



Nordic HF Conference

12 - 14 August 2013
Fårö Kursgård, Fårö

Programme



THE NATIONAL COMMITTEE
FOR RADIO SCIENCE
THE ROYAL SWEDISH ACADEMY OF SCIENCES



HF, LF and VLF systems - fields of increasing importance

I wish you a very welcome to the 10th Nordic HF conference on Fårö.

The first Nordic Shortwave Symposium HF 86 was sponsored by FMV, the Swedish Defence Materiel Administration, and initiated by Carl-Henrik Walde, chief engineer and manager of its Radio Division. After some years, the event was taken over by NRS, the Nordic Radio Society, a foundation co-operating with SNRV, the Swedish National Committee of URSI (Union Radio-Scientifique Internationale). NRS promotes exchange of knowledge between different technical disciplines and between universities and the radio industry. The NRS board members represent SNRV, the radio industry, defence organisations, telecom operators and universities.

For HF 13, we have adjusted the dates to Monday-Wednesday in order to accommodate the BLOS (Beyond Line-Of-Sight) and HFIA (HF Industry Association) meetings in Stockholm on the following Thursday and Friday.

The URSI-sponsored HF 13 with the attached longwave symposium LW 13 will focus on HF, LF and VLF communication, location and navigation systems "beyond the horizon". These communication technologies have advanced significantly over the last years with trends towards a high degree of automation and signal processing that can be cost-effectively implemented to achieve performance even in small systems. High capacity multimedia networks carry not only analogue voice and data messages in a store-and-forward manner, but also digitised high quality voice, streaming data and even streaming video. Integration with VLF, LF and HF as well as VHF and UHF with these networks needs developments in modulation and coding as well as link and network management.

Automatic networking and information transparency play an increasing role for subscriber connectivity, area coverage and reliable communications, longwave and shortwave systems being only one of several available alternatives. For HF 13, we invited contributions related to VHF and UHF long-haul communications and multiband equipment. However, no such papers were submitted.

Defence forces are the major professional users and defence applications are the technology driver. In many cases HF, LF and VLF are the primary and sometimes the only way of providing communications and we are happy to welcome our keynote speaker, Gerard Elzinga of NATO Headquarters in Brussels, who will address NATO HF communications.


TAKE YOUR TIME

Conferences are important venues where users, scientists, engineers and manufacturers meet and have the opportunity to discuss both needs and solutions. Since the first conference in 1986, each Nordic HF conference has gathered over 100 participants, who have enjoyed the relaxed atmosphere and stimulating company of colleagues in the informal setting provided by the unique nature of Fårö and the Fårö Training Camp.

Plenty of time has been set aside outside the conference theatre to enable you to keep in touch in informal discussions and mutual exchanges of views. Please, make good use of these opportunities – the exhibition area is suitable. We hope you will get good value in spite of the somewhat primitive lodging.

Family members are welcome to all activities after 15:00.

I extend a thank you to the HF 13 organisation and the Fårö Camp. Thanks are also due to ÅF Technology AB, Wrap International AB and Combitech as well as our exhibitors and sponsors including the volunteer auditorium technicians and musicians and, of course, all HF 13 participants who are welcome to join at HF 16, 15-17 August, 2016 (week 33).



Mats Nilson, Chairman of NRS



RECEPTION DESK

The HF 13 reception is open 15:00 – 22:00 on Sunday and 07:30 – 17:00 on Monday to Wednesday.

MEALS

All meals are served in the restaurant building.

Morning and afternoon coffee/tea are served in the exhibition area (for family members in the pub).

For excursions, family members may make a lunch package at breakfast.

Breakfast 07:00 – 09:00

Coffee/tea 09:45 – 10:15

Lunch 11:30 – 13:00

Coffee/tea 15:00 – 15:30

Dinner 17:00 – 18:30 On Tuesday the conference dinner will begin at 19:00. “Dricka” (Gotland drinks) will be served from 18:00.

Food preferences have been sent to the restaurant manager. However, as a safety measure, we suggest that you approach the reception or a hostess to check that issue.

INTERNET ACCESS

E-mail and browsing facilities are available in the anterooms of the conference theatre and in the exhibition area. For your personal computers, ethernet outlets and wireless networks (password: Lansa) are available.

DOCUMENTATION

Proceedings of HF 13/LW 13 and earlier conferences are available on electronic media and also provided as a paperback volume. There will be “print on demand” facilities at the venue. Our website will list titles and authors of all papers for Internet search and access to the topics.

AMATEUR RADIO STATION

SL1HF is situated behind Lambgiftet lodge. Station managers are conference technicians Lars Nordgren (SMØOY) and Tor Bergström (SMØCVI). Please write the SL1HF QSL card for every QSO.

EXTENDED STAY AND FAMILY ACCOMMODATION

The camp office is ready to receive your payment for extra accommodation; please pay not later than Monday afternoon.

TIMINGS

General timings including social activities are on the next page with the conference programme on the subsequent pages.

SUNDAY

17:00 – 22:00 Bavarian buffet, sponsored by Rohde & Schwarz.

19:00 – 24:00 The pub is open.

MONDAY

07:30 Morning music (Täby Spa Octet)

07:45 Please gather on the parade grounds

Opening speech by Gotland County Governor, Dr. Cecilia Schelin Seidegård

15:30 – 17:00 Sightseeing tour on Fårö; buses leave from the garage yard.

19:00 HF 13 concert in Fårö Church

20:00 Exhibitors' party in the exhibitions grounds

19:00 – 24:00 The pub is open.

TUESDAY

15:30 – 18:00 “Foxhunt” (Amateur Radio Direction Finding); please assemble in the auditorium.

18:00 “Dricka” (Gotland drinks) served just outside the restaurant and pub area.

19:00 Conference dinner.

19:00 – 24:00 The pub is open.

N.B. Swedish alcohol rules state that the “Dricka” must not enter the restaurant and pub area including the terraces. On the other hand, wines etc must not exit that area.

WEDNESDAY

13:45 Bus shuttle leaves for Visby airport (ETA 1500) and ferry terminal (ETA 1530); this is earlier than announced on our website.

EXHIBITORS

FMV, the Swedish Defence Materiel Administration

FRO, the Voluntary Radio Organisation

Harris Corporation

Rohde & Schwarz GmbH

SSA, the Swedish League of Radio Amateurs

Teleanalys AB

ÅF Technology AB

SPONSORS

Combitech

Harris Corporation

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SESSION PROGRAMME AND CONTENTS

PROPAGATION AND MODELLING Page

(Olov Carlsson) Monday 12 August, 08:00-09:45

Karl-Arne Markström	A simplified approach for a sound-card based HF oblique ionospheric sounding receiver	1.1
Marcos Hervás, Joan Lluís Pijoan, Rosa Maria Alsina-Pagès, Martí Salvador and David Altadill	Channel sounding and polarization diversity for the NVIS channel	1.2
Eskil Bendz	A strategy for modelling onboard radio systems	1.3

MODULATION AND CODING Page

(Rolf Gustavsson) Monday 12 August, 10:15-11:30

Catherine Lamy-Bergot, Sébastien Herry, Jean-Yves Bernier and Frédéric Ngo Bui Hung	On-air tests results for the HF XL wideband modem	2.1
Randy W. Nelson, Mark B. Jorgenson and Robert W. Johnson	110C appendix D vocoder and Walsh data rate performance	2.2
John W. Nieto, William N. Furman and Eric N. Koski	Performance implications of HF channel utilization	2.3

INTEGRATION ASPECTS Page

(Karl-Arne Markström) Monday 12 August, 13:00-15:00

Sabine Alexandersson	EMC – Through the life of a product	3.1
Sara Linder, Karina Fors, Kia Wiklundh and Peter Stenumgaard	Effects of intersystem interference in HF systems	3.2
Emelie Agnedal	System requirements for co-located equipment on small platforms and cost-effective measures to reduce interference	3.3
Patrik Eliardsson, Kia Wiklundh, Erik Axell, Björn Johansson, Peter Stenumgaard	Analysis of the local HF interference environment at a military platform	3.4

SPECTRUM REGULATION AND MANAGEMENT**Page****(Susan Trinder) Tuesday 13 August, 08:00-09:45**

Björn Johansson and Peter Nagy	Interference levels 2012 in northern Europe compared to levels from the 90's	4.1
William N. Furman, John W. Nieto and Eric N. Koski	Interference environment and wideband channel availability	4.2
Arnie Johansen	The new ITU-R radio regulations – Impact of transmitter requirements	4.3

LINK PROTOCOLS**Page****(Nigel Arthur) Tuesday 13 August, 10:15-11:30**

William N. Furman, John W. Nieto and Eric N. Koski	Initial wideband HF ALE: Approach and on-air test results	5.1
Mark B. Jorgenson, Randy W. Nelson and J.A. Lahart	The next generation of ALE – Getting the most out of WBHF	5.2
Erik Koski, John Nieto and Michael Stringer	STANAG 5066 for wideband HF	5.3

SYSTEMS AND NETWORKS**Page****(Mark Jorgenson) Tuesday 13 August, 13:00-15:00**

Gerard A. Elzinga	HF in NATO, an operational perspective	6.1
Andrew Paine and Iain Scott	Development of a real-time multi-channel HF DF system	6.2
Catherine Lamy-Bergot, Jean-Baptiste Chantelouve, Jean-Yves Bernier, H��l��ne Diakhat�� and Jean-Luc Rogier	HF XL: Adaptive wideband HF transmissions	6.3

PERFORMANCE AND TECHNIQUES**Page****(John Nieto) Wednesday 14 August, 08:00-09:45**

Duncan Tait, Andrew Gillespie and Susan Trinder	An analysis of design consideration for wideband HF	7.1
Rickard Berg and Håkan Bergzén	Instantaneous channel access for 3G-ALE systems	7.2
Karl-Arne Markström	Trends in the electromagnetic noise environment caused by consumer electronic equipment	7.3

VLF/LF SYSTEMS AND TECHNIQUES**Page****(Carl-Henrik Walde) Wednesday 14 August, 10:00-11:30**

James O'Keefe	The electronic design challenges of VLF/LF/MF distribution systems	8.1
Risto Korhonen	Weak noise emission detection and location by cross correlation between crossed loop antennas	8.2
Karina Fors and Kia Wiklundh	On performance of LF/VLF receivers in impulsive and AWGN interference environment	8.3

URSI REPRESENTATIVE:

Gerhard Kristensson Lund University, president of SNRV

ORGANISING COMMITTEE

Carl-Henrik Walde	SNRV and NRS (chairman)
Mats Nilson	NRS chairman
Jorma Ahonen	ÅF Technology AB
Olov Carlsson	WRAP International AB (exhibition, sponsorships)
Karl-Arne Markström	ÅF Technology AB (programme committee chairman)
Linda Olsson	ÅF Technology AB (administrative secretary)

PROGRAMME COMMITTEE

Karl-Arne Markström	ÅF Technology AB (chairman)
Håkan Bergzén	Combitech AB (secretary)
Dag Stranneby	University of Örebro
Rolf Gustavsson	Swedish Defence Research Agency
Rickard Berg	Swedish Defence Materiel Administration
Kjell Brethack	Swedish Defence Materiel Administration
Emelie Agnedal	ÅF Technology AB

CONFERENCE HOSTESSES

Marie Lindersjö	
Linda Olsson	ÅF Technology AB
Olivia Ahonen	ÅF Technology AB

CONFERENCE TECHNICIANS

Christina Wärf	
Rikard Wärf	SM1CQA
Lars Nordgren	SMØOY
Tor Bergström	SMØCVI
Veronica Holmberg	et al

CAMP HOSTS

Jan-Erik Engström	Chairman of the board and pub manager
Lars Weinebrandt	Camp manager
Anna-Greta Grund	Restaurant manager
Alex Thomasson	Camp hostess

CONTACTS AT HF 13

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