



7TH INTERNATIONAL AIRSHIP CONVENTION 2008

FINAL PROGRAMME

CELEBRATING THE CENTENARY OF
LUFTSCHIFFBAU ZEPPELIN



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Main Organisation



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7th International Airship Convention 2008

Celebrating the centenary of Luftschiffbau Zeppelin

Friedrichshafen 9-11 October 2008

INPRINT

Editor

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Preface

In 1899 Graf Ferdinand von Zeppelin pioneered the construction of the first rigid airship. From this time his famous words originate:

„Für mich steht naturgemäß niemand ein, weil keiner den Sprung ins Dunkel wagen will. Aber mein Ziel ist klar und meine Berechnungen sind richtig“.

“As I see it, naturally nobody wants to step up, because no one dares to take a leap in the dark. But my goal is clear and my calculations are correct”.

In 1900 Zeppelin made the first three flight attempts of the airship over the Bodensee (Lake Constance). The increasing improvement in results led to a sudden show of interest by the public, in effect enabling Zeppelin to further develop the technology of airships and his enterprise. As a result, the construction of a second ‘Zeppelin’ was due to a large extent made possible by donations from his supporters.

Airship construction funding and its further development finally stabilized, only to experience further set backs in 1908 when the Zeppelin LZ 4 crashed during a demonstration for a potential military buyer. However, a wave of compassion hit spectators and prompted them to donate to Zeppelin’s cause a total of over 6 million Marks. This enabled Zeppelin with the money raised and new found support to establish the Luftschiffbau Zeppelin GmbH and the Zeppelin Foundation.

100 years ago in Friedrichshafen, industrialization began with the vision of flight. Zeppelin’s dream enlarged, as further companies were established in the following years. In addition to several successor organizations and many other companies still operating in Friedrichshafen today. A notable example includes, the ‘Zahnradfabrik Friedrichshafen’ (Gear Factory, Friedrichshafen), Maybach and Dornier. These enterprises developed in the course of the last century are now global enterprises and are technology leaders in their respective fields.

After the first studies into airship development began early in the 1990s, a renewed interest in airships was ignited and in September 1996 a new company was established to succeed the former company, ‘Zeppelin Luftschifftechnik GmbH (ZLT)’ in Friedrichshafen. The new company began with more modest goals; however the construction on the first newly developed prototype the Zeppelin NT began one year later in September 1997.

The Zeppelin Airships found today still resemble much of their original design, yet now have increasingly versatile applications. Within the field of the transport research, airships are used for traffic observation. During the 2006 FIFA World Cup Football Championship the DLR in ‘Project Soccer’ used the Zeppelin NT as a platform for traffic monitoring technology. The Zeppelin Airship was equipped with specially adapted cameras and computers to gather data and to assist in traffic management, including a sensor system from an optical and a thermal image camera. Analysis software provided aerial photographs; with real-time traffic parameters and traffic conditions, allowing traffic management centres to simultaneously inform road users of traffic detours.

As flying platforms modern airships are able to serve as hubs for sensor technology, which can be used for a variety of purposes from geological investigations to safety and communication technology studies. In particular in an energy-saving capacity, airships can be operated for comparatively long flight durations, whereby research of unmanned flight becomes possible, thus expanding the market for modern airships. On that note, I wish you all the best for a successful convention, please take this opportunity to initiate discussions and use the occasion to exchange ideas about the various future possibilities. Furthermore, I hope this event will provide a platform for future conventions of this kind and an opportunity for you to build new networks within the industry.

All the best,

J. Szodruich





Dear guests,

Friedrichshafen – the home town of the historical Zeppelin company – celebrates this year the centenary of the Zeppelin foundation. We are very pleased that we may again host an international airship congress as part of the celebration events. The 7th International Airship Convention will take place from 8th to 10th of October introducing the celebration peak on 11th.

I like to invite you to attend the 7th International Airship Convention and to spend some days in our wonderful landscape at the Lake of Constance.

The Convention brings together the major airship societies from across Europe, USA, Asia und Russia – of all international fields. We want to continue the exceedingly success of the year 2000 and expect for this time an even higher amount of interested and high qualified participants.

The convention here in Friedrichshafen is focussed on the technological challenges facing airships in the past and in the coming years and brings together experts from a wide range of technical disciplines. The main mission is to strengthen industrial alliances and working relationship. More over I am very proud to see this event involved in the celebration of the centenary of Luftschiffbau Zeppelin in Friedrichshafen which is an fundamental important event for our City.

Beside the communication of technical issues, the City of Friedrichshafen will provide a most convenient venue for the Convention with its wonderful surroundings and the Lake of Constance to be the setting of any social activity an spare time attraction. I would like to thank the DGLR and The Airship Association for undertaking the substantial organizational task that is entailed in hosting this event. I am personally delighted that both associations proposed Friedrichshafen for the Airship Convention 2008.

I look forward to meet you in October at the 7th International Airship Convention in Friedrichshafen to spend a most worthwhile time in common.

Josef Büchelmeier
Mayor of Friedrichshafen

TIMES	Thursday 09 October	
8:00 – 8:30	Opening: Lord Mayor Josef Büchelmeier / Dick Chadburn Präsident of Convention / Bernd Sträter Organisation Committee	
08:30 – 09:00	Keynote 1: Ron Browning, Lockheed Martin LTA	
	Room Austria	Room Switzerland
	Session 1: HAA/HALE Chairperson: <i>Prof. Patrick Hendrick / COST</i>	Session 2: Future Projects Chairperson: <i>Philipp Stabenau</i>
09:00 – 09:30	Paper Nr: 71199 Lindstrand Unmanned Airships P Lindstrand, Lindstrand Technologies Ltd, GB	Paper Nr: 71190 LTA Research and development in France J. R. Fontaine, AERALL, FR
09:30 – 10:00	Paper Nr: 71201 Ultra-HALE UAVs and Zero-Carbon Air Transports S.P. Dev, D-STAR / AurAayan, US	Paper Nr: 71164 The project of semi-blimp airship "D-1500" G. Kozachenko, Antonov Design Bureau, UA
10:00 – 10:30	Paper Nr: 71200 Altitude Control of Stratospheric Platform Airship K. Harada, JAXA, JP	Paper Nr: 71188 Rigid+Plus: A Novel Airship Design With Improved Handling P.G. Boldt, Boldt Airship Company, US
10:30 – 11:00	coffee break	
	Session 3: UAV Chairperson: <i>Per Lindstrand</i>	Session 4: Flight Physics Chairperson: <i>J. Fecher</i>
11:00 – 11:30	Paper Nr: 71191 Unmanned Airships – Will this ‘Niche Within a Niche’ Be The Airship’s Breakthrough Market? G.Gottlieb, AE	Paper Nr: 71154 The algorithm synthesis for automatic control of airship thrust vector tilting at take-off stage V. Gusynin, NTUU "KPI", UA
11:30 – 12:00	Paper Nr: 71177 The autonomous airship ALUSTRA M. Angerer, AEE GmbH, DE	Paper Nr: 71196 PIV Measurement of the Flow Field around an Airship Model S. Kallweit, ILA GmbH, DE
12:00 – 12:30	Paper Nr: 71165 On-going UAV R&D at JAXA’s Aviation Program Group - With Emphasis on LTA Flight Test - M. Nakadate, Japan Aerospace Exploration Agency, JP	Paper Nr: 71183 Reduction of Noise Emission of Suboptimal Operating Propellers A. Hirner, University of Stuttgart, DE
12:30 – 13:00	Paper Nr: 71187 navigation system for unmanned blimp with low trajectorye dynamics M. Fach, DE	Paper Nr: 71159 The influence of global atmospheric warming on airship operations. M. J. Harris, Oxford Scientific Services Ltd., GB

TIMES	Thursday 09 October	
13:00 – 14:00	Lunch	
	Room Austria	Room Switzerland
	Session 5: UAV cont. Chairperson: <i>A. Bormann</i>	Session 6: Future Projects/Material Chairperson: <i>Prof. G. A. Houry</i>
14:00 – 14:30	Paper Nr: 71176 The AVAO-Project – An Autonomous Small-Size Airship for Education and Research - A Case Study R. Gerndt, FUniversity of Applied Science Wolfenbüttel, DE	Paper Nr: 71168 simulation of Unmanned Airship Control B.. Zhiqing, Beijing Institute of Computer Application, CN
14:30 – 15:00	Paper Nr: 71169 Operation of an autonomous, radiocontrolled airship for surveillance and TV broadcast D. Langenegger, SKIVE Aviation AG, CH	Paper Nr: 71178 New generation of Russian airships G. Verba, RosAeroSystems, RU
15:00 – 15:30	Paper Nr: 71198 Wireless Networks (IEEE 802.11, IEEE 802.16) Using Airborne Communication Platforms on the Base of Tethered Balloons V.M. Vishnevskiy, Institute for Information Transmission Problems RAS, RU	Paper Nr: 71155 Development of High Strength and Light Weight Envelope Material Zylon for a High Altitude Airship S. Maekawa, Shizuoka Institute of Science and Technology, JP
15:30 – 16:00	coffee break	
	Session 7: Various Chairperson: <i>T. Brandt</i>	Session 8: Hybrid Projects Chairperson : <i>R. Monk</i>
16:00 – 16:30	Paper Nr: 71185 Potential EU funding for airship research and development N. Hills, Airship Association, GB	Paper Nr: 71174 Design and assembly of a hybrid-airship as part of engineering education R. Larek, University of Bremen, DE
16:30 – 17:00	Paper Nr: 71182 EASA and Lighter-than-Air - a status report P. Stabenau, European Aviation Safety Agency, DE	Paper Nr: 71203 Design and cost optimization for hybrid airships A. Bormann, aeroix, DE
17:00 – 17:30	Paper Nr: 71213 Russia's first lighter-than-air airfield intended for airships operation – infrastructure, legal protection, flight operations and service experience I. Kulikov, AeroScan RU	Paper Nr: 71210 Promising Lifting Body Configuration for hybrid airship application P. Frey, Bauhaus Luftfahrt e.V., DE

TIMES	Friday 10 October	
08:30 – 09:00	Keynote 2: Remy Denos, EC Research Programme FP7	
	Room Austria	Room Switzerland
	Session 9: Cargo Airship Projects / VEATAL Chairperson: <i>C. Gronoff</i>	Session 10: Special Missions Chairperson: <i>H. Watanabe</i>
09:00 – 09:30	Paper Nr: 71195 A cargo Project in Africa S. Vencat, Vencat Investments Ltd, US	Paper Nr: 71160 Airship platforms for photographic and geophysical surveying of threatened heritage sites J. Christopher, Airship Initiatives,GB
09:30 – 10:00	Paper Nr: 71156 Cargo Transportation Demands in North Canada: Potential LTA Applications B. Prentice, University of Manitoba, CA.	Paper Nr: 71204 Biomimetics in airship design C. Jordi, Empa-Materials Science & Technology, CH
10:00 – 10:30	Paper VEATAL Sustainable Humanitarian Air Service for Emergency Relief P. Carrasse, Chief Aviation Unit World Food Program United Nations	Paper Nr: 71186 Use of Dirigibles for Scientific Studies of Tropical Rain Forest G. Dorrington, Queen Mary, University of
10:30 – 11:00	coffee break	
	Session 11: Cargo Lifter Operation Chairperson: <i>Prof. Tan Hui Feng</i>	Session 12: Lifting Gas Chairperson : <i>R. Browning</i>
11:00 – 11:30	Paper Nr: 71162 Autonomous Cargo Airships Operations System J.-K. Bock, DE	Paper Nr: 71158 HELIUM - A CHALLENGING AND IRREPLACEABLE RESOURCE D. Baciu, The Linde Group, DE
11:30 – 12:00	Paper Nr: 71167 A GROUND HANDLING PERSPECTIVE ON THE EXCHANGE OF PAYLOADS G. Camplin, Airship Heritage Trust, GB	Paper Nr: 71197 Concerning the use of Hydrogen Gas in Airships: Past and Future Aspects D. Spaltmann, Initiative Zukunft in Brand e.V., DE
12:00 – 12:30	Paper Nr: 71173 CargoLifter – first products to serve the market H. von Gablenz, CargoLifter, DE	Paper Nr: 71205 A new era in flyingwith hot air. Principles, performances and economics of insulated hot-air balloons and hot-airships A. Bormann, aeroix, DE
12:30 – 13:00	Paper Nr: 71189 Aerodynamic Aspects of the SkyCat Hybrid Air Vehicle K. R. Nippres, Hybrid Air Vehicles, GB	Paper Nr: 71212 Recommissioning of Experimental Airship LOTTE for Test and Development of Airborne Surveillance Applications and Automatic Guidance and Control P. Kungl, University of Stuttgart, DE

TIMES	Friday 10 October	
13:00 – 14:00	Lunch	
	Room Austria	Room Switzerland
	Session 13:VEATAL Cargo workshop Chairperson: <i>Prof. B. Prentice</i>	Session 14: History Chairperson: <i>D. Chadburn</i>
14:00 – 14:30	VEATAL Paper A DHL Presentation Member of DHL	Paper Nr: 71192 Leonardo Torres Quevedo, 1902 - 1908. The Foundations for 100 years of airship designs F. A. González Redondo, Universidad Complutense de Madrid, ES
14:30 – 15:00	VEATAL Paper: Innovative Project for the Elaboration of a Transport System in Russia Based on a New Generation Airships A. Kirilin, Moscow Aviation Institute, RU	Paper Nr: 71172 The development history of inflated lifting body form LTA vehicle hulls. L. Brooke, Tensys Dynamics Ltd, GB
15:00 – 15:30	VEATAL Paper Environmental simulation tests on airships envelops T. Hui Feng, Center for Composite Materials – Harbin Institute of Technology, China	Paper Nr: 71193 Airships v.s Submarines: Combat Study, Conclusion R. van Treuren, United space Alliance LLC, US
15:30 – 16:00	coffee break	
	Session 15: VEATAL Cargo workshop Chairperson: <i>C.H. v. Gablenz</i>	Session 14 cont.: History/Cargo Chairperson: <i>D. Chadburn</i>
16:00 – 16:30	VEATAL Paper Different aspects of airship motorisation P. Ponomareff VEATAL Project	Paper Nr: 71163 The case for heavy lift airships in humanitarian logistics U. Christopher, Airship Initiatives Ltd, GB
16:30 – 17:00	VEATAL Paper Airship Needs and Market in China W. Zhongguo, CASIC China Aerospace Science & Industry Corporation	Paper Nr. 71161 History of the PIG3 Remote Piloted Airship D. Smith, Promotional Ideas Group, GB
17:00 – 17:30	VEATAL Paper International Alliance for Cargo Airships & learned lessons C. Gronoff, Veatal project coordinator	16:00 – 18:00 Foyer Ground Floor: Radio controlled airship regatta (Organisation: <i>Eissing</i>)
Poster Presentation during the Convetnion (Time of brief Presentations stated next to the ID No)		Nr: 71184 Brief Presentation: Thursday 09. Oct 10:30 A Novel Non-Polluting VTOL Hybrid Airplane for the middle market GAP C. Singer, DLR, DE Nr. 71211 Brief Presentation: Thursday 09. Oct 10:40 Blimps needs shelters G. Thierry, Objectif Base Dirigable, FR Nr. 71157 Brief Presentation: Thursday 09. Oct 15:30 New Sceneries for passengers airship transportation M. Musio-Sale, DSA-University of Genoa, IT

GENERAL INFORMATION

The 7th International Airship Convention will be held at the New Exhibition in Friedrichshafen, Germany from Wednesday, 8 October to Friday, 10 October 2008 and is hosted by the German Society for Aeronautics and Astronautics (DGLR) and it is held in close collaboration with the Airship Association.

CONFERENCE LANGUAGE

Conference language is English – presentations are therefore preferred in English but also permitted in German.

REGISTRATION FEES (EUROPEAN EURO €)

Category

Member ¹ - early registration ²	250 €
Member - normal and on-site registration ³	340 €
Non-Member - early registration	350 €
Non-Member - normal and on-site registration	440 €
Student ⁴ Member - early registration	90 €
Student Member normal and on-site registration	120 €
Student Non-Member - early Registration	120 €
Student Non-Member - normal and on-site registration	150 €
Retired Member ⁵ early registration	200 €
Retired Member normal and on-site registration	310 €
Accompanying Person ⁶	40 €

(registration fees are in accordance with art 5, 1, no 9 KStG (German VAT law) exempted.)

CONDITIONS

¹ Members of any DGLR/Airship Association/AIAA/Airship Heritage Trust/Lighter-Than-Air Society of America Society.

² Early registration means including 31 August.

³ Normal registration means after 31 August.

⁴ Until completion of the 28th year. Reduction is not obtained for presenters.

⁵ Retired person means after completion of the 65th year and without employment contract.

⁶ no access to the conference sessions.

Registration fee includes:

Full Delegates – Attendance at the Congress sessions, coffee/tea during the breaks, Welcome Cocktail Party on Wednesday evening, Opening Ceremony on Thursday morning, Reception on Thursday Evening by the Lord Mayor of Friedrichshafen, Final Programme, Proceedings on CD, Congress bag and name badge.

Students – Same as Full Delegates.

Accompanying Persons – Attendance at Welcome Cocktail Party on Wednesday Evening, Lord Mayor's Reception on Thursday Evening and the possibility to book organized Social Programme.

REGISTRATION DESK

The registration desk, situated in the entry hall of the New Exhibition of Friedrichshafen will be open during the following hours:

Wednesday 8 October	08:00 - 18:00 hrs
Thursday 9 September	08:00 - 18:00 hrs
Friday 10 September	08:00 - 17:00 hrs

TOUR RESERVATIONS

In collaboration with the Tourist Information of Friedrichshafen, an accompanying person's programme has been arranged, listed on the following pages. Participants who wish to book these tours should complete the accompanying person's programme section in the registration form. Tour reservations will be confirmed when tour charges are paid in full. Credit card payments for accompanying persons tour charges will be deducted in full by DGLR.

CANCELLATION OF REGISTRATION, ETC.

After you have received the confirmation notice from DGLR, cancellation is subject to the following charges. Bank charges will be deducted from any refund. Notification of cancellation must be made to DGLR.

Registration fee

Cancellations must be reported in writing to DGLR. It must be received by **15 August 2008** in which case registration fees will be refunded except for a cancellation fee of EUR 40. In case the cancellation is received after 15 August 2008, no refund would be given.

This includes also the costs of the conference dinner for accompanying persons.

Accompanying Persons Programme

Cancellations must be received by **15 August 2008** in which case the tour fees will be refunded. In case the cancellation is received after 15 August 2008, no refund would be given.

CONGRESS PROCEEDINGS

The Airship Convention proceedings are available on CD-ROM, which are included in the registration fee where indicated. Additional CD-ROM can be ordered with the registration form at a cost of 65 EUR.

INTERNET ACCESS

At the New Exhibition Friedrichshafen all trade fair halls, the open-air grounds and the press and congress centres are equipped with the technology to allow access to the digital network even without an ISDN connection. System requirement is a W-LAN card. You receive internet access as a service of the host society, you can log in for free in the gallery /exhibition area and in several session rooms.

INSURANCE

Participants are advised to take out their own travel insurance and to extend any private policies for personal possessions they may be bringing with them. The Congress does not cover participants against travel, cancellations of bookings or loss/theft of belongings.

USEFUL HINTS

MESSE FRIEDRICHSHAFEN

The exhibition site next to Lake Constance has gained a unique reputation in recent years. The exhibition site in Friedrichshafen covers ten halls with floor space of 70,000 sqm and a central 12,000 sqm open-air site. A trade fair with short distances – this is reality in Friedrichshafen!

And it all started with the Zeppelin. Everybody is familiar with the sight of the world-famous airships developed by Graf Zeppelin. They were built in Friedrichshafen, laying the foundation stone for international high-tech enterprises such as EADS, ZF, Zeppelin-Metallwerke or MTU. Today, Friedrichshafen is a balanced mixture of industrial centre, tourist attraction, and trade fair venue offering a healthy equilibrium between work and play.

AIR TRAVEL AND ACCESS TO THE VENUE

BY TAXI FROM THE AIRPORT

Airport Friedrichshafen: The costs for a taxi taking you to the Messe Friedrichshafen are about 15 EUR and it takes approximately 15 minutes. As the transfer by public transport is, though the airport is not far away, comparatively complicated, it is advisable to take a taxi.

FROM THE STATIONS

Main station Friedrichshafen

It takes approximately 10 minutes to get to the Messe Berlin from the centre of Friedrichshafen. The costs for the bus taking you to the Messe Friedrichshafen are 1,75 Euro. You have to take line 5, the departure of line 5 begins in the morning at 5,38 h and runs every half an hour. The departure of the way back from the Messe Friedrichshafen to the station is 02 and 32 minutes after each hour until 20:02 hrs.

Business Hours

Bank	Mo + Thu	09:00 – 13:00 / 14:00 – 18:00
	Tue + Wed	09:00 – 13:00 / 14:00 – 16:00
	Fri	09:00 – 13:00

Closed on weekends and holidays

Post Office

Mo – Fri	08:00 – 18:00
Sa	08:00 – 12:00

Shops 10:00 – 20:00 (typical time)

Restaurants 11:00 – 23:00 (typical time)

Currency

The currency used in Germany is European EURO (EUR, €). Notes are available in units of EUR 5, 10, 20, 50, 100, 200, and coins in units of Cent 1, 2, 5, 10, 20, 50 and EUR 1 and 2. Traveler's checks and currencies from most countries can be exchanged for European EUR at major banks and hotels. Only European EUR is accepted at regular stores and restaurants.

Credit Cards

International credit cards such as Master Card, Visa, American Express and Diners Club are widely accepted at hotels, department stores, large shops and restaurants.

Tax and Tipping

In Germany there is the custom of paying 10 percent of the amount of the bill as tipping in restaurants. A 19% sales tax applies to almost all consumer goods sold in Germany.

Climate

Friedrichshafen is located in between the changeover of oceanic and continental dominated climate. In the month of October the average daytime temperature in Friedrichshafen is a comfortable 65°F (18° C). The average number of rainy days is 14 and days of sun 5,2. Participants are therefore recommended to bring normal summer clothing with adequate clothing for cooler and rainy days and evenings.

Electricity 220-230 volts AC, 50-60 Hz

Time

CET with daylight saving time at this period.

Mobil phones

For the use of mobile phones in Friedrichshafen, Germany, they must be designed for the GSM frequency-bands 900 MHz or 1800 MHz. Additionally the use of UMTS mobile phones in the area of the venue is possible but there is no coverage guaranteed all over Germany.

SOCIAL PROGRAMME

Wednesday 8 October

Welcome cocktail party afterwards it is intended to visit the Zeppelin hangar

18:00 - 19:00 hrs after 19:00 hrs visit of Zeppelin hangar

(login in registration form is necessary to receive ticket, included in Delegate, Student and Accompanying Person's fee)

Delegates, Students and Accompanying Persons are invited to attend the Convention welcome cocktail party in the Messe Friedrichshafen in the Foyer of Room Austria ("Österreich", first floor western foyer). Complimentary finger food and drinks will be served. Afterwards it is intended to visit the Zeppelin hangar.

Thursday 9 October

Lord Mayor's reception

19:00 - 21:30 hrs

(login in registration form is necessary to receive ticket, included in Delegate, Student and Accompanying Person's fee)

Delegates, Students and Accompanying Persons are invited to attend the Reception by the Lord Mayor in the Zeppelin Museum. A bus shuttle from the Messe Friedrichshafen to the Zeppelin Museum is organised (start of transfer 18:30).

Complimentary light snacks and drinks will be served.

Friday 10 October

Convention banquet

19:30 – 22:30

(ticket holder only)

59 € (19% VAT is included) per person

The Convention banquet will be held in the pleasing Castle Montfort in Langenargen next to the Lake of Constance. The Dinner will serve a menu including the beverage (except for hard liquors). Guests must present purchased tickets for entry. A bus shuttle to the castle and way back is organised.

ACCOMPANYING PERSONS PROGRAMME (subject to minimum numbers of participants, English speaking guides)

THURSDAY, 9 OCTOBER

9:45 – approx. 16:50 hrs

Constance Tour

39 € (19% VAT is included) per person

Highlights and Sightseeing of the City – Transfer by catamaran

The meeting point will be in the morning at 9:45 the harbour in Friedrichshafen. At 10 o'clock will be the departure with the catamaran to the most beautiful city Constance. In Constance you will expect a sightseeing tour - English and German speaking guide will give you an overview of the most important sights of Constance. Lunch will be served in the Barbarossa Restaurant in the heart of the city (not included in ticket price) – afterward you will have spare time to discover more of the city, the shopping stores or cafes. At 16 o'clock departure starts back to Friedrichshafen, where you will arrive at 16:50 (you can go back also one hour earlier).

FRIDAY, 10 OCTOBER

9:45 – 16:20 hrs

Guided tour to Meersburg / Back from the water site

39 € (19% VAT is included) per person

The guided tour starts at 9:45 hrs in the morning, meeting point is the bus station in Friedrichshafen. With public transport (by bus) the group goes to Meersburg, departure is at 10:00 hrs, another wonderful city at the Lake of Constance. A slight city walking tour is foreseen to discover the beauty of Meersburg. For lunch we have a rest next to the Lake of Constance (lunch not included in ticket price). At 14:30 a visit of a Museum and a stop in the museum's café is planned. Departure time is 15:45 hrs with arrival at 16:20 at Friedrichshafen station.

VENUE – MESSE FRIEDRICHSHAFEN

Session rooms: 1st Floor Raum Österreich (Room Austria),
Raum Schweiz (Room Switzerland), Raum Liechtenstein (HAPCOS main
room), Raum Schwarzwald (HAPCOS), Raum Bodensee (HAPCOS)

Exhibition: Section of Galerie (galery)



MAP: Centre of Friedrichshafen



COST 297 - 'HAPCOS'

COST297 – 'HAPCOS'
7th FORMAL MANAGEMENT COMMITTEE MEETING & WORKSHOPS
Neue Messe, Friedrichshafen, 8th, 9th, 10th October 2008

HAPCOS WORKSHOP: OUTLINE PROGRAMME

Version 0.g: 21 September 2008

Wednesday 8th October 2008

- 08.30 – 09.00 **Registration** [[Foyer West](#)]
09.00 – 10.15 **7th formal HAPCOS Management Committee meeting Part I**
 [[Raum Liechtenstein](#)] This is reserved to Members (or substitutes) of COST297. For details see www.hapcos.org
10.15 – 11.00 → **Coffee / Tea Break** [[Galerie](#)]
11.00 – 13.00 **Plenary HAPCOS Workshop** – open to all [[Raum Schweiz](#)]
 (i) Brief Welcome Address **Bernd Sträter**
 (ii) Introduction to COST297, & Overview **Tim Tozer, Chair COST297**
 (iii) 'High Altitude Platforms for Communications - The Achievements of the Last Ten Years'
 David Grace, University of York
 (iv) 'Optical and microwave communication for HAPs'
 Walter Leeb, Vienna University of Technology
 (v) 'High Altitude Platforms: The reality, and X-station' **Kamal Alavi, Strat-XX**
 (vi) Open Discussion
13.00 – 14.00 **Lunch** [[Messe-Shop – Ground Floor](#)]
14.00 – 15.30 **HAPCOS Parallel Workshops:** – open to all:

Raum Schweiz	Raum Schwarzwald	Raum Liechtenstein
WG 1	WG 2	WG 3
(Wireless Communications) Chair: David Grace Presentations & Discussions as per separate Agenda.	(Optical Communications) Chair: Markus Knapke Prestns & Discussions as per separate Agenda.	(HAPs & Other Applications) Chair: Patrick Hendrick Presentations & Discussions as per separate Agenda.

- 15.30 – 16.00 **Tea / Coffee break** [[Galerie](#)]
16.00 – 17.00 **Workshops continue** (as above)
17.00 **Close**

Wednesday Evening:

- 18.00 – 19.00 Welcome Cocktail Party (with [Main Convention](#)) [[Foyer West](#)]
from 19.00 Visit to Zeppelin Hanger [[Zeppelin](#)]

Thursday 9th October 2008

- 08.00 – 08.30 **Main Convention Opening Address** (see [Conventions technical programme](#))
09.00 – 10.30 **HAPCOS Parallel Workshops:** – open to all:

Raum Liechtenstein	Raum Schwarzwald	Raum Bodensee
WG 1	WG 2	WG 3
(Wireless Communications) Chair: David Grace Presentations & Discussions as per separate Agenda.	(Optical Communications) Chair: Markus Knapke Prestns & Discussions as per separate Agenda.	(HAPs & Other Applications) Chair: Patrick Hendrick Presentations & Discussions as per separate Agenda. Also as part of the Main Airship Convention

- 10.30 – 11.00 **Tea / Coffee break** [[Galerie](#)]
11.00 – 13.00 **Workshops continued** (as above)
13.00 – 15.00 **Lunch** [[Messe-Restaurant or Galerie](#)]
15.00 **HAPCOS Plenary Session** [[Raum Liechtenstein](#)]
 i) Report back from Working Group Chairs
 ii) Discussion on WG items
 iii) Discussion on Final Report
 iv) Any remaining plenary presentations
15.30 – 16.00 **Tea / Coffee break** [[Galerie](#)]
16.00 – 17.00 **6th formal Management Committee meeting Part II.** [[Raum Liechtenstein](#)]
17.00 **Close**

Thursday Evening

19.00 Lord Mayor's reception [[Zeppelin Museum, Friedrichshafen](#)]

Friday 10th October 2008

09.00 – 11.00 HAPCOS Working Group on Final Output (Book) [[Raum Liechtenstein](#)]

11.00 → HAPCOS members may rejoin main Convention

WG1 Presentations

Wednesday 8th October 2008 from 14.00 until 15.30

Slant-path Gas Attenuation Characteristics from Radiometer Data,
Martin Grabner and Vaclav Kvicera, Testcom, Czech Republic

Application of High Altitude Platform Stations for 3G WCDMA Systems,
Jaroslav Holis, Pavel Pechac, Czech Technical University in Prague, Czech Republic

Space-Time Processing for Interference Mitigation in HAP WCDMA Systems,
Tommy Hult¹, Abbas Mohammed, David Grace², ¹Blekinge Institut of Technology, Sweden, ²University of York, United Kingdom

Wednesday 8th October 2008 from 16.00 until 17.00

Additional papers from WG1, TBD.

Thursday 9th October 2008 from 09.00 until 10.30

Performance Evaluation of Forward Link Adaptive Coding and Modulation in Fixed and Mobile HAP Operating Environment,
Miha Smolnikar, Mihael Mohorcic, Tomaz Javornik, Jozef Stefan Institut, Slovenia

A Novel Compact MIMO Antenna for High Altitude Platform Communications,
Tommy Hult and Abbas Mohammed, Blekinge Institut of Technology, Sweden

Open discussion

Thursday 9th October 2008 from 11.00 until 13.00

Self Organizing WSN Collaborative Beamforming for HAP Communications,
Marina Mondin, Politecnico di Torino, Italy (with collaboration from Ben Gurion University, Israel)

Adaptive Radio Resource Management in a DVB-S2 based HAP Network for Broadband Internet Access and Multimedia Content Delivery,
C.Pitas, A.Tsopelas, V.Sofras, Ph.Constantinou, National Technical University of Athens, Greece

Performance of Game-based Spectrum Assignment for a Mixed HAP and Multi-terrestrial Base Station System,
Pairoj Likitthanasate, David Grace, Paul Mitchell, University of York, United Kingdom

Open discussion

WG2 Presentations

Wednesday 8th October 2008 from 14.00 until 15.30

Quantum cryptography under high loss situations
Rupert Ursin - University of Vienna, Austria

Error correction on optical links, protocols and routing
Hennes Henniger, Bernhard Epple, DLR Munich, Germany

Numerical simulations for ground to HAP and HAP to ground scenarios with adaptive optics correction
Ruth Mackey – NUIG, Ireland

Wednesday 8th October 2008 from 16.00 until 17.00

Slant-path gas attenuation characteristics from radiometer data
Vaclav Kvicera, Martin Grabner – Testcom, Prague, Czech Republic

Atmospheric measurements in the downlink from TerraSAR-X
Markus Knapek – DLR, Munich, Germany

Thursday 9th October 2008 from 09.00 until 10.30

Additional papers from WG2, TBD.

General Issues for WG2

Book Discussion

Web Page

Open discussion

WG3 Presentations

Wednesday 8th October 2008 from 14.00 until 15.30

Latest developments and programmes of HALE UAV and airships,

Patrick Hendrick, ULB, Belgium

PEGASE, a stratospheric airship study,

Pierre Balascovic and Jean-François Rives, Airship Consult and Stratotex, France

The Dirisoft network: main scientific challenges for airship design,

Sylvain Allano and Hervé Kuhlmann, Ecole Normale Supérieure Cachan, France

Wednesday 8th October 2008 from 16.00 until 17.00

Additional papers from WG3, TBD.

Thursday 9th October 2008 from 09.00 until 10.30

On the use of hydrogen fuel cell onboard HALE platforms,

Patrick Hendrick, Virginie Delcour and Inaki Calvo, ULB, Belgium

Aeroelasticity issues at low air density (high altitude) and high density (TO conditions) for a lightweight HALE,

Cristinel Mares, Brunel University, United Kingdom

Open discussion

Thursday 9th October 2008 from 11.00 until 13.00

Preliminary design of a joint wing HALE UAV,

Dries Verstraete and Patrick Hendrick, ULB, Belgium

Aerodynamics issues at extreme high altitude,

Guy Gratton, Brunel University, United Kingdom

The Hyperblimp concept and its latest developments,

Dan Geery and Patrick Hendrick, Hyperblimp LLC, USA and ULB, Belgium

Open discussion

VEATAL – integrated Workshop (see technical programme)

A "Specific Support Action" project of the 6th European Framework Programme

Issues and Needs :

The 20th century started with the conquest of the atmosphere by aeroplanes and terminated with the conquest of the earth and moon orbits.

The 21st century could see the conquest of the cargo transportation by airships in the new economic paradigm of globalisation .

The intensification of goods exchanges in globalisation requires that :

- payloads be heavier , larger, indivisible, pre-mounted
- delivery be any time, any weather, any place, on any surface, door to door, infrastructure-free
- the carrier be "mission versatile" and if airship, hover securely - be propelled on very long distances , lift off and descent autonomously , rate highly in ecological performances.

VEATAL generic objectives :

- Challenge airship technologies to participate at the satisfaction of the above needs

- Open a sustained dialogue with needing industrial freighters to review their potential logistical missions for the benefit of the European aerospace industry and possibly other industries.

- Keep informed industrial logisticians about the real services of the promising airship technologies, based on evidential reports of real-scale transport trials, benchmarking and mapping .

- Promote and convince the European & Russian airship communities to converge their know-how into practical solutions for the given needs, interoperable and complementing the airspace and surface logistical services.

- ▶ Avionic devices authorized for aeronautic use in airplanes and helicopters
- ▶ PCBs for aeronautic applications
- ▶ Maintenance, testing and simulation equipment for airborne devices
- ▶ Ground Power Supply Equipment



▶ ESAS



▶ Power Supply GPU



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