

# ANNUAL REPORT 2009



## European Severe Storms Laboratory

ESSL e. V.  
Münchner Str. 20  
82234 Wessling, Germany

Tel.: +49 151 590 318 39  
Fax: +49 8151 9659 999 11

[eb@essl.org](mailto:eb@essl.org)

<http://www.essl.org>

Wessling, 07 September 2010

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## 1. INTRODUCTION

Severe thunderstorms inflict a total damage of 5 to 8 billion € all over Europe each year.

Even without any climate change impact, this annual amount of damage is far too high to be neglected. The European Severe Storms Laboratory, ESSL, tackles this problem by:

- Fundamental and applied research on severe convective storms in Europe;
- Operation of the European Severe Weather Database, ESWD;
- Organisation of the European Conferences on Severe Storms, ECSS.

The European Severe Storms Laboratory e. V. was founded as a private, non-profit research organisation in December 2006. It is a spin-off of German Aerospace Center DLR in Oberpfaffenhofen, and relies on the long-term expertise of its international team. Presently, the ESSL office is located at *DLR-Institut für Physik der Atmosphäre*.

ESSL recruited its first temporary full-time collaborator in 2008 and enhanced the ESWD database. In 2009, the ESSL was involved in two third-party funded projects: The BMBF-funded project RegioExAKT with Nikolai Dotzek as coordinator was launched in January 2007 for a 3-year period and was extended until 31 May 2010. In December 2009, the EU-funded project EWENT started with the ESSL contributing to 4 of 8 work packages. The ESSL was also active in a EUMETSAT validation study on convective initiation nowcasting. The second half of 2009 saw the organisation of the 5th European Conference on Severe Storms, ECSS, held from 12-16 October 2009, with more than 200 participants from 41 countries.

The present Annual Report reviews ESSL's achievements in its third full business year.

Bernold Feuerstein, ESSL managing Director

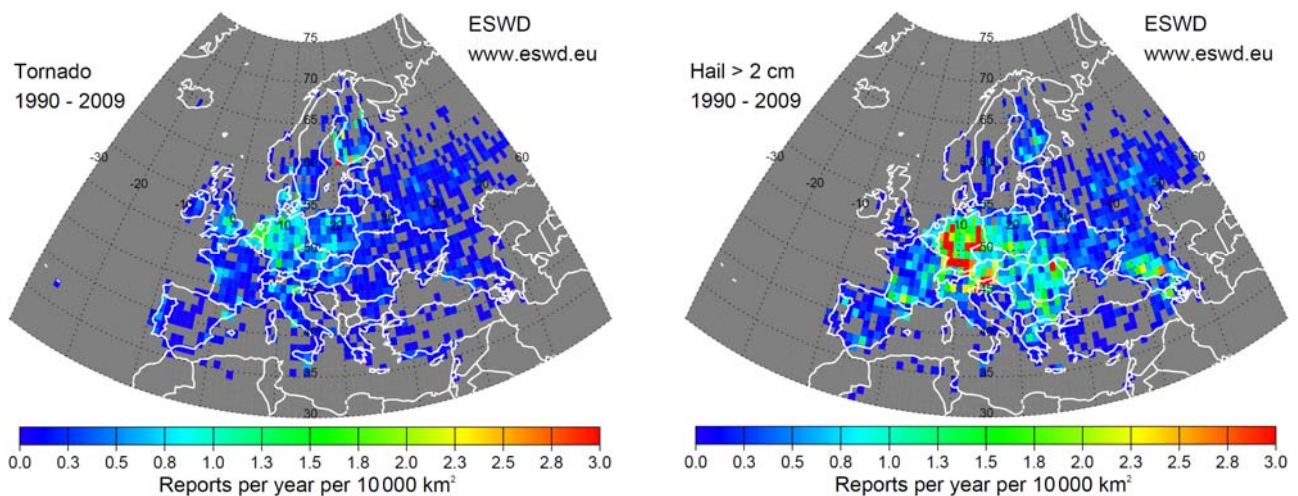
The Annual Report was approved by the

- ESSL Advisory Council on 14 September 2010, and by the
- ESSL General Assembly on 14 September 2010.

## 2. SCIENTIFIC REPORT

### 2.1. SCIENCE

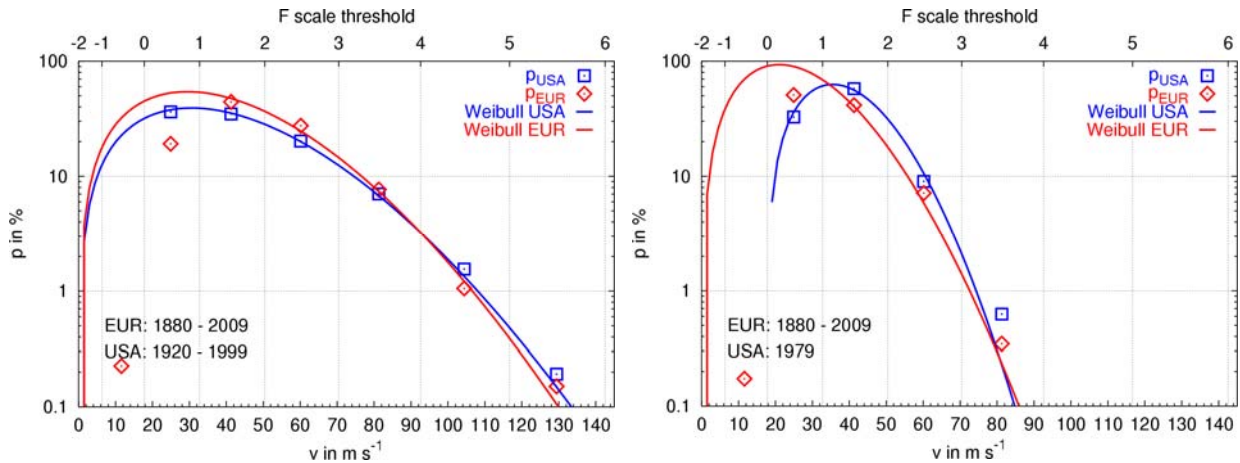
One major building block of ESSL's scientific activities is the application of its European Severe Weather Database (ESWD) to climatological studies of severe thunderstorms in Europe. Other potential applications of the ESWD lie in the verification of forecast and nowcast products, or warnings. The latter applications must be done in collaboration with national weather services or research organisations involved in forecasting or warning, as these are not within the scope of ESSL's activities. Verification studies of this kind, also in cooperation with the German weather service DWD have been described by Dotzek et al. (2009).



**Figure 2.1:** Shorter-term (1990-2009) climatologic maps of tornado (left) and hail (right) incidence in Europe as a primary metric of hazard are given in number of ESWD reports per year per 10,000 km<sup>2</sup> on a 1° x 1° latitude-longitude grid.

Fig. 2.1 shows an enhanced tornado hazard extending from the United Kingdom over the Benelux countries, Germany and Poland towards the Baltic States. For large hail of more than 2 cm diameter, still a regional maximum of the incidence in Germany is seen due to the long time series of dense reporting. But there is also an emergence of other “hot spots” close to mountain ranges, like the Pyrenees, Eastern Alps, Carpathian and Caucasus mountains. This needs further substantiation as the ESWD records grow. Presently, more than 4000 reports are added to the ESWD each year, with growing homogeneity all over Europe. So while the years before 2005 are still subject to an inhomogeneous reporting also reflected in Fig. 2.1, this should improve quickly in the future. Similar results follow for other main ESWD phenomena, see [www.esssl.org/research/](http://www.esssl.org/research/).

The ESWD provides also information about the intensity spectrum of severe events which is after integration over Europe much less affected by regional reporting efficiency. An example is shown in Fig. 2.2 for the long-term wind speed probability distribution of tornadoes and straight-line wind gusts in Europe compared to the USA. The spectra are found to be quite similar with a still more pronounced underreporting of weak events in Europe. A similar analysis for large hail is in progress.



**Figure 2.2:** Long-term (1880-2009) climatologic wind speed probability distribution of tornadoes over land (left, 2657 of 5127 cases rated) and straight-line wind gusts (right, 2312 of 5387 cases rated) events in Europe (red) compared to USA data.

Another current topic in this context is the grading of tornado and other strong wind intensities based on observed damage as e.g. used for the Fujita scale. Besides contributions to a more general discussion of this issue (Dotzek 2009, Doswell et al. 2009), the ESSL proposed an updated verbal wind speed scale description adapted for Central Europe considering wind impact to buildings as well as to vegetation.

### 2.1.1. PROJECTS

#### *RegioExAKT*

RegioExAKT is part of the klimazwei programme of the BMBF. Its main objective is the determination of the trends in occurrence of, and threat by, severe convective storms in (southern) Germany until 2030, as well as the development of adaptation concepts for targeted main users (Munich Reinsurance Group, Munich international airport) on the spatial and temporal scales relevant for their business operations.



The interdisciplinary consortium of 12 institutions started the project in January 2007 with Nikolai Dotzek as coordinator for a three-year period which was extended until 31 May 2010. ESSL's contribution is climatologic research results based on the ESWD data for Germany. As one of its tasks, ESSL has developed an automatized data transfer of severe weather reports by Skywarn Germany into the ESWD. This procedure became operational on 1 July 2009. A RegioExAKT stakeholder workshop took place in Munich on 15 January 2009. For more information, see <http://www.regioexakt.de>

#### *EUMETSAT validation study on convective initiation nowcasting*

The study started in August 2009 and equipped the ESSL with a full scientist position until March 2010. Preliminary results are available online, see

[http://convection.satraponline.org/dokuwiki/doku.php?id=satcast\\_case\\_study](http://convection.satraponline.org/dokuwiki/doku.php?id=satcast_case_study)

The study demonstrates the large potential of ESWD applications for storm detection and forecast or nowcasting/warning verification purposes.

ESSL is also part of the EUMETSAT Convection Working Group (CWG). From 8-10 October 2009, the ESSL was co-organiser of the CWG workshop in Landshut as a side meeting before the 5<sup>th</sup> ECSS (see below). For more information about the working group, see <http://convection.satreponline.org/>



## EWENT

ESSL is part of a consortium of 9 institutions in the new EU project EWENT (Extreme Weather impacts on European Networks of Transport) within the 7<sup>th</sup> Framework programme. The project partners are: VTT Technical Research Centre of Finland (Coordinator), German Aerospace Center, Institute of Transport Economics (Norway), Foreca Consulting Ltd (Finland), Finnish Meteorological Institute, Meteorological Service of Cyprus, Österreichische Wasserstraßen GmbH, World Meteorological Organisation. ESSL contributes to the work packages 1 (Phenomena: Identification and definition of extreme weather events), 2 (Probabilities: Estimation of probabilities of harmful weather events in changing climate and different scenarios), 5 (Evaluation: Impact evaluation and options for risk reduction and control) and 7 (Dissemination). The EWENT kick-off meeting took place in Espoo, Finland, 2–3 December 2009. The project started on 1 December 2009 and will run for 2½ years.



## 2.2. ECSS CONFERENCE AND HEINO TOOMING AWARD

The ESSL hosts (and has initiated) the web pages for the 5<sup>th</sup> European Conference on Severe Storms (ECSS) 2009, see [www.essl.org/ECSS/2009/](http://www.essl.org/ECSS/2009/). ESSL Director Nikolai Dotzek was the main organiser of this conference which took place from 12-16 October 2009 in the *Stadtsäle Bernlochner* in Landshut, Germany. The conference attracted 207 researchers from 41 countries. Current issues of severe local storm phenomena were discussed in almost 100 talks and about 130 poster presentations. More than 10 participants each came from Germany, USA, Spain, Czech Republic and Italy. Although it is a European conference, the large group of US scientist and the growing number of contributions from Japan, India and South America demonstrates that severe storms are in fact a global issue. All members of the ESSL Executive Board contributed to the scientific programme committee (SPC) of the ECSS and helped to assure the quality of the submitted conference presentations as well as of the proceedings prepared later on as refereed publications, in the journal *Atmospheric Research*. In 2009, the still growing severe storms community in Europe and beyond has exceeded the “200 participants” threshold on an even higher scientific level. Since the first ECSS in Toulouse in 2000 this is a remarkable development which emphasizes the importance of severe weather research.



**Figure 2.3:** The participants of the 5<sup>th</sup> ECSS in Landshut (Bavaria) 2009. (Photo: Karl-Heinz Koos, DLR).

The Heino Tooming Award 2009 was presented to Jean-Baptiste Cohuet, Romu Romero, Victor Homar, Veronique Ducroq and Climent Ramis for their presentation “Maritime convective initiation of the severe thunderstorm of 4 October 2007 in Mallorca: Numerical experiments”. The Tooming Award established in 2007 by ESSL and endowed with a prize of 300 € recognizes any outstanding scientific presentation at an ECSS conference by a group led by a European scientist and involving collaborators from at least one other European country.



**Figure 2.4:** Jean-Baptiste Cohuet (middle) receives the Heino Tooming Award 2009 from ESSL’s director and ECSS chair Nikolai Dotzek (left) and ESSL’s deputy director Bernold Feuerstein (right). (Photo: Chuck Doswell)



### 2.3. AWARDS

As an outstanding example, the ESSL-operated European Severe Weather Database (ESWD) was elected one of "365 Landmarks in the Land of Ideas 2009", see <http://www.land-of-ideas.org/>. The Award was presented to ESSL at the opening ceremony of the 5<sup>th</sup> ECSS in Landshut, Germany, on 12 October 2009.



### 2.4. PUBLICATIONS AND OUTREACH

The ESSL web site ([www.essl.org](http://www.essl.org)) has been further developed and partly reorganised. In December 2008, the ECSS 2009 conference website [www.essl.org/ECSS/2009/](http://www.essl.org/ECSS/2009/) was launched. Main emphasis of the web site in general is to present the ESSL and its progress and to raise awareness of the ESWD database with its public web interface [www.essl.org/ESWD/](http://www.essl.org/ESWD/). The ESWD public interface supports 10 languages (English, French, German, Italian, Dutch, Czech, Polish, Finnish, Slovenian, and Bulgarian).

Its three quality control (QC) levels (see Dotzek et al., 2009) are clearly indicated in the ESWD event list: If a report passed the plausibility check (QC0+), it is highlighted in the web-based output table by its corresponding colour in the background (red = tornado, yellow = severe wind gusts, green = large hail, blue = heavy rain, white = funnel cloud, pink = gust front vortex = gustnado, orange: dust devil). New incoming QC0 reports have a grey background. This colour code enhances the clarity of the table and helps the user in identifying specific types of events.

The information flyer and a poster addressing mainly potential new ESSL members or registered ESWD data users as well as tailored presentations for NMHS and private-sector users were further developed, updated and presented at various meetings, workshops and conferences.

In addition to the list of meetings in Sec. 2.3.1, ESSL members also attended the 4<sup>th</sup> Extreme Weather Congress (19–21 February 2009) in Bremerhaven, Germany, with its special audience of scientists and weather services as well as the public and the media. Nikolai Dotzek gave a talk about tornadoes and other local severe weather phenomena in Europe and the related regional hazards.

In a joint project with Skywarn Germany, the verbal description of the TORRO and Fujita scale for Central Europe was supplemented by illustrative photos of typical damage to weak and strong buildings as well as vegetation. Building structure and vegetation characteristics were considered in the description developed by ESSL, Skywarn Germany and Munich Re in 2004, which so far has only been available in German. An illustrated English version was presented at the ECSS 2009.

Besides major severe weather events, the 5<sup>th</sup> ECSS increased the awareness of severe weather in the public resulting in interviews with ESSL members published in various media. A series of press releases was launched during the conference.

In order to enhance the communication within ESSL a newsletter was introduced which appears 2 to 3 times per year.



### 2.4.1. INVITED TALKS

- Groenemeijer, P., 2009: Severe storm forecasting and ESSL, *AustroControl Workshop on Severe Storm Forecasting*, Vienna, 19 March 2009.
- Groenemeijer, P., 2009: ESSL and the European Severe Weather Database, *ESTOFEX Workshop on Severe Convective Storms*, Prague, 27 March 2009.
- Dotzek, N., 2009: Tornados und andere Schwergewitterphänomene in Europa – Welche Regionen sind wann gefährdet? *4<sup>th</sup> Extremwetterkongress*, Bremerhaven, 20 February 2009.

### 2.4.2. PUBLICATIONS

- Doswell, C. A. III, H. E. Brooks, and N. Dotzek, 2009: On the implementation of the Enhanced Fujita scale in the USA. *Atmos. Res.*, **93**, 554-563.
- Dotzek, N., 2009: Derivation of physically motivated wind speed scales. *Atmos. Res.*, **93**, 564-574.
- Dotzek, N., and K. Friedrich, 2009: Downburst-producing thunderstorms in southern Germany: Radar analysis and predictability. *Atmos. Res.*, **93**, 457-473.
- Dotzek, N., P. Groenemeijer, B. Feuerstein, and A. M. Holzer, 2009: Overview of ESSL's severe convective storms research using the European Severe Weather Database ESWD. *Atmos. Res.*, **93**, 575-586.
- Kaltenböck, R., G. Diendorfer, and N. Dotzek, 2009: Evaluation of thunderstorm indices from ECMWF analyses, lightning data and severe storm reports. *Atmos. Res.*, **93**, 381-396.

### 3. TECHNICAL REPORT

#### 3.1. ESWD NEW INTERFACE

Development of the European Severe Weather Database has continued throughout 2009. Most importantly, Version 3, which was launched in November 2008, was expanded with a new capability to accept reports from partners who do not need a synchronized database.

The existing capability of the ESWD to be linked with a remote database proved not to be a feasible option for partners who only desire to enter reports and do not want to synchronize with a database system of their own.

This new possibility was created within the RegioExakt project in which a solution was to be found for the automatic acceptance of reports originating from the mobile-phone based automatic reporting system of Skywarn Germany. This system enables storm chasers who are “in the field” to report severe weather as it happens at by sending the coded observation to a central computer using their mobile phone. This computer, which is operated by Skywarn Germany, in its turn, contacts the new ESWD interface and forwards the report over a secure connection after converting it to the appropriate data format. As of June 2009, this system is in operational use. ESSL is responsible for the interface that accepts the encoded reports.

The new interface allows for the development of similar systems with other storm spotter networks throughout Europe and other organizations that would like to submit digital severe weather reports.

#### 3.2. OTHER TECHNICAL DEVELOPMENTS

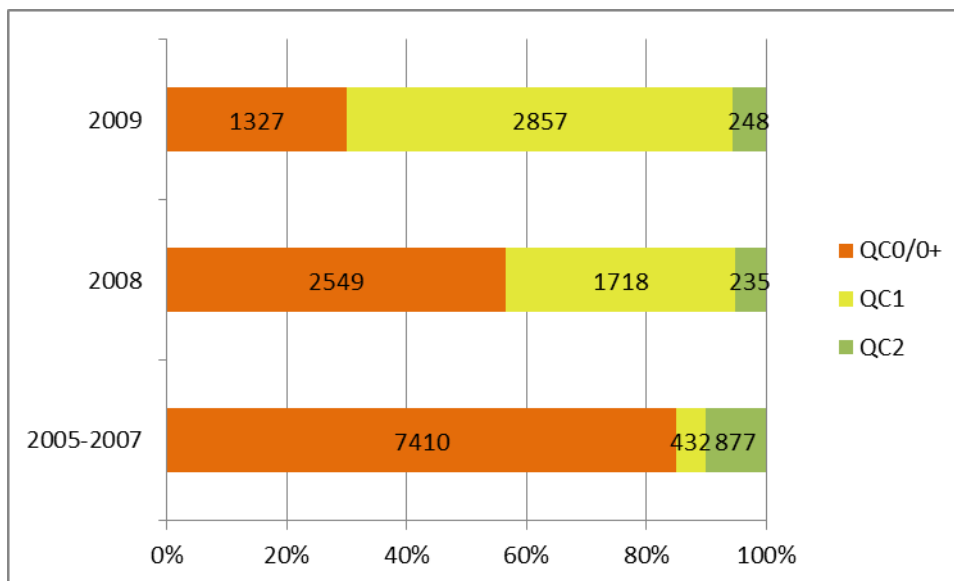
1. In preparation of work to be carried out as part of the EWENT project, the ESSL has started renting and operating a new server in test mode. New versions of the ESWD are developed on this machine, including the expansion of the number of event types, languages and other options. A migration of the ESSL website to this machine is planned.
2. In order to accommodate payments for the ECSS 2009 and donations by credit card, the ESSL opened a payment portal with the company Payone. Since, a large number of credit card transactions has taken place: 54% of the registration fees for the ECSS conference was paid by credit card.
3. The website was expanded by a section for the ECSS 2009 conference. Besides payments, abstract submissions and the registration procedure were carried out through the website. All abstracts from the conference will remain downloadable from the website.

#### 3.3. ESWD QUALITY-CONTROL

ESSL performs quality control of new reports in the data base supported by its partners on a national or regional level. The quality control procedure primarily consists of assigning the appropriate QC-level to each report. These QC- or quality control levels were defined by Dotzek (2009), as follows:

Acronym	Designation	Description	Assigned..
QC0	as received	new report, quality-control pending	...automatically, by general public
QC0+	plausibility checked	the report is plausible, given the overall meteorological situation in, or data from the affected region and timeframe.	...by partner organisation, partner NHMS or ESSL
QC1	report confirmed by reliable sources	only some aspects of the report are still under discussion	...by partner organisation, partner NHMS or ESSL
QC2	event fully verified	all information available about this event is verified, consistent and comes from reliable sources.	...by partner NHMS or ESSL

In 2009, ESSL was able to invest more resources than ever quality control. From May onward a half position was filled at ESSL dealing purely with data quality control. This, in addition with quality control efforts by ESSL's partners has led to a marked increase of events that could be confirmed by reliable sources (QC-level 1) as shown in Fig. 3.1.



**Figure 3.1:** The distribution of QC-levels of recent ESWD reports.

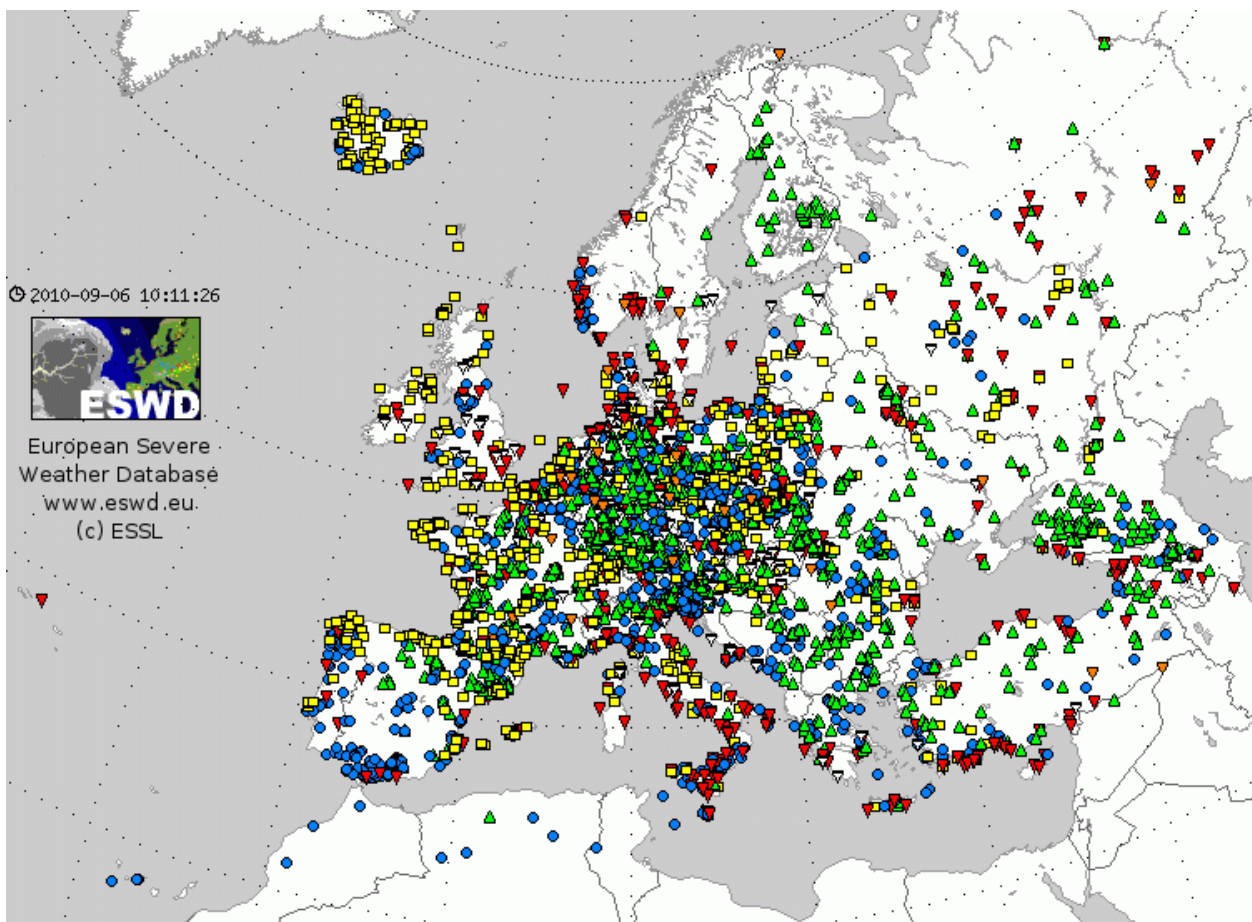
#### 3.4. NEW PARTNERS AND USERS

In 2009, ESSL could welcome two new partners at the level of official (hydro-) meteorological services, to wit: Austro Control, Austria's Air Navigation Services Organization and ARPA-FVG, the Regional Agency for Environmental Protection in the Autonomous Region Friuli Venezia Giulia (Italy).

Besides NMHS, ESSL could welcome a number of other organisations as collaboration partners. These are Skywarn Polska (Poland), the Associazione Thunderstorms (Italy), Thunderstorm Team (Italy), and the Stormhunters Austria.

### 3.5. ESWD DATA VOLUME: TOTAL AND 2009

In 2009 another 4432 reports were entered into the ESWD database, so that the total number of contained reports until the end of 2009 adds up to 26669. Fig. 3.2 shows all reports of 2009. The distribution of reports becomes more homogeneous each year, with a high coverage of reports over France, the Benelux, Germany, Poland, the Czech Republic, Slovakia, Slovenia, Italy and the Alpine countries. It is in these countries that ESSL's partners are particularly active.



**Figure 3.2:** All reports of 2009 (n=4432; requested at 6 Sep 2010).

## 4. FINANCIAL AND ADMINISTRATIVE REPORT

The goal of the financial management in 2009 was to ensure a stable development, to secure the non-profit-status of the ESSL, and before all, to provide the necessary funds for the three statutory purposes of the ESSL:

- Advance meteorology and related sciences in the field of research on severe convective storms and extreme weather events on a European level;
- Operate and extend the European Severe Weather Database (ESWD);
- Support or organise the European Conferences on Severe Storms (ECSS).

### 4.1. OVERVIEW

2009 was the first year with ESSLs accounting being audited by an independent and sworn certified financial auditor in Munich: Ohland und Partner GbR, WP/vBP/StB, Pacellistr. 4, 80333 München, Germany.

Therefore the annual accounts for 2009 are shown in the way our financial auditor prepared them for us and delivered them to us. See next paragraph 4.2 for details. The summarizing certificate for accounting of our certified financial auditor states: "As requested we acknowledge, that the financial reporting was duly developed from the provided accounting figures. Our activities do not give reason for any doubt in correctness and conclusiveness of bookkeeping. With kind regards (Steuer) Vereidigter Buchprüfer Steuerberater". The original certificate was duly forwarded to the Advisory council.

In 2009 due to the onset of more and more wage accounting, an external payroll accountant was mandated for the first time in ESSLs business life. Paper works and bureaucratic handling of taxes and social insurances turned out to excel ESSLs internal administrative capacities.

In 2009 the ESSL has been employer for one full time scientific staff member (EUMETSAT project), three part time employees (ESSL Director, ESSL Treasurer and ESWD quality control manager), and two so-called "*Mini-Jobbers*", a form of minor employment according to the German law (ESSL Deputy Director and IT Developer). So in total 6 employees were engaged for ESSL, at least for some time of the year.

According to the three main statutory purposes of ESSL, the accounting and controlling and planning have been carried out on the basis of cost centres. As required by the tax authorities, these distinguish also between the ideational branch of ESSL (*Ideeller Bereich*, i.e. management of the association) and its branches directly serving the statutory purposes of the ESSL (*Zweckbetriebe*). Thus, the cost centres comprise:

- Cost centre 0: Ideational field of activity;
- Cost centre 1: ESSL fundamental and applied research;
- Cost centre 2: ESWD data and research;
- Cost centre 3: ECSS conferences.

#### 4.2. FINANCIAL STATUS 2009

The third full accounting year was dominated by further establishing administrative structures (preparation of extended labour timesheets and travel/office expenses forms) and the further build-up of a thorough accounting (start of cooperation with certified financial auditor), conforming to the law and tax regulations and allowing efficient controlling by the Treasurer. The accounting for 2009 can be found in the Attachment A.1.

Some figures out of the annual accounts:

17.025,- EUR of membership fees were obtained, more than twice as much as in 2008.

122.238,40 EUR (7 times as much as in 2008) were obtained in projects (67.467,62 EUR), for ECSS fees (33.370,78 EUR) and for ECSS sponsoring (21.400,- EUR).

62.358,33 EUR of expenses summed up on the other hand in this sector (the major cost factors were travel expenses (26.107,34 EUR) and direct ECSS event costs (21.383,95 EUR)).

For personnel costs 20.222,27 EUR for salaries and 11.381,23 EUR for social security and taxes had to be paid in the “special purpose activities” sector (see annual report 2008 for more details regarding our cost centres). Much of these income and expenditures were generated by a single source: ECSS 2009 in Landshut. Also some of the “other business activities” originated out of this, e.g. the income and expenditures related to the conference dinner.

In general ESSL has grown noticeable. Its size was in 2009 well comparable to a fully established small business enterprise.

At the end of the business year liquid assets at our bank accounts amounted to 78.138,36 EUR (compare: 17.538,52 EUR at the end of 2008). In summary, the financial figures for 2009 showed a further upward trend.

**The annual result is a positive 60.599,84 EUR, nearly 6 times as much as in 2008.**

The financial planning for 2010 foresees quite stable financial levels with slightly more expenditures than income. Therefore some of the reserves will become smaller in 2010. Further growth depends on the overall development of ESSL towards the year 2011.

#### 4.3. ADMINISTRATIVE REPORT

ESSL maintained a fully developed administration in compliance with its objectives:

Bookkeeping, financial and salaries transactions, management of contracts and invoices, membership and contact data administration, project planning and project budgeting, long term budgeting, staff and working timesheets administration, user administration – to name some important ones. The development of a general ESWD user agreement went on and will extend well into 2010.

The regular ESSL General Assembly (GA) took place as a side meeting of the ECSS 2009 in Landshut, Germany, on 15 October 2009.

The main topics were the report by the Executive Board and minor amendments of the Articles of Association:

§ 17.1: The number of Advisory Council members was reduced from 9 to 6 (no “other user” group any more).

Since ESSL has passed its starting period and all boards are by now fully represented, the “Introductory and transitional provisions” of the Articles of Association were omitted.

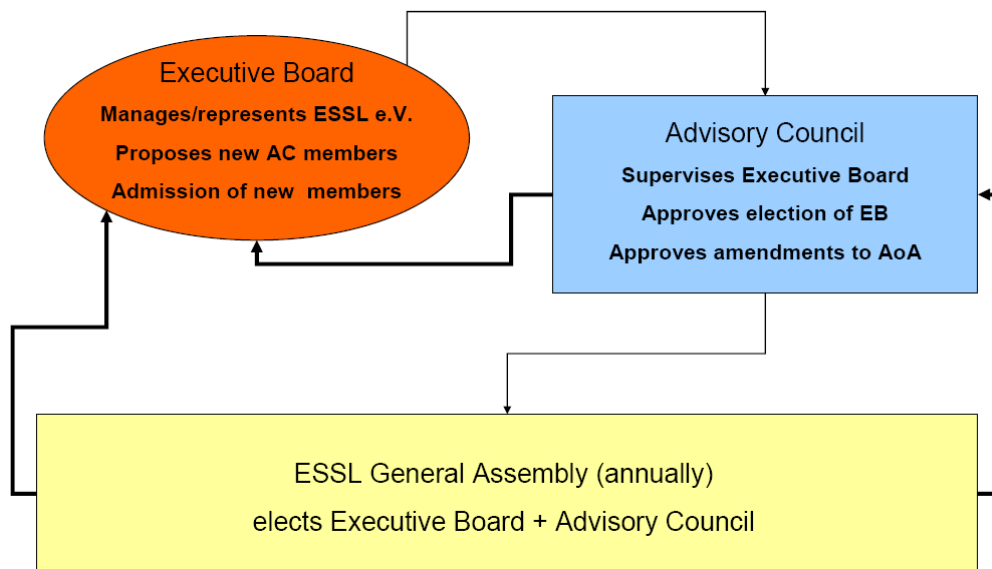
8 Individual Full Members, one Individual Supporting Member and one Institutional Full Member joined ESSL in 2009. So in total at the end of the year, the ESSL had

- 26 Individual Full Members,
- 1 Individual Supporting Member,
- 3 Institutional Full Members,
- 2 Institutional Supporting Members.

The complete member list is shown in the Appendix A.2.

#### 4.4. EXECUTIVE BOARD AND ADVISORY COUNCIL

The Executive Board and the Advisory Council are two of the three bodies forming the ESSL. Fig. 4.1 outlines these and their responsibilities.



**Figure 4.1:** Bodies of the ESSL. The Advisory Council consists of six members from two groups (three members each): (1) Science, (2) NMHS / EUMETNET.

##### 4.4.1. EXECUTIVE BOARD

The Executive Board members listed below were introduced in greater detail in the Annual Report 2007. Their current period of office will terminate by the end of 2010, with Executive Board elections at the 2010 General Assembly.



**Dr. Nikolai Dotzek**, Director.

**Dr. Bernold Feuerstein**, deputy Director.

**Dr. Pieter Groenemeijer**, Technical Director.

**Mr. Alois M. Holzer**, Treasurer.

#### 4.4.2. ADVISORY COUNCIL

Since the 2008 General Assembly, six ESSL Advisory Council members are in office in the Science and NMHS groups. The Advisory Council members were introduced in detail in the 2008 annual report.

Science group:

**Dr. Vincenzo Levizzani** (CNR, Italy)

**Prof. Dr. Daniel Rosenfeld** (HUJI, Israel)

**Prof. Dr. Robert Sausen** (DLR, Germany), elected chair of the Advisory Council

NMHS / EUMETNET group:

**Prof. Dr. David M. Schultz** (FMI, Finland)

**Dr. Michael Staudinger** (ZAMG, Austria)

**Dr. Gerhard Steinhorst** (DWD, Germany)



## A. APPENDIX

### A.1 ANNUAL ACCOUNTS 2009

#### **Ohland & Partner GbR**

Wirtschaftsprüfer  
Vereidigte Buchprüfer  
Steuerberater  
München

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### **Allocation of Profit 2009 due to German Tax Regulations (Financial Reporting 2009)**

and

### **Verification of Compliance with Local Regulations for Non Profit Organisations**

**European Severe Storms Laboratory e. V.**

Münchner Str. 20  
82234 Wessling

Germany

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Dipl.-Betriebswirt (FH)  
**KLAUS-PETER OHLAND**  
Vereidigter Buchprüfer  
Steuerberater

Diplomkaufmann  
**HUBERTUS STEUER**  
Vereidigter Buchprüfer  
Steuerberater

Diplomkaufmann  
**MARTIN HABERKORN**  
Wirtschaftsprüfer  
Steuerberater

## Record of accounts for the tax profit statement for the period from 01.01.2009 to 31.12.2009

### European Severe Storms Laboratory e. V.

Wessling

Account	Description	Euro	Financial year Euro	Prior year Euro
<b>NON PROFIT SECTOR</b>				
<b>Non tax relevant income</b>				
2110	Contributions from members Contributions from members		17.025,00	8.205,00
2455	Other non tax relevant income Travel expenses		0,00	120,55
<b>Non tax relevant costs</b>				
<b>Depreciation</b>				
2503	Write-down of low-value assets coll.item		261,20	60,80
<b>Personnel costs</b>				
2552	Salaries	7.175,17		0,00
2553	Wage taxes	1.418,88		0,00
2555	Statutory social security expenses	2.619,35		0,00
2558	Anchillary labour costs	<u>0,00</u>	11.213,40	<u>602,00</u>
<b>Travel expenses</b>				
2560	Refund of travel expenses		1.727,40	2.614,79
<b>Other costs</b>				
1872	VAT on int-Cmm no input tax deduction	11,49-		0,00
2701	Office supplies	614,31		196,20
2702	Postage, Telephone	82,55		0,00
2705	Incident monetary transaction costs	25,00		0,00
2743	Hardware and Software maintnc. exp.	227,94		0,00
2753	Insurance premiums	81,00		0,00
2806	Advertising costs	0,00		438,97
2808	Entertainment expenses	0,00		17,50
2809	Employee travel expenses	503,10		0,00
2894	Legal and consulting cost	2.509,12		0,00
2895	Other levies	29,99		634,28
2902	Compensated and split-up costs	3.069,85-		0,00
2935	Int-Cmm. acq. no input tax and 19 % VAT	<u>71,95</u>	1.063,62	<u>0,00</u>
				1.286,95
<b>TAX EXEMPT POSTS</b>				
<b>Non-profit sector (tax exempt)</b>				
<b>Neutral income</b>				
<b>Donations</b>				
3220	Donations in cash	325,00		0,00
3227	Donations in kind without receipt	<u>227,94</u>	552,94	<u>0,00</u>
<b>ASSET MANAGEMENT</b>				
carry forward			3.312,32	3.761,01

**Record of accounts for the tax profit statement for the period from 01.01.2009 to 31.12.2009**
**European Severe Storms Laboratory e. V.  
Wessling**

Account	Description	Euro	Financial year Euro	Prior year Euro
	carry forward		3.312,32	3.761,01
	<b>Income</b>			
	<b>Free of tax income</b>			
4153	<b>Interest earnings and other capital gains</b> Interest and capital gains		109,18	78,83
	<b>OTHER SPECIAL PURPOSE ACTIVITIES</b>			
	<b>Revenue</b>			
6005	Development of data and software VAT 7 %	67.467,62		8.025,00
6010	Entrance fees	33.370,78		0,00
6012	3rd prty donations (sponsoring) VAT 7%	21.400,00		0,00
6020	Research	<u>0,00</u>		<u>9.450,00</u>
			122.238,40	17.475,00
	<b>Other income</b>			
6065	Income from fringe benefits	17,00		0,00
6070	Grants for events	<u>33.000,00</u>		<u>0,00</u>
			33.017,00	0,00
	<b>Material costs</b>			
	<b>Costs of services received</b>			
6180	Costs of received services	5.950,00		4.879,00
6183	Purchased services	<u>0,00</u>		<u>49,94</u>
			5.950,00	4.928,94
	<b>Personnel costs</b>			
	<b>Wages an salaries</b>			
6200	Wages and salaries	14.931,40		5.325,00
6215	Casual labour wages	<u>5.290,87</u>		<u>0,00</u>
			20.222,27	5.325,00
	<b>Social contributions</b>			
6250	Statutory social security expenses	7.382,29		0,00
6255	Wage tax	<u>3.998,94</u>		<u>0,00</u>
			11.381,23	0,00
	<b>Other operating expenses</b>			
6300	Other operating expenses	58,00		0,00
6305	Entertainment expenses	345,70		0,00
6310	Travel expenses	26.107,34		360,95
6315	Employee travel exp.add. substnce costs	48,00		0,00
6320	Employee travel expenses	1.347,30		0,00
6328	Event costs	21.383,95		0,00
6340	Administration costs	725,28		0,00
	carry forward	50.015,57	121.123,40	11.060,90

**Record of accounts for the tax profit statement for the period from 01.01.2009 to 31.12.2009**
**European Severe Storms Laboratory e. V.  
Wessling**

Account	Description	Euro	Financial year Euro	Prior year Euro
	carry forward	50.015,57	121.123,40	11.060,90 360,95
	<b>Other operating expenses</b>			
6341	Postage, Telephone and office supplies	134,39		0,00
6342	Newspapers, books	621,00		0,00
6343	Hardware and Software expenses	380,12		0,00
6345	Deductible gifts	465,65		0,00
6355	Compensated and split-up costs	2.291,36		0,00
6364	Consulting costs	1.773,10		0,00
6365	Proportionate VAT payments	492,64		38,96
6366	Patent attorney costs	<u>6.184,50</u>		<u>0,00</u>
			62.358,33	321,99
	<b>OTHER BUSINESS ACTIVITIES</b>			
	<b>Revenue</b>			
8000	Revenue	6.152,50		0,00
8001	3rd prty donations (sponsoring) VAT 19%	5.350,00		0,00
8032	Conference Dinner	<u>7.200,00</u>		<u>0,00</u>
			18.702,50	0,00
	<b>Personnal costs</b>			
	<b>Wages an salaries</b>			
8210	Wages and salaries	3.865,20		0,00
8212	Casual labour wages	<u>3.009,13</u>		<u>0,00</u>
			6.874,33	0,00
	<b>Social contributions</b>			
8230	Statutory social security expenses	2.509,53		0,00
8232	Wage tax	<u>1.359,39</u>		<u>0,00</u>
			3.868,92	0,00
	<b>Other operating expenses</b>			
8301	Event costs	5.345,99		0,00
8355	Compensated and split-up costs	<u>778,49</u>		<u>0,00</u>
			6.124,48	0,00
	<b>TOTAL PROFIT</b>			
	TOTAL PROFIT		60.599,84	10.738,91
	<b>Withdrawal from tied-up reserves</b>			
3953	Withdrawal from tied-up reserves		10.000,00	0,00
	<b>Allocation to tied-up reserves</b>			
3963	Allocation to current reserves		54.400,00	10.000,00
	<b>Allocation to general reserves</b>			
	<b>Free reserves in terms of § 58 Nr.7a AO</b>			
3965	Allctn to free res. in terms §58Nr.7a AO		7.085,46	0,00
	<b>REMAINING PROFIT</b>			
	REMAINING PROFIT		<u>9.114,38</u>	<u>738,91</u>

**Statement of asset per 31.12.2009**  
**European Severe Storms Laboratory e. V.**  
**Wessling**

	ASSETS			EQUITY		
	31.12.2009 Euro	31.12.2008 Euro	Euro	31.12.2009 Euro	31.12.2008 Euro	
<b>A. FIXED ASSET</b>						
I. Tangible assets			7.085,46		0,00	
1. Other fixed assets and equipment	981,00	243,20	54.400,00	61.485,46	10.000,00	
					10.000,00	
<b>B. CURRENT ASSETS</b>						
I. Cash at banks	77.157,36	17.295,32	5.592,98	7.538,52	5.331,97	
			55,79		23,05-	
			1.889,76		1.480,69	
				9.114,38	6.799,61	
					738,91	
	78.138,36	17.538,52		78.138,36	17.538,52	
					7%	

## Record of accounts for the statement of assets per 31.12.2009

### European Severe Storms Laboratory e. V. Wessling

#### EQUITY

Account	Description	Euro	Financial year Euro	Prior year Euro
<b>EQUITY</b>				
<b>Retained earnings</b>				
<b>General reserves</b>				
1070	General reserves		7.085,46	0,00
<b>Current reserves</b>				
1050	Current reserves		54.400,00	10.000,00
<b>Profit to be carried forward</b>				
<b>Non profit sector</b>				
1082	Carry forward non profit sector		5.592,98	5.331,97
<b>Asset management</b>				
1084	Carry forward asset management		55,78	23,05-
<b>Other tax privileged special purpose</b>				
1086	Carry fwd othr spec. purpose activities		1.889,76	1.490,69
<b>Remaining profit current year</b>				
	Remaining profit current year		9.114,38	738,91
			<hr/>	<hr/>
	Total equity		78.138,36	17.538,52
			<hr/>	<hr/>

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Summary of the financial audit of 2009, provided by the certified financial auditor "Ohland und Partner" (Munich, Germany) to the ESSL on 30 July 2010.

The full audit was presented to the Advisory Council and to the General Assembly.

## A.2 MEMBER LIST 2009

The following table shows all ESSL members as of 31 December 2009, sorted after their ESSL-ID (which corresponds in ascending order to the beginning date of the ESSL membership). The 10 founding member names are printed in italics. The given country corresponds to the main residence or statutory seat, not necessarily to the nationality.

INDF .... Individual Full Member

INDS .... Individual Supporting Member

INSF .... Institutional Full Member

INSS .... Institutional Supporting Member

INDF	<i>Dr. Nikolai Dotzek</i>	GERMANY
INDF	<i>Dr. Bernold Feuerstein</i>	GERMANY
INDF	<i>Dr. Dario Gaiotti</i>	ITALY
INDF	<i>Dr. Pieter Groenemeijer</i>	GERMANY
INDF	<i>Alois M. Holzer</i>	AUSTRIA
INDF	<i>Dr. Maria-Carmen Llasat-Botija</i>	SPAIN
INDF	<i>Dr. Romualdo Romero</i>	SPAIN
INDF	<i>Dr. Martin Setvák</i>	CZECH REPUBLIC
INDF	<i>Dr. Fulvio Stel</i>	ITALY
INDF	<i>Jenni Rauhala</i>	FINLAND
INDF	Thilo Kühne	GERMANY
INDF	Helge Tuschy	GERMANY
INDF	Mag. Georg Pistotnik	AUSTRIA
INDF	Zhongjian Liang	GERMANY
INDF	Lionel Peyraud	SWITZERLAND
INDF	Mag. Thomas Krennert	AUSTRIA
INDF	Dr. Johannes Dahl	USA
INDF	Martin Hubrig	GERMANY
INDF	Oliver Schlenczek	GERMANY
INDF	Victor Homar Santaner	SPAIN
INDF	Sanjay Sharma	INDIA, ASIA
INDF	Aurora Bell	ROMANIA
INDF	Sorin Burcea	ROMANIA
INDF	Bogdan Antonescu	ROMANIA
INDF	Dr. Marianne König	GERMANY
INDF	Dr. Volker Gärtner	GERMANY
INDS	Casper ter Kuile	NETHERLANDS
INSF	DWD, Deutscher Wetterdienst	GERMANY
INSF	EUMETSAT	GERMANY
INSF	AUSTRO CONTROL	AUSTRIA
INSS	Münchener Rückversicherungs-Gesellschaft AG	GERMANY
INSS	Tokio Marine Technologies LLC	USA