

## LS summit 2007 12th Annual Seminar Day



Dear Readers,

Welcome to the latest version of LS telcom's customer news magazine SPECTRUM and welcome to the LS Summit 2007 – the LS telcom Seminar Day - taking place at our Headquarters in Lichtenau / Germany on 20th June 2007 already for the 12th time.

With both, the publication and the conference, we want to keep you, our customers, partners and friends, up to date with the latest trends in the radio communication and spectrum management business as well as provide news, innovative products and services of LS telcom.

We wish all our guests of the LS Summit a pleasant stay and an interesting, informative event.

And now: Enjoy the reading!

Roland Götz,  
Member of the Board



### LS telcom and ITU renew partnership

LS telcom AG and the International Telecommunications Union (ITU) renew their partnership agreement for the use of LS telcom's network planning and optimisation software MULTLink by ITU. The software is installed at the ITU headquarters in Geneva. MULTLink will assist network planning experts and management operators, regulators and administrations of developing countries to use advanced network planning tools for demonstration, training and trials at regional seminars, workshops and training courses of the ITU. ITU experts plan also to use MULTLink for high-level radio access and core radio planning in next-generation networks (NGN) studies to help the governments and newly-formed regulators of developing nations to outline their future telecoms strategies. The first edition of this agreement was signed between the two parties in 2005. Prior to the agreement the ITU-D carried out a rigorous three-year study of the planning tool market, before selecting MULTLink.

### LS telcom joins the bmcoforum

In May 2007 LS telcom AG joined the bmcoforum e.V., Berlin. The "Broadcast Mobile Convergence Forum" is an international organisation of companies targeting to shape an open market environment for mobile broadcast services. Broadcast mobile convergence combines the strengths and benefits of digital terrestrial TV - such as attractive content, rich media and a high transmission capacity - with the advantages of mobile communication, such as mobility, localisation and secure personal interaction. LS telcom has been invited by the bmcoforum to contribute with its expertise to the development of the interactive mobile broadcast services market. Prof. Dr. Claus Sattler, Executive Director at the bmcoforum said "We are very pleased to be able to welcome LS telcom as a new member to our forum. LS telcom will enrich the forum's knowledge portfolio through their longstanding experience and software development for broadcast and Mobile TV. The other forum members will benefit from their studies and expertise for DVB-H and T-DMB coverage prediction."

### Spot on

#### Spectrum Management System in Senegal

LS telcom was contracted by Rohde & Schwarz to implement a fully integrated and automated spectrum management system at the National Telecom Regulator in Senegal. With this Worldbank Project, LS telcom extends its leading role as supplier of top-of-the-line spectrum management systems.

#### Upgrade at MOD Egypt

The Ministry of Defense (MOD) in Egypt purchased an upgrade for their existing spectrum management software system. By applying the latest spectrum planning and engineering tools from LS telcom, the MOD is now able to exploit all the benefits of the military specific enhancements within the SPECTRA System.

#### CHIRplus\_BC at Antenna Hungary

Antenna Hungary, the national radio and television broadcaster of Hungary, chose LS telcom's flagship tool CHIRplus\_BC for the planning and coordination of analog and digital broadcasting frequencies. Along with the delivery of the software package, customization and training services were also included.

#### CHIRplus\_BC at SNRT

The national broadcast operator of Morocco, Société Nationale de Radiodiffusion et de Télévision (SNRT), also opted for CHIRplus\_BC as their planning tool for analog and digital broadcast planning. SNRT is the second customer in Morocco, after the National Broadcasting Authority (Haute Autorité de la Communication Audiovisuelle), that applied CHIRplus\_BC for their daily frequency engineering tasks.





## News Spectrum Economy

### SPECTRA System

In addition to the usual further developments of the comprehensive administrative and technical functions of the LS telcom spectrum management system, special attention has been paid to advanced configurability of semi- and full-automatic procedures. Major benefits for the user's day-to-day work were achieved by the new SPECTRAplus-SPECTRAemc interface that connects SPECTRAplus workflows with SPECTRAemc wizards. This new interface integrates in a very flexible manner combined administrative and technical procedures for all radio services. Once configured correctly, even complex procedures can be applied easily and safely even by less trained users due to the simple use of automated and pre-parameterized functions. Beyond interfacing between the SPECTRAplus and SPECTRAemc modules, also the computational kernel of the land-mobile service module CHIRplus\_LM can be triggered from the SPECTRAemc wizards. As a result it is very simple to run HCM coordination pre-checks automatically just by one mouse click

### SPECTRAemc

SPECTRAemc, our generic module for technical propagation and interference analysis is functionally growing every year. The already advanced GIS functions have been extended by a configurable display of symbol objects based on user-defined icons, depending on service or class of station. A new GIS export function from the main map window to Google Earth formats allows to overlay calculation results and GIS objects on Google Earth maps. The calculation engine of SPECTRAemc, the wave propagation model library has been updated to the latest versions of ITU models and completely new or further improved technical analysis functions have been introduced. An interesting example is the vectorization of any data/result layer including population analysis, new frequency assignment strategies for shared and/or exclusive area-wide assignments and various new co-site analysis functions to supplement the existing intermodulation analysis. The wizard technology introduced last year to support fully automated and user programmable calculation procedures, has been considerably enhanced and successfully applied for complex technical procedures. A new wizard configuration module is now available for convenient set up and modification

of wizard files. Users will benefit of this wizard function by a tremendous gain in processing speed and quality in their day-to-day works.

### SPECTRAplan

The administration and management of international and national frequency plans can easily be achieved by SPECTRAplan, a module successfully in operational use by many authorities. The standard functions of this module have been further improved, especially for channel editing. In addition completely new functions have been implemented to allow quick checks of frequency assignment requests assuring compatibility with the national frequency plan prior to entering detailed data into the system for technical analysis.

### MONITORplus

A new Argus ORM\_ADC (Argus Direct Channel) interface has been integrated into MONITORplus. It allows to send a request for measurements data to Argus-



controlled Rohde & Schwarz monitoring stations in a similar way like the classical Argus ORM interface. While the classical ORM interface responds to the order with an electronic data file, which can be analyzed offline in MONITORplus, the new ORM\_ADC interface provides an online measurement data stream that can be evaluated directly online in MONITORplus. Another substantial new feature of MONITORplus is its direct interfacing capability with the ESMERALDA monitoring system of Thales. All major mission types (as e.g. SCT, TOR or TR) are supported. The measurement results can be analyzed with the proven functions of MONITORplus, monitoring missions can be generated either from MONITORplus or from ESMERALDA. Both of these new interfaces enable Administrations to very efficiently communicate and share data between spectrum management departments and the enforcement teams

at spectrum control.

### SPECTRAweb

Internet based service offerings of Administrations nowadays provide better customer service and a more efficient handling of the licensing process than the rather cumbersome and error-risky manual data entry from traditional paper forms. In its initial versions, SPECTRAweb was primarily designed to provide a customized web interface for convenient data entry by the applicant himself, including automatic data verification. The manual data entry of the Administration's staff was then replaced by an offline process of electronic data transfer to the central database. Since Administrations beyond such pure data-entry portal also want to offer their customers well defined online service functions, LS telcom has considerably enhanced the functions of our web-based spectrum management module. This includes direct online registration of application data in the central database, retrieval and reporting of existing application's information including optional visualization on digital maps, retrieval and reporting of general spectrum management information and special online clearance functions including automatic interference assessment for short term applications. In the course of the development the SPECTRAweb architecture has been extended to provide such online functions based on WEB service technologies.

### SPECTRAplus

After having migrated SPECTRAplus to ORACLE Forms 10g, the web based GUI technology that runs on the ORACLE application server 10g (OAS), LS telcom is now implementing a new workflow management, based on the ORACLE BPEL Process Manager. This BPEL (Business Process Execution Language) feature will offer a comprehensive and easy-to-use solution for designing, deploying and managing business process and workflows for the users of the SPECTRAplus system. The XML based industry standard BPEL also facilitates to easily integrate third party web services (e. g. Siebel, SAP) into the SPECTRAplus business processes. The BPEL is a programming abstraction that allows composing multiple discrete Web Services into an end-to-end process flow while supporting synchronous / asynchronous interactions.



## News Planning & Coordination Tools

### CHIRplus\_BC goes Mobile TV

Mobile television is currently a hot topic in the broadcast sector as well as in the mobile community. Several technologies are being tested on the market and in some countries there is already a regular service on air. With its latest major release version 5.0.x, CHIRplus\_BC includes a complete set of network planning functions for mobile TV, especially DVB-H and T-DMB. DVB-H receivers show many similarities in performance with DVB-T receivers because they share the same DVB-T physical layer. Differences are mainly caused by the addition of MPE-FEC, time slicing and an additional 4k mode, which offers the choice for the trade-off between SFN network size and mobile reception performance. The ETSI standard TR 102 377 defines 4 representative mobile reception modes for DVB-H, Portable Class A and B, Mobile class C and D, together with different terminal categories and reception environment. Two recent recommendations from EBU (Tech-3317) and the Broadcast to Mobile Convergence Forum, BMCO, (Link Budgets) provide more up-to-date planning parameters, like C/N or minimum required field strengths, not only for DVB-H but also for T-DMB and Media FLO. CHIRplus\_BC already includes these planning parameters as pre-sets for the typical mobile planning scenarios. Interference calculations between DVB-H/T-DMB and DVB-T/T-DAB or even analogue television can be performed and provide an additional benefit in the analysis and design of hybrid networks. Furthermore, also the interference of other (non-broadcasting) services operating in the same or adjacent channels can be easily considered in the analysis process. All mobile TV software features are seamlessly integrated into the overall CHIRplus\_BC design suite and existing installations can be easily upgraded.

### MULTIlink

LS telcom's design and coordination tool for microwave links and networks

has been upgraded with a number of new features and functions rendering the MULTIlink system even more user friendly and versatile for the radio planners. Among others, the new release includes a new "Fast Link Editor" for standard links saving valuable time when creating new links, a generator for HCM default antennas, an updated import filter for NSMA antenna data as well as a highly useful link exchange function supporting even more effectively the coordination process between countries.

### CHIRplus\_SAT

The recent release (V3.0) of the satellite and earth station coordination tool CHIRplus\_SAT comes with a completely revised and enormously improved map handling and presentation as well as improved vector capabilities. Users can navigate easier and faster on their maps and are provided with more vector display functions speeding up the proper judgment of scenarios as well as the creation of presentations. Besides the GIS, also the database structure of CHIRplus\_SAT was tuned according to customer's needs. A document management is now available within the information database allowing an easy handling of documents related to the earth station or satellite coordination process by just attaching them to the corresponding dataset. In addition the database has been extended by commercial and non-ITU data mainly required by operators. Additional frequency tables are available now facilitating the management of frequency sub-assignments on operator or Administration level, which is important to handle situations where the national or regional frequency assignments differ from the international ones stored within the ITU's databases.

### LS\_Speed: Spectrum-Management Enhanced Engineering Design-Suite

**About LS\_Speed:** LS\_Speed is a new

generation of engineering tools, based on Microsoft's breaking .net technology. The user interface takes advantage of additional possibilities like menu docking, free definable screen configuration, multiple screens and additional features. With the implementation of multi-database access to e.g. MS-SQL Server, ORACLE or MS-ACCESS the tools are gaining additional flexibility to the benefit of the users. And by the introduction of Crystal Report's famous document engine, reporting is easy like never before. SPEEDfx, the first LS\_Speed tool, will be rolled out first for the fixed service, step by step replacing the famous MULTIlink. The next candidates on the roadmap are CHIRplus\_BC and CHIRplus\_LM. We are planning to have the process completely finished by 2009. 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.



**SPEEDfx Demo versions now available:** During the past 12 months SPEEDfx, the successor of the widely spread MULTIlink has got a robust framework ready to incorporate all kinds of functionality. During this year LS Usergroup Meeting Demo versions of SPEEDfx will be distributed to interested customers. Current users of LS engineering tools who would like to become beta-testers of SPEEDfx can also apply by mail for their private copy of SPEEDfx: Please send a mail to LS\_Speed-man Steffen Haffa at SHaffa@LStelcom.com

## LS telcom inaugurates new training centre in Paris

LS telcom has opened new modern training facilities in their French offices in Paris. The facilities offer space for training courses for up to 12 trainees and are equipped with a state of the art IT infrastructure and a complete installation of LS telcom's software portfolio. The training centre was inaugurated the first week of

May 2007 with a five-day training on "Advanced Automated Spectrum Management System (AASMS)" for a delegation of the Cypriote Spectrum Regulatory Authority, the Ministry of Communications and Works, Department of Electronic Communications. The centre will accommodate software tool trainings, expert and

technical trainings in selected areas in French and English. LS telcom is very pleased to add this attractive destination to their training & seminar locations: Paris offers good transport connections and customers will be able to combine their study and training seminars with sightseeing in Paris.



## News Consulting & Engineering Services

### LS telcom strengthens Service Capabilities for Private Mobile Radio (PMR)

Based on long-standing, international experience from many successfully completed projects, LS telcom consulting & engineering unit strengthens its service capabilities in the field of Public Mobile Radio / TETRA.

Requirement assessment, initial planning and conception, technical and economical analysis, creation of procurement documents, tender evaluation, detailed network design and planning, as well as project management and controlling - the complete portfolio of professional services can now be handled by LS telcom's neutral, competent and reliable consulting & engineering team.

### MobileTV -Owning knowledge and experience in both worlds – Mobile and Broadcast

Besides the superior planning tool CHIRplus\_BC, LS telcom's Mobile TV product and service portfolio also includes consultancy service covering business & economical aspects, technology & network concepts and regulatory issues, as well as high-level network planning and frequency coordination services during bid-phase, beauty contests, network design and implementation phase.

Benefit from our experience in the combined digital mobile-broadcast world!

### New Training Calendar Available – Now!

LS telcom's Training Calendar 2007/08 comprising well-trying, new and revised seminars is available now.

Please download the new Training Calendar from our webpage [www.LStelcom.com](http://www.LStelcom.com) or contact Ms. Sandra Lahm at [Training@LStelcom.com](mailto:Training@LStelcom.com)/Phone:+49 7227 95 35 482, if you would like to receive a paper version.

The LS Training Centre now offers also the service to inform you via email about seminars and workshops meeting your interests, taking place shortly. If you like to join this service, please register under [Training@LStelcom.com](mailto:Training@LStelcom.com)



## Spot On

### The European Commission selected Eurostrategies and LS telcom...

to elaborate a study on radio interference regulatory models in the European Community. The overall objectives of the study are as follows:

- gather information and ideas on how to apply innovative approaches to the fundamental requirement of avoiding harmful interference between different radio systems,
- analyse the current interference-avoidance mechanisms which are applied in Europe and globally,
- identify concrete technical, procedural and regulatory steps to assist the EU to optimise such mechanisms in order to fully exploit the potential of wireless technologies to benefit European society

### LS telcom selected for BOS-planning in Hamburg

„Behörde für Inneres, Hamburg“ engaged LS telcom as consultant for BOS/TETRA planning in the city state of Hamburg. The engagement of LS telcom includes the planning of the radio- and backbone-network, creation of the financial plan and technical consultancy during the network implementation phase.

### xG-Planner for designing TETRA networks

The **Ministry of Interior of Baden-Württemberg** selected **xG-Planner** as radio network planning tool for the design of the BOS/TETRA network in Baden-Württemberg.

**xG-Planner** has also be implemented at **telent**, a service provider and supplier of telecommunication networks, for the planning and design of TETRA networks.

„Bayerisches Kriminalamt“ has recently purchased LS telcom's mobile planning tool **xG-Planner**.

## Visit us at our booth...

### IBC

IBC Amsterdam will take place from **7th to 11th September** in Amsterdam. LS telcom would be pleased to welcome you at **booth # 1.533**. For further information, please visit [www.ibc.org](http://www.ibc.org)

### PMR Expo Leipzig

From **9th to 11th October** LS telcom again will exhibit at the PMR Expo in Leipzig. For further information, please visit [www.pmrexpo.de](http://www.pmrexpo.de)

## Impressum

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