

Organising Committee

Anders Wigh	Combitech AB	(HF 22 chairman)
Olov Carlsson	Nordic HF	(Chairman, retired)
Rickard Berg	FMV	
Mats Nilson	SNRV, NRS	
Karl-Arne Markström	AFRY Digital Solutions AB	
Marie Lindersjö	Head conference hostess	

Programme Committee

Rickard Berg	FMV	(Committee chairman)
Håkan Bergzén	Combitech AB	(Secretary)
Karl-Arne Markström	AFRY Digital Solutions AB	
Kjell Brethack	FMV	
Jens Zander	KTH	
Rolf Gustavsson	FOI	
Peter Johansson	FOI	
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Conference Secretariat

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The conference fee of SEK 13 000 + VAT 3 250 (SEK 4 350 + VAT 1 087.50 for seniors paying out of their own pockets and for students) includes all social events as well as full board and lodging from Sunday afternoon 15 August to Wednesday afternoon 17 August. The lodging standard has been improved considerably over 36 years and rooms are comfortable but still somewhat basic, more so for late registrations. Some will have to share rooms, an excellent way to meet new friends. Registration for the conference will close 1 August 2022, but please be early as priority will be based on the date of receiving the conference fee. Companions are also welcome to stay and participate in everything except the conference itself (meals, accommodation and excursions) at a price of SEK 800 per day incl. VAT. For children 10 to 14 years 400 SEK per day incl. VAT and children 4 to 9 years 200 SEK per day incl. VAT. Kids 0 to 3 years are free. The normal full conference stay will be counted as 3 days in total. Price deduction for use of own caravan (no quarters reserved) can be arranged, please e-mail info@nordichf.org. Stays on adjoining days are possible, see <https://www.farokursgard.se/prislista.html>.

You are recommended to arrive at Fårö not later than Sunday afternoon August 14. HF 22 free buses will leave from Visby airport (VBY) and ferry terminal on Sunday; return transportation will catch Wednesday flights and ferries. Further information will be available on our website.

For networking outside the conference sessions we have the Rohde & Schwarz Bavarian buffet Sunday 1700-2200, the traditional sightseeing tour on Fårö, lunch music, the concert in Fårö church where the famous film director Ingmar Bergman is laid to rest, the exhibitors' party, the HF radio direction finding competition, the amateur radio station SL1HF and the banquet, Gotland style. For companions, we have plans to arrange extended bus tours to see more of Gotland. In your spare time, if any, you may visit the nearby Ingmar Bergman Center.

On Monday August 15 at 08:00 sharp, HF 22 will be opened. On Wednesday August 17 at around 1400, HF 22 will close. NRS welcomes authors, participants, exhibitors and family members to Fårö and HF 22.



Nordic HF Conference HF 22

15-17 August 2022
Fårö Kursgård, Fårö

Second Invitation and Provisional Programme

On Monday-Wednesday, August 15-17 2022, the 13th Nordic HF Conference HF 22 will be held, as always in week 33 and at the usual camp on Fårö just north of Gotland in the Baltic Sea. The dates have been chosen to allow meetings in Stockholm on the following Thursday and Friday.

We suggest that you plan to arrive not later than Sunday 14. The camp will be open on weekends for private use and for business meetings. Industry will be able to exhibit their products during the conference.

You should access "My Pages" on our website <https://nordichf.org>, register for the conference and apply for exhibition area and scholarships. Early registrations will guarantee your participation and lodging in the camp area.

You may take the opportunity to visit the rest of Gotland. The preceding week 32 is the Medieval Week, see <https://www.medeltidsveckan.se/en/welcome/>

HF 22 is organised by NRS, the Nordic Radio Society, assisted by Combitech AB and the Swedish Defence Materiel Administration (FMV). NRS is a foundation co-operating with SNRV, the Swedish National Committee of URSI (Union Radio-Scientifique Internationale). Combitech is an independent technical consulting company and part of defence and security group Saab AB.

As always, NRS welcomes authors, participants, exhibitors and family members to Fårö. We will meet in an excellent conference theatre, in an interesting exhibition, with Internet access and an amateur station SL1HF, all in a camp near Mother Nature, well suited to you and your family.



SNRV

SVENSKA NATIONALKOMMITTÉN FÖR
RADIOVETENSKAP
THE SWEDISH NATIONAL COMMITTEE OF URSI

HF systems – fields of increasing importance

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.

Topics focus on radio communication, radio location and radio navigation technology "beyond the horizon" with emphasis on HF, but they also include LF, VLF.

As at earlier HF conferences, HF technology has advanced significantly, with trends towards a high degree of automation and signal processing. High capacity multimedia networks carry not only analogue voice and data messages in a store-and-forward manner but also digitized high quality voice, streaming data and streaming video. Wideband HF and staring receivers will be used. Automatic networking and information transparency play an increasing role to achieve full subscriber connectivity, area coverage and highly reliable communications also under disturbed conditions.

Defence forces are the major professional users and defence applications are the foremost technology driver. In many cases HF, LF and VLF are the primary and sometimes the only way of providing communications. In our modern days of advanced communication systems HF radio is even more than before important for users having needs of control of the messaging paths – no intermediate nodes or functions out of your control are required.

We are happy to have an invited speaker: Ben A. Witvliet, University of Twente & Radiocommunications Agency Netherlands.

INVITED PAPER

Witvliet, Ben A.	Near Vertical Incidence Skywave, The Propagation Mechanism, the Impact of antenna, Backscatter and Solar Flares
	Ambient Outdoor Electromagnetic Noise Measurements in the Conflicting Perspective of Spectrum Planners and Spectrum Users

PROVISIONAL PROGRAMME

Batts, William et al	A Comparison of Wideband High Frequency Data Link Protocol Performance
Berg, Rickard et al	Can Staring ALE Become a Game Changer for HF Military Broadcast?
Bernier, Jean-Yves et al	HF-XL Airborne Trials over the Atlantic
Capela, Germano et al	Systems Engineering Challenges for Future NATO HF Capability Deployment
Furman, William	Application of Machine Learning Techniques to HF Propagation Prediction and Deployment Considerations in Tactical HF Radios
Gonzales, Tomas et al	IoT NVIS Radio Link for Antarctic Islands

Haziza, Nathalie et al	HF Red-Pitaya-based Experimentation Platform
Hunt, Brandon T et al	Examining the Performance of MIL-STD-188-110D Waveform 0 Against a Filter Bank-based Spread Spectrum System
Johansen, Arnstein	An Alternative Approach to HF Receiver Architectures
Jeffrey, Christopher	Development of a New HF Tool that Tracks Covariance Information for Propagation Studies through Disturbed Ionospheres
Jorgensen, Mark	Robust HF Waveforms: Maintaining Communications in Challenging Conditions
Kille, Steve	Not Using ALE to Select Frequency
Lundquist, Johan	A MUSIC Subspace Algorithm Applied to a Legacy 3-channel Watson-Watt Short Wave DF system
Markström, Karl-Arne	Rise and Fall of a Major HF supplier – Standard Radio & Telefon AB
Markström, Karl-Arne	A Generalised Approach for Performance Evaluation of HF Systems
Malhotra, Sambhav et al	Portable/Rapid Deployment HF Antennas for Multi-Band Channel Aggregation Systems
Nieto, John et al	A Comparison of Published Waveform Design Techniques Used for Reliable HF Communications
Sailer, Alfons et al	Direct Sampling HF Radio for Next Generation Link Setup "Staring ALE"
Salmi, Jouni	Multihop Functionality in Cognitive Networked HF System
Watolla, Carsten	SDR for Strategic COMINT Applications
Weberg, Lars	Green Power for HF in the Field – a Possibility?
Wickenhäuser, Harald	Vertical Antennas, an "Old Hat"?
van Wyk, Danie et al	Performance of WB-RDL with 4G ALE (WALE) for Wideband HF Radio Systems
Zander, Jens	Multi-Band Channel Aggregation in Meshed Wideband HF Radio Networks

Proceedings of HF 22 will be available on electronic media and also provided as a paperback volume. Proceedings of HF 22 and earlier conferences will be available on electronic media. Our website will list titles and authors of all papers for Internet search and access to the topics. There will be "print on demand" facilities at the venue.

EXHIBITION, SPONSORSHIPS

For exhibition and sponsorship issues please contact Anders Wigh, anders.wigh@combitech.se.

REGISTRATION

Please create a user account and register under "My Pages" on <https://nordichf.org> where you will find links and practical information. Participants are registered in the order of payment.

Mats Nilson



Anders Wigh

