

LS summit 2006 11th Annual Seminar Day

Dear Readers

For the 11th time already the LS Summit - the LS telcom Seminar Day - will take place at our headquarters in Lichtenau/Baden on 5th July 2006.

As specialist conference for radiocommunications the LS Summit meanwhile enjoys international reputation. Visitors from more than 28 states have demonstrated this in 2005 in an impressive way.

Also this year again there will be besides the proved experts lectures an accompanying exhibition with many practical presentations and extensive information booths about the topics radiocommunications and spectrum management.

We are convinced that the LS Summit will be a success again; first class speakers and interesting topics will guarantee an informative event.

We wish you a pleasant stay here at LS telcom AG and are looking forward to inspiring lectures, interesting conversations and a vivid exchange of ideas with you, our customers, partners and friends.

As you see this issue of our customer's magazine SPECTRUM is mainly focused on the LS Summit. But also for those of you who cannot participate and see the latest development of our software and service products this SPECTRUM offers a lot of information about the latest trends and developments all around our product and services.



R. Götz M. Leberherz G. Schöne

CONFERENCE PROGRAM LS SUMMIT 2006

09:00 – 09:30 Welcome and Introduction to the LS Summit 2006 Dr.-Ing. Manfred Leberherz, Dr.-Ing. Georg Schöne, Dip.-Ing. Roland Götz	12:00 – 13:30 Lunch Break
09:30 – 10:00 RRC04/06 - Experiences and Results Dipl.-Phys. Klaus Huber, LS telcom AG, Germany	13:30 – 14:00 Military Spectrum Management in Germany Lt. Col. Benno Edelmann, NARFA, Germany
10:00 – 10:30 SFN (Single Frequency Network) Planning for DAB in Switzerland Dipl.-Ing. Michael Abegg, SRG SSR Services, Switzerland	14:00 – 14:30 Innovative Technical Tools Supporting Innovative Spectrum Use Dr. Christopher Haslett, Ofcom, United Kingdom
10:30 – 11:00 Coffee Break	14:30 – 15:00 Coffee Break
11:00 – 11:30 Ultrawideband - Radiation and Propagation Dipl.-Ing. Werner Sörgel, Institut für Höchsthfrequenztechnik und Elektronik, Universität Karlsruhe, Germany	15:00 – 15:30 New Concepts of Transmitting Antennas for DMB and DVB-H Dipl.-Ing. Hermann Zehetner, Kathrein-Werke KG, Germany
11:30 – 12:00 The LOFAR Sensor Network and New Scientific Use of the Spectrum Dr. Willem Baan, Radio Observatory of Astron, The Netherlands	15:30 – 16:00 DVB-T Planning from a French Perspective Bernard Denis-Laroque, BDL Networks, France
	16:00 End of Official Conference Program



Subjects of this issue

- Conference Program LS Summit 2006
- News Consulting & Engineering Services
- News Planning and Coordination Tools
- News Spectrum Economy
- LS Speed
- LS telcom hosted Cocktail Reception at RRC06
- Trade Fairs with LS telcom participation



News Spectrum Economy

Increasing demands for flexible spectrum usage

Regulators are more and more urged to arm themselves for a flexible spectrum usage. Spectrum auctioning and dynamic allocation of spectrum slices become an issue which also raises new demands on the spectrum management tools. Semi- and fully automated processes are necessary to reduce the workload for the day to day work as the new challenges bind a big stake of the regulators resources. The tool landscape has to react on these demands and supply today answers for the questions of tomorrow. Especially the dynamic region based allocation of frequencies or bands is a must. With the Version 2006/2007 of its Spectrum Management tools LS telcom has again reacted on needs and requirements from its User-Group, new customers and own investigations. Get a short update:

Land Mobile: Seamless SPECTRAplus integration

The newest version of CHIRplus_LM is available now. The designers and developers of the tool have again done a great job in order to improve functionality and handling. A special highlight is the completely seamless integration of the tool into the SPECTRAplus suite. While even before the systems were closely linked, the new concept allows sharing of information without any user interaction. Users testing the system were delighted of the additional productivity push. Other specials are e.g. the incorporated modifications of the HCM Agreement according to the Vilnius meeting or the super-fast export feature for frequency register exchange with your neighbours. Also handling has been improved e.g. with the new selection manager, allowing to store selections e.g. to leave the work and re-start the next morning where you have been the day before or the enhanced map features.

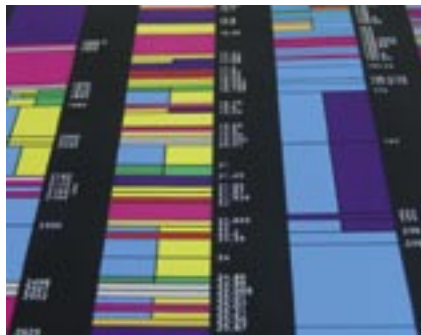
SPECTRAemc: News from the SMS Power Horse

Driven by its huge user community, SPECTRAemc, the inter-service planning and co-ordination tool of the SPECTRAplus family becomes a real all-rounder. Latest thrills are the location based analysis and optimization methods. Investigations can be done to free defined areas of interest or given regions. This allows for check of communication behaviour

along roads or rails or for frequency assignment under consideration of local boundary conditions like regional channel subsets. In addition protected zones may be defined where only limited or no communication is allowed. Furthermore service specific functions have been improved like the LEGBAC analysis for compatibility between Broadcast and Aeronautical Services. This all is rounded up by the consequent incorporation of ETSI standard values as service specific defaults for missing device or antenna parameters.

SPECTRAplan: Beyond the frequency plans

The support of regional assignment strategies by SPECTRAplan has again been improved. Hierarchical allocation structures can be defined and folded with further important parameters. New added vector functionality makes the usage smooth and simple. To cover interconnectivity with neighbours and organizations the EFIS functionality has been substantially expanded.



SPECTRAplus

With the additional power of ORACLE 10g the usage of SPECTRAplus has again become easier. Especially for the system administrators the role-out of SPECTRAplus is a question of minutes as the clients run fully in a WEB browser. Based on new use cases and strategies of our customers, role and password management was completely revised. The configuration manager as well was upgraded. As highlight for users, new standard services for „Radio Operator Certification“ and „Radio Dealer Licensing“ have been introduced, so far only being available for customised solutions. Also the consideration of location based information for assignment and cost analysis has been further improved.



News Consulting & Engineering

Broadcast Services

Post RRC06 Services

With the end of the RRC06 the broadcast digitalization is by far not completed.

A frame was rather created on the basis of which the change can take place in a structured way. Extensive analyses, planning and feasibility studies will be necessary to realize this. This includes among others the conversion of theoretical allotments in real transmitter networks, compatibility studies, analysis of coverage capacities and planning comparison with the according calculations. Regarding all these activities LS telcom AG can support you with its long experience on your way to a digital future.

Digital Concepts for future Networks

Different services require different network structures. Whereas the high frequencies of the L-Band arouse relatively small individual coverage areas when using T-DAB, country overlapping target areas can be expected in the lower part of the frequency spectrum when using DRM. Even within one service different network topologies may be necessary depending on the kind of reception requested. In view of the currently very popular Mobile-TV, with DXB different network structures can be used as supply by means of techniques like eDAB and DVB-H respectively. Consequently, the variety of the digital concepts requires different network topologies. Regarding planning and analyses the LS telcom Consulting Unit can support you with its long experience according to your demand.

Immissions

With the scope of an extensive research project LS telcom has developed methods to analyse immissions of relevant radio services. Depending on the frequency range it is now possible to determine the induced currents and the thermal effects which may be relevant for the immission. The new procedure allows interesting analyses for example comparison of immissions of different network structures.

Telecoms Services

During the last year LS telcom's service unit further continued the long-standing support of Mobile Network Operators



during network implementation and optimization. Typical projects in this area are for example the planning and implementation of a remote control network for microwave links or the parameterization of network elements and links of the transport network for German mobile network operators.

Public Mobile Radio (PMR)

In the area of PMR networks the service portfolio has been largely extended. In addition to "classic" network planning and dimensioning services also consulting services focusing on strategic, legal and financial aspects of system and service procurement has been addressed in several projects. LS telcom supported bidders and parties issuing the invitation to tender with services like determination of technical parameter, budget estimation, preparation of procurement documents and tender evaluation. The size of the implemented projects ranges from single site networks up to nationwide networks for Public Security Services. LS telcom is neither dependent on system suppliers nor other interest groups. Thus several customers sought the independent opinion of LS telcom's experts and asked us to audit their internal project organization, methodology and planning processes to achieve an unaffected and sincere assessment of running and future projects.

5th Anniversary of LS Training Center

This year LS telcom's Training Center celebrates its 5 anniversary. During the last 5 years more than 1300 trainees from 53 countries participated in training and seminars organized and held by LS telcom's Training Center. When will you profit from the wide variety of seminars, our professional lecturers and perfectly equipped training facilities?

Geo Data Services - Handling Giga bytes

LS telcom's Geo Data Service team is the right address regarding all questions dealing with the procurement, conversation and transformation of digital mapping data. More than 1 Terra Byte of data material (digital terrain models, clutter, satellite images, population layers, etc.) has been processed during the last years. Now, more than 600 coordinate systems and 350 datums are supported.

CHIRplus_BC RRC06 Release

With a special CHIRplus_BC pre-release for the RRC06 conference, LS telcom addressed its customer needs for supporting the complex calculations necessary for establishing the RRC06 frequency plans. The new program version contains a complete re-designed allotment database to fully comply with the new data structures introduced by the ITU including multiple areas per allotment. DVB-T and T-DAB allotments are now stored within one database, however, the powerful concept of having a separate info- and working database is still maintained with the new version. Calculation of "Margin" between allotments and assignments as well as between allotments and assignments are implemented. Special emphasis was put on the validation of the results by comparing the CHIRplus_BC calculations with the output of the 1st and 2nd planning exercise from the ITU planning

A new path profile calculation tool has been implemented which allows the detailed analysis of point-to-point calculations along a certain terrain profile. By comparing the simultaneous available field strength results of two statistical (ITU 1546, ITU370) and one diffraction based (Deygout approach) propagation model, the user gets a detailed insight into the propagation mechanism along the path including a graphical display of the major diffraction obstacles.

New graphical features like coloured overlay representation, relief display for DTM or enhanced vector editing are just some of the additional new functionalities available.

The new pre-release was distributed prior to RRC06 to all customers inside the planning area and was further enhanced and updated during the conference due to feedback and suggestions received from the participants.



RRC06 conference in Geneva

software. Of course, CHIRplus_BC supports full import and export of the extended SGML formats as necessary for preparing the input requirements for the planning process.

Additionally the "old" Wiesbaden and Maastricht allotment treatment, corresponding data formats and calculations are still available.

For the 1546 propagation model, the multiple zone propagation path analysis can now be performed on the basis of either a "raster" propagation zone map or by using the GE04 or GE06 propagation zones from ITU's IDWM. Allotment and SFN contour calculations have been optimized with respect to the multiple propagation zone issues.

MULTIlink

MULTIlink, LS telcom's design and coordination tool for microwave links and networks have been upgraded with several new features and functions, to name some of them:

- new "ITU Import/Export" functionality to fully support the SGML data format for electronic ITU notifications.
- new versions of the ITU recommendations 452, 530 and 1546 have been implemented
- new HCM calculation dll to enable calculations according to the harmonized calculation method of the HCM agreement.
- time guarding to track the various deadlines within the coordination process.
- enhancements in the SPECTRAplus interface

LS telcom hosted Cocktail Reception at the RRC06

ITU's Regional Radiocommunication Conference (RRC06) took place in Geneva, Switzerland, from May 15 to June 16, 2006. The Conference was expected to set the framework of Digital Radio Broadcasting for the decades to come. LS telcom, as the international leading supplier of software based planning and coordination solutions for broadcast networks, organized a Cocktail Reception for the participants of the RRC06. More than 150 delegates followed the invitation and joined the event. The participants used the opportunity to meet and discuss with LS telcom's Board Members and staff, which were present at the event. The friendly and fruitful atmosphere invited participants to enjoy themselves by a wide choice of drinks and snacks.

Besides the above-mentioned Cocktail Reception, LS telcom participated in the RRC06 with an exhibition booth on the ground floor of the CCV Building. Consultants and broadcasting experts from LS telcom were available to support and assist our customers during the whole five weeks of the conference. The rather frequent use of this unique opportunity to discuss and solve problems directly confirmed the importance of our presence.

Another goal of LS telcom's participation was to keep close track of the new requirements and regulations in the field of digital broadcasting, in order to provide our customers also in future with software solutions and services of highest quality.

Impressum

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LS telcom

LS_Speed: Spectrum-management Enhanced Engineering Design-suite

LS telcom is once more demonstrating his capability to define the top end standard in planning and coordination tools. Being further developed since the very first days of LS telcom, packages like MULTlink, CHIRplus_LM and especially the CHIRplus_BC have become the market standard since years. Important part of the LS-philosophy during all these past 15 years was keeping the software up to date, even when hardware and operating systems are changing. So the tools have been migrated from Apple Mac basis to Unix and later towards PC platform. Currently the next leap is on the way and our users will as always benefit from it: Based on newest .NET (dot net) technology the existing products are equipped with new standards in handling, database management and graphical user interaction. The new LS_Speed Generation will maintain the high level of quality and comprehensiveness of functionality while being focussed on ease of use.



What may LS_Speed do for you?

The modular concept of the LS_Speed platform allows replacing of modules and seamless addition of functionality, both for stand-alone or a client-server configurations. Focus is laid on Oracle, allowing easy information/data interchange between all LS telcom products as well as import and export of data. In addition also other SQL databases may be integrated.

The graphical user interface is Windows XP based and allows for intuitive operation of the software. Owing to the modern .NET technology the user interface will be extremely flexible allowing all kind of smart actions and user-friendly features. Based on the recently invented GIS Pluto used by the Spectrum Management tool suite SPECTRA, an improved map server concept has been developed. This gives enhanced graphical GIS flexibility in terms of map handling, presentation and user interaction. Especially the combined treatment of raster and vector data is unique in its kind.

For reports, analysis and flexible data number crunching as well as for presentation of results the industrial standard Crystal Reports is used. This offers a great flexibility to all users.

Smooth transition of the software behaviour with added new possibilities and better adoption of customers' workflows are realized with LS_Speed platform. This allows for all users an easy change to the new version. The daily work can be kept nearly unchanged, but additional possibilities are ready to use at a finger tip. The data of the current tools can all be imported in the new version. There will be no restriction for changing to the new generation of the products.

On the roadmap, MULTlink will be the first tool to be completely migrated to LS speed platform by end of 2006. In 2007 CHIRplus_BC and finally in 2008 CHIRplus_LM will follow. The current versions will be maintained with an overlap of at least 24 months in order to grant continuity to the users.

The new versions will be free of charge for our customers under maintenance. LS telcom will offer migration assistance and special training courses at moderate rates as well.

Visit us at our booth...

IBC

The IBC Exhibition will take place at the **Amsterdam RAI** from **8 - 12 September 2006**. With over 800 companies already signed up to exhibit, it will showcase the latest technology and foremost business ideas in broadcasting and media. For further information visit www.ibc.org. Visit **LS telcom at stand number 1.533**.

PMRExpo

The meeting point for Professionals in Public Mobile Radio (PMR) is taking place from 17 - 19 October 2006 at CCL Congress Center, Leipzig for the 6th time already. Find additional information at www.PMRExpo.de