

## LS Summit 2005 - The conference presentations in brief

### LS summit 2005 10th Annual Seminar Day

All presentations can be downloaded under [www.lstelcom.com](http://www.lstelcom.com)

#### **Reconciling Spectrum Pricing with Government Revenue Desires**

Richard Womersley, ICC Ltd

Best practise in spectrum pricing leads us to the application of fees and charges to any particular radio licence. Fees are meant to recover the cost of managing the radio spectrum whereas charges are meant as an additional incentive to make efficient use of the spectrum. Increasingly, governments around the world have become aware of the increasing value of the radio spectrum and see spectrum pricing as a way to generate additional revenue into the finance ministry's coffers. Is this generation of additional revenue stifling the development of the wireless market? Richard Womersley looked in his presentation at the problems arising in many administrations and presented ways that the situation might be addressed.

#### **Software Defined Radio – Modern Spectrum Management – Cognitive Radio: New Directions in Communications**

Dr.-Ing. Holger Jäkel, Institut für Nachrichtentechnik, University of Karlsruhe

Mobile radio communications continues to be one of the fastest growing markets worldwide. This corresponds to an increasing demand for radio transmission resources and for the application of advanced spectrum management strategies. In order to not affect existing systems more than necessary, the latest digital transmission technologies need to be employed. This request leads to the conclusion that the development of intelligent networks and

cognitive radios becomes necessary. The intention of Dr. Jäkel's speech was to pave the way for the first implementation of a cognitive radio.

#### **Mobile TV over UMTS and DVB-H**

Dr.-Ing. Alfred Baier, Vodafone D2 GmbH

Mobile TV services can be transmitted via 3G or DVB-H networks. After an explanation how mobile TV over UMTS get started and the reflection of currently available mobile TV services over UMTS, the convergence between mobile and broadcast has been discussed. DVB-H applications and commercial models were presented before the achievements of the bmco trial programme in Berlin - world's first trial of mobile TV - have been introduced.

#### **Radio Planning of Hybrid DVB-H/UMTS Networks**

Prof. Dr.-Ing. Thomas Kürner, Institut für Nachrichtentechnik, University of Braunschweig

The benefit of hybrid mobile communication networks combining point-to-point and point-to-multipoint systems should be an optimized transfer of data for both, providers and customers. Optimized network planning even for a single network is a non-trivial task. Hence planning and optimization of hybrid networks implicate great challenges. A realistic traffic scenario based on the public reference scenario of Berlin has been developed and a method for designing a DVB-H network architecture including transmitter position and cell size was introduced. Furthermore, the necessary transmitting power is estimated. Parameters characterizing the benefit of a hybrid DVB-H/UMTS network are used to estimate position and size of cells.

#### **3G Roll-out: Vision, Challenge and Solutions**

Bernard Breton, Marconi Wireless

In this presentation 3G roll-out philosophies and processes have been reviewed. The preparation for the initial commercial launch of a 3G network, the performance

Dear Readers,

In June this year LS telcom AG has organized the LS Summit for the 10th time already. With great pleasure we recognized that the LS Summit has meanwhile become a fixed institution in the schedule of numerous telecommunication experts and spectrum managers. The jubilee conference was attended by around 150 participants from 28 countries, a new record in the number of participating countries. One main focus of this year's conference was – besides current trends from the fields of frequency administration and radio network planning – the convergence of the terrestrial television and mobile radio.

The opportunity to inform themselves about LS telcom AG's innovative products and services in the accompanying exhibition was frequently taken by the visitors. Especially the extended offer about custom tailored workshops and internet based software solutions was of great interest.

As in the previous years, before the conference itself the independent user group took place and contributed as a result of the meeting once again valuable impulses to the future product development directly from the user's point of view.

We were very pleased about the exclusively positive response of the participants to the LS Summit 2005 and it confirmed our intention to organize such an event again next year.



Roland Götz,  
Member of the Board

of pre-launch and post-launch network optimization have been explained. Finally, Bernard Breton described the substantial advantages provided by using a progressive overlay strategy.

### WEB and Intranet based Solutions for Spectrum Management - Structural Demands and Possibilities

Dr.-Ing. Georg Schöne, LS telcom AG

Spectrum Management systems have improved during the past two decades from baskets of small tools and databases to more and more integrated systems. Now everyone is looking towards WEB based tools. The presentation gave an overview of possibilities and limits of current WEB based solutions and the infrastructural requirements correlated with that.

### The Implementation of HDTV in European Digital TV Environment

Stefan Wallner, Harris Broadcast Europe

The success of high definition TV (HDTV) in the USA indicate that the trend to high quality digital TV will also reach Europe within a short period of time. But is it possible to implement HDTV in Europe in a comparable way as in the US? The paper opens with a viewpoint on the current HDTV situation in Europe and analyzes end-to-end implementation scenarios for digital transmission paths and standards used in Europe. Due to the ongoing DVB-T roll-out, a special focus is put on the adaptation required for the digital terrestrial broadcast environment for HDTV. In his conclusion, Stefan Wallner summarized required success parameters and technical recommendations for a profitable implementation of HDTV in Europe.

### Vegetation Effects of Broadband Propagation

Joseph Bae, RRL, Ministry of Information & Communication, South Korea

A model to calculate the attenuation in vegetation is not fully developed yet. Rec. ITU-R P.833-4, is based on an empirical model. To develop a more accurate prediction model, comprehensive measurement data about vegetation effects are needed. Therefore data of effects in broadband and narrowband environment have been collected and a vegetation measurements campaign is under way in Korea since 2004. In this presentation, intermediate results of this measurement campaign have been reported.



## Marconi Wireless and LS telcom announce Reseller Agreement

The Wireless Business Unit of Marconi Corporation entered into an agreement with LS telcom AG to distribute Marconi's Planet® EV wireless network design and optimization software.

"We're excited to partner with an established leader like LS telcom to improve our route to market," said Kevin Hankins, head of Marconi's Wireless Business Unit. "Their experience in spectrum management and software sales as well as their established customer base will enable them to deliver compelling turn-key solutions. The combined value of our organizations will accelerate our market penetration."

Under terms of the agreement, LS telcom will distribute Planet® EV and integrated microwave software for Planet® EV across a defined territory. Planet® EV will replace the current CHIRplus\_UMTS product of LS telcom.

In order to ascertain a smooth transition for existing customers of LS telcom, Marconi and LS telcom have agreed on specific preference conditions and upgrading schemes. On the technical side, interfaces will be available shortly to facilitate a direct integration of Planet®EV within LS telcom's modular set of planning and spectrum management tools.

## MONITORplus: ARGUS Interface Update

From the beginning of the development of the LS telcom spectrum management system, special attention has been put on the interfacing with radio monitoring systems. A successful partnership has been set up between LS telcom and Rohde & Schwarz already in 1995 for joint delivery of integrated radio monitoring and spectrum management systems.



The interfacing module MONITORplus provides both, interfaces for radio monitoring system integration and functions for detailed analysis of monitoring data as compared to calculations, based on records of the licensed database. While supporting various interfaces to radio monitoring systems, the most important one has been the interface to R&S ARGUS because of the significant number of worldwide successful joint LS-R&S projects. The first interface to ARGUS version 3.x has been developed and put into operation already in 1997/98. Since this time, this interface has been continuously further developed. The new ARGUS 5.x supports the fully automatic

processing of monitoring orders created by the MONITORplus operators. User's positive feedback on this new developments included also valuable hints for further improvements in practical applications.

In addition to the updated ARGUS interface, the next major release available soon, will provide other major enhancements related to the administration and analysis of monitoring data.

## Berlin Agreement for the Fixed Service

After releasing the import/export functions of the Berlin Agreement in LS telcom's microwave planning tool MULTlink, the data exchange process has substantially been improved considering input from user group.

Additional plausibility checks as well as performance enhancements have been implemented to optimize the data exchange process. In addition several custom specific developments have been initiated to fulfil the specialized needs of certain users. This includes e.g. a simplified coordination approach which is applied between some of the countries that have signed the Berlin Agreement for more efficient handling of large amounts of coordination requests. Integration of the calculation module from the HCM group and optimization of MULTlink's internal interference calculation are under way to further extend the set of tools for the coordination according to the Berlin Agreement.

## GCC Workshop about RRC-06 technical planning

LS telcom had been invited to give a presentation on the Gulf Cooperation Council (GCC) Workshop on 14th and 15th June 2005 about the upcoming Regional Radio Communication Conference RRC-06, for which preparations are ongoing in more than 100 countries.

The presentation covered general RRC planning issues, notification and first inspections of what has been published to be included for the first planning exercise (the result of the first planning exercise had not been published at that time). Some in-depth example calculations for acceptable field strength on allotment borders were a core demonstration, also shown in **CHIRplus\_BC**, because allotment planning is a novelty in the context of ITU plan generation and only CEPT countries taking part in the Wiesbaden 1995 Agreement had exercised this already.

The Gulf Cooperation Council was founded in 1981 and the six member states of this cooperative framework are: United Arab Emirates, Kingdom of Bahrain, Kingdom of Saudi Arabia, Sultanate

of Oman, State of Qatar and State of Kuwait. Equally represented were three more States, with which cooperative sharing of the frequency resources in the region in the RRC context is a goal: Islamic Republic of Iran, Republic of Iraq and Republic of Yemen. Experts from both, the regulatory bodies of the member states as well as from the broadcasters attended the meeting. The event was the second sub-regional (in an ITU context) coordination meeting for the RRC-06, the first one was held in Bahrain in December 2004.



## Military Mission Planning for Reconnaissance

LS telcom has increased the activities to provide spectrum management solutions for military applications during the last year considerably.

The latest milestone in this ongoing process has been the successful development of **SPECTRAmpt**, a mission planning tool for fully automatic radio reconnaissance applications in all frequency ranges. The new **SPECTRAmpt** module includes the latest LS Pluto GIS and other powerful basic features derived from **SPECTRAemc** as for example wave propagation modelling for the whole radio frequency range.



The new developments and customizations for radio reconnaissance have been jointly defined with customers, thereby focussing mainly on the practical

application of **SPECTRAmpt** in the field. The integration of GPS receiver via USB/NMEA and especially the newly developed wizard technology supporting fully automatic and configurable processes are crucial for the extremely user friendly handling of **SPECTRAmpt** by the military personnel. To use **SPECTRAmpt** is now as simple as the selection of a preconfigured scenario for a given frequency range and the (optional) specification of few basic parameters. Based on this minimal user input, **SPECTRAmpt** calculates fully automatically the area of reception for the current vehicle position and displays the results in overlay mode on the preconfigured maps. **SPECTRAmpt** now supports both, the proprietary, very efficient LS raster formats and also directly the MilGeo PCMAP map data formats for calculations and display.

During recent acceptance testing, it was noted by the operation planning personal, that „**SPECTRAmpt** will have great value for mission planning due to its easy to use GUI and by focussing on powerful functions, which are significant for practical applications“.

## Training Center News

### Broadcast Planning Advanced (FM/TV, T-DAB/DVB-T) (15. + 16. November 2005 - 2 days)

Working in the broadcast planning branch requires being up-to-date. Detailed knowledge about the huge variety of planning functionalities is as important as information about new technologies.

This course has the intention to give planners the skills they need for the complex tasks concerning broadcast planning. It is based on the basic planning course.

The understanding of the more complex functions needed in the planning process is the goal of this training. Many examples will give detailed information about handling the special cases which can occur. Furthermore, digital networks are a main focus of this course.

### Recommendation ITU-R P.1546 (17. November 2005 - 1 day)

The new recommendation ITU-R P.1546 replaces the recommendation ITU-R P.370 which will be still valid in the near future. Nevertheless, it is useful to acquire background information on this highly sophisticated recommendation. There are some big changes as well as several detailed changes, which have more or less influence on field strength calculations. Due to the use of this new recommendation for international coordination everyone in the broadcast business should be informed about how to handle the parameters.

### Technical Issues of Radio Spectrum Management (28. November - 02. December 2005, 5 days)

The training gives an overview about the possibilities and the difficulties of wireless communication. Starting with the basics of wave propagation and the different kinds of modulation up to the Electromagnetic Compatibility (EMC), the seminar will reflect transmission technology. In the second part the focus will be on the different radio services in the different frequency ranges. Interference calculations and technical possibilities to avoid harmful interferences will complete this subject. Finally the attendees will get basic knowledge about radio monitoring and spectrum scanning techniques.

## Telecommunications Regulatory Authority of the United Arab Emirates selected LS telcom solutions

TRA, the Telecommunications Regulatory Authority of the United Arab Emirates, has chosen LS telcom for the supply, installation and training of an automated Radio Frequency Spectrum Management System. The deliverables include a central database, frequency license administration system and revenue tracking, software modules for technical analysis and the newly developed web based customer service. Various payment modes will be implemented leading step by step to a comprehensive e-Payment system.

of the SPECTRAplus database using an internet browser such as MS Internet Explorer amongst other useful new features.

The TRA project marks not only a strengthening of LS telcom's customer base in the Middle East but also provides a platform to demonstrate LS telcom's profound knowledge of web based software services in the context of automated Spectrum Management Systems. Major improvements have been made in the



In the course of this project LS telcom migrated to the new technical standard of ORACLE forms 10i. This step allows an improved and focused development of user interfaces as well as the access

SPECTRAweb software module driving its former capabilities to a new and higher level of possible interactive features in customer service e.g. not only applying to but also changing existing licenses.

### Visit us at our booth...

#### ITU Telecom Americas 2005

Americas 2005 will be the 5<sup>th</sup> regional ITU Telecom Event to be held in and for the Americas region.

The Exhibition will take place from **3-6 October 2005 at the Bahia Convention Center, Salvador de Bahia, Brazil**. Visit LS telcom at **booth #A313**.

[www.itu.int/americas2005](http://www.itu.int/americas2005)

#### PMRExpo 2005

The PMRExpo is a meeting point for all relevant players in Professional Mobile Radio. As a leading supplier for consulting and system solutions, LS telcom is addressing the radio network planning aspects for PMR networks and will exhibit in **Leipzig, Germany, CCL, 8-10 November 2005**.

[www.PMRExpo.de](http://www.PMRExpo.de)

### Spot on

#### CHIRplus\_BC to be implemented in Egypt

In a highly competitive international tender, LS telcom was contracted by the Egyptian Radio and TV Union to implement a fully integrated broadcast planning and coordination software package. The turnkey delivery includes the market leading CHIRplus\_BC software solution, a set of digital mapping data, installation, training and comprehensive maintenance and support services.

#### ... and in Saudi-Arabia as well

Within the next few weeks, LS telcom will also implement **CHIRplus\_BC** at the Ministry of Culture and Information in Saudi-Arabia. **CHIRplus\_BC** has mainly been chosen for its outstanding coordination features that include RRC 04/06 resolutions as well.

#### ITU\_BDT Regional Seminar for Africa

LS telcom presented a white paper titled "Broadcast Mobile Convergence for New Generation Media Networks" at the ITU-BDT Regional Seminar for Africa on Fixed Mobile Convergence and Guidelines on the smooth transition of existing mobile networks to IMT-2000 for Developing Countries. Nearly 200 participants from all over Africa joined the seminar held in Nairobi, Kenya.

#### ITU Regional Seminar for the CEE, CIS and Baltic States

LS telcom was invited to participate at the Regional Seminar on evolving network infrastructures to NGN and related Planning Strategies and Tools, for the CEE, CIS and Baltic States held in Belgrade, Serbia and Montenegro in June. LS telcom held two presentations covering the topics "Tools for Frequency Coordination" and "Planning Tools for Next Generation Network Planning".



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