Airborne Measurements for Environmental Research

Methods and Instruments



### EUFAR Handbook

Reference: Manfred Wendisch & Jean-Louis Brenguier (Eds.), *Airborne Measurements for Environmental Research: Methods and Instruments*, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany, 655pp, 2013

ISBN: 978-3-527-40996-9

## STANDARDS & PROTOCOLS

### EUFAR Metadata Creator (EMC) online version

The EUFAR S&P team is proud to announce the release of the EUFAR Metadata Creator (EMC) online version on the new EUFAR website. The EMC provides users with a complete set of essential metadata. Based on the [INSPIRE](#) initiative, it offers an easy way to store data, and make them compatible and interoperable with other international databases. Over the last few months, the EMC has been tested, and it will continue to be developed in order to facilitate the creation and integration of a metadata file on the website. We therefore invite all interested EUFAR members to test the EMC, currently available on a dedicated server - available [here](#). An offline stand-alone version is also available for users – [sources & binaries](#). For more information, contact the S&P engineer – [olivier.henry@meteo.fr](mailto:olivier.henry@meteo.fr).

## STRATEGY & EUROPEAN INTEGRATION

### Establishing a sustainable legal form for EUFAR

The AISBL working group, represented by 9 partner institutions, met on 15 October 2015 at DLR, in Oberpfaffenhofen, for continued discussions on the EUFAR AISBL, particularly the Activity and Financial Plans. In order to ensure a future for EUFAR, consolidate the network of airborne research facilities and pursue European integration by introducing new stakeholders, part of EUFAR's strategy consists of establishing a legal sustainable structure that will support core activities of the network and develop the open access scheme.

After careful examination of different relevant legal models, EUFAR is working towards establishing itself as an international non-profit association under Belgian law (AISBL). Up to date, the partner institutions have signed the AISBL MoU (Météo-France, CNRS, Met Office, CNR, DLR, VITO, the Polish Ministry of Science & Higher Education, ONERA and CVGZ). The next AISBL working group meeting is set to take place on 15 December via web-conference.

### ICARE2

EUFAR is continuing to work with collaborators in the USA to plan another International Conference on Airborne Research for the Environment (ICARE). It is expected that this will be held in July 2017 at DLR, Oberpfaffenhofen, Germany. The format will be similar to the previous ICARE event in Toulouse in 2010, with a mixture of plenary sessions, workshops, Expert WG meetings and perhaps also a EUFAR Summer School.

## DATABASE

### The EUFAR Flight Finder (EFF)

The EUFAR Flight Finder tool (EFF) was launched in May 2015. This is a geospatial-temporal search interface to locate EUFAR campaign data within the EUFAR data archive at BADC and can be found by clicking [here](#) and via the EUFAR website [tools page](#).

The aim of the EFF is to facilitate the location and identification of EUFAR flights, and to link these to the appropriate data files in the archive. Users can search by geographical area on a map interface, by temporal constraints or using key words or parameter names. Results are displayed on the map; clicking on a flight will show further details and links to the data. Help sheets and a tutorial video are provided to get you started.

Having scanned the data from 13 FAAM and 20 NERC-ARSF flights visible through the EUFAR archive, it was a small step to extend this, to scan the entire FAAM and NERC-ARSF archives also stored at [CEDA](#), yielding 1707 and 11161 hits respectively. These data are now also able to be discovered via the EFF Tool links: [FAAM](#) and [NERC-ARSF](#).

Since the launch of the EFF in May 2015, download statistics show a clear increase of users and activity in the EUFAR archive. All comments and feedback are welcome, email: [support@ceda.ac.uk](mailto:support@ceda.ac.uk).



Screenshot of the EUFAR Flight Finder tool

### Data from EUFAR funded transnational campaigns

New data has been received from the FAAM and INTA-RS teams. Hyperspectral data, for [DEHESHyrE TA campaign](#) 2015, arrived by post from INTA and have been uploaded into the arrivals area from where archival and cataloguing is currently underway. In-situ data from the [SAVEX TA project](#) in Cape Verde have also been uploaded to the FAAM data archive and have been linked internally to be visible via the EUFAR dataset. The EUFAR archive now holds 10.2TB data from 159 flights/flightlines using 12 aircraft/ instruments concerning 44 EUFAR supported projects. To access the EUFAR data archive, click [here](#).

## RESEARCH ACTIVITIES

### Airborne Laser Interferometric Drop Sizer (ALIDS)

The joint research activity ALIDS was conducted under the previous EUFAR contract (2008-2013), and involved the conception, design and development of the ALIDS probe – an airborne spectrometer used to characterise the droplet size in clouds in the range of 20  $\mu\text{m}$  to 200  $\mu\text{m}$ . Led by IRSN, the activity was a joint collaboration involving European scientists from VKI (BE), SAFIRE (FR), UNIMAN (UK), CORIA (FR), COSINE (NL), and CO-MAT (FR). During the project, the probe was successfully tested in the laboratory and on-board of SAFIRE's ATR-42 aircraft.

On 24 November 2015, at the 2nd edition of “Gold Nuggets of Research, Technology and Innovation” event during the Normandie AeroEspace Tech Day, Marc Brunel (CNRS-CORIA), one of the scientists working on ALIDS, received one of the prizes awarded to the 12 new research laboratories/ SMEs for their innovative technologies in the fields of robotics, modelling, materials, simulation and system validation. At the award ceremony, the ALIDS research team presented the ALIDS probe and the EUFAR Project Coordinator, Elisabeth Gérard, presented EUFAR's activities and joint research ventures.

Currently, a version of the probe is being developed to measure high altitude ice crystals by the Pitot probes on airliners under the Airbus project “High Altitude Ice Crystal” (HAIC), which will be advantageous in terms of both security and energy savings.

To find out about the current EUFAR joint research activities, click [here](#).



Normandie AeroEspace Tech Day, 24 November 2015, Rouen, France

Exhibition of the ALIDS probe. From left to right - Pascal Lemaître (IRSN), Marc Brunel (CORIA), EUFAR Project Coordinator Elisabeth Gérard (Météo-France) and ALIDS lead scientist Emmanuel Porcheron (IRSN)



## MANAGEMENT

### Submission of the first periodic report to the EC

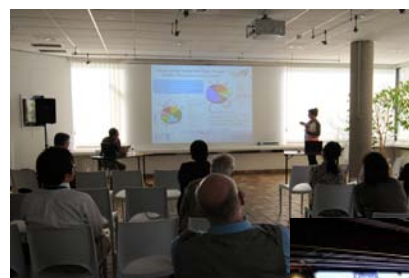
The 31st of July 2015 marked the end of the first EUFAR2 reporting period – an 18-month period, which kicked off with the start of the present contract on 1 February 2014. The EUFAR Office together with activity leaders and project partners finalised the RP1 technical and financial reports, which were submitted on 29 October 2015. The one-month delay after the contractual requirement of 60 days is due to the closure of RP1 incidentally falling in mid-summer. The reimbursement of expenses incurred during RP1 is expected to be received by the Project Coordinator (Météo-France) in early 2016 and distributed to the partners forthwith.

## EVENTS

### PAST EVENTS

#### EUMETSAT Meteorological Satellite Conference Toulouse, 21-25 Sept 2015

The EMSC2015, a forum bringing together over 200 meteorologists, scientists and researchers from around the world took place in Toulouse, in September. This year, the conference focused on advances in now-casting and short-range numerical weather prediction (“limited area modelling”), and preparation for new geostationary satellites. The EUFAR Project Coordinator, Elisabeth Gérard took part in the conference, and gave a presentation promoting EUFAR and airborne research within the satellite community. She pointed out the importance of calibration/validation of satellite instruments, highlighting that over the period 2008-2013, 2.7% of the publications on airborne research in the EUFAR database were dedicated to satellite Cal/Val.



EMSC2015, 21-25 Sept 2015

Left: Project Coordinator, Elisabeth Gérard giving presentation promoting EUFAR

Below: Plenary session



## IAGOS Annual Meeting

Phil Brown (EUFAR Scientific Coordinator) attended part of the Annual Meeting of IAGOS (*In-service Aircraft for a Global Observing System*) held at Météo-France in Toulouse in November 2015. This provided a useful opportunity to gain insight into the transition process to become an AISBL legal entity as IAGOS has already successfully made this step, and to discuss some common issues concerning data (formats, calibration, metadata etc.).

## UPCOMING EVENTS

### EUFAR2 General Assembly 2016 & Mid-Term Review

The 3rd EUFAR2 General Assembly will take place in Prague, the Czech Republic, from 4 – 8 April 2016 bringing together EUFAR's 24 partner consortium and activity leaders. The Mid-Term Review is also set to take place during this week to take advantage of the presence of all the EUFAR2 activity leaders. One or two independent reviewer(s) together with the EC Project Officer will be invited to conduct the review, which consists of a one-day meeting during which each EUFAR2 activity will be presented and assessed. Side meetings dedicated to EUFAR activities are also encouraged to take place to take advantage of the gathering. A big thanks goes to EUFAR partner, the [Czech Globe](#), for volunteering to host the meetings.

### European Geosciences Union General Assembly Vienna, April 2016

The next edition of the EGU General Assembly will be held from 17 - 22 April 2016 in Vienna, Austria. The EGU will bring together geoscientists from all over the world, covering all disciplines of the Earth, planetary and space sciences. The EGU aims to provide a forum where scientists, especially early-career researchers, can present their work and discuss their ideas with experts. The EUFAR Office will be holding a stand at the EGU, to disseminate information on EUFAR and draw interest to EUFAR's activities. We look forward to welcoming you at the EUFAR stand (booth 26)! For more information visit the [EGU2016 website](#).



ENDURO, A MOTORISED MICROLIGHT GLIDER, OPERATED BY THE **KARLSRUHE INSTITUTE OF TECHNOLOGY (KIT)**, AVAILABLE FOR TRANSNATIONAL ACCESS WITHIN THE FRAMEWORK OF EUFAR2.



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