LS telcom
SPECTRUM

LS telcom

LS telcom customer news magazine

Dear Readers,

The New Year 2008 is well underway ….but it is never too late to wish all of you a happy, peaceful, prosperous and healthy New Year.

We would also like to take the opportunity to thank you - our clients and business partners - for your confidence and successful cooperation within the last year.

Your LS telcom AG

Dr. Georg Schöne   Dr. Manfred Lebherz   Roland Götz

Study on Radio Interference Regulatory Models in the European Community completed

LS telcom and Eurostrategies cooperated on this study to provide the European Commission with information, ideas and advice on how to apply innovative approaches to avoid harmful interference between different radio systems and to develop a series of recommendations.

In order to harmonise the use of spectrum and make it available for as many participants as possible, the EU asked to analyze the current situation and methods of interference avoidance in the member countries and beyond the EU borders. Furthermore current and future possibilities for more efficient methods of interference reduction, both legal as well as technical, had to be investigated.

As part of the Interference Management Project, workshops have been held in Brussels at which thoughts and findings of the consortium have been presented

and discussed. The first Interference Management Workshop was attended by around 80 radio spectrum industry professionals, the day's presentations encouraged many lively discussions and debates on matters including spectrum management, interference, market based spectrum management mechanisms, the R&TTE directive and EMC.

The second Interference Management Workshop was attended by almost 100 spectrum industry professionals. As well as presentations from the project team on the findings of the study, there was very lively debate concerning many of the issues raised especially with respect to the need for a reconsideration of interference and compatibility studies.

The study report analyzes current interference avoidance mechanisms (in Europe and globally) to identify concrete

technical, procedural and regulatory steps to help the EU optimize such mechanisms in order to fully exploit the potential of wireless technologies for the benefit of all sections of society and gives a series of recommendations to the European Commission.

Subjects of this issue

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- Radio Frequency Planning for Broadcasting Services in Seychelles
- Seminar and Workshop on Mobile TV held for MCMC
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IMT in Broadcast Bands - Hot Topic on WRC-07

The WRC-07 of ITU-R was held in Geneva from Oct. 22nd to Nov. 16th, 2007. Nearly 3000 participants from 164 administrations and 104 observers were present and 155 administrations have signed the Final Acts.

LS telcom took part as observer and was represented within the German delegation. In order to stay in close contact with our customers LS telcom had a booth next to the conference venue for the full duration of the conference.

One of the hottest topics was the identification of more spectrum for IMT. IMT now comprises the former „IMT-2000" (such as UMTS) and „IMT-Advanced". This dates back to Resolution 228 of WRC-03. Six ,candidate bands' for co-primary allocation of IMT had been identified. The task of updating the frequency tables of the Radio Regulations ended with a „no change" rather fast for the frequency ranges 410 - 430 MHz, 2.7 - 2.9 GHz and 4.4 - 4.99 GHz. The bands 450 - 470 MHz and 2.3 - 2.4 GHz, where mobile applications already are or have been in many countries, were assigned. From the candidate band 3.4 - 4.2 GHz, known as „C-Band", only the segment 3.4 - 3.6 GHz was identified for IMT for many countries by footnotes. Opposition was mainly raised from countries running satellite services in this frequency range, claiming this to be especially important in heavy rainfall zones. The allocation to IMT was further restricted by power flux density limits on borders. For CEPT countries, an ECC decision, outside ITU, would allow them 3400 - 3800 MHz for IMT.

The broadcast UHF band, 470 - 862 MHz under agenda item 1.4 caused the most controversial discussions. The CEPT common proposal on this issue was „no change" at WRC-07 but to finalize sharing studies until WRC-11. Also the input of the RCC countries, who did not want to alter the Geneva 2006 Agreement (GE06), which extends up to 862 MHz, and of the Gulf States who suffer from extreme propagation conditions in the UHF band and thus do not really have spectrum available to assign to another service in the band, did propose „no change".

CITEL had proposed to open the band up even from 689 MHz upwards, as already decided nationally in the USA, while Brazil, where one of the world wide largest TV networks operates, had a „no change" proposal. Numerous African states, where the UHF band is not very populated with TV, saw no difficulty in identifying the channels above 806 MHz (channel 62) for IMT. Cellular lobbyists claimed this being an issue of bringing cheap „broadband" to developing countries.

A WRC usually deals mainly with issues different from broadcasting, because the broadcasting service is often governed by „Plans". Such a Plan is the GE06 Agreement for the frequency ranges 174-230 MHz and 470-862 MHz, for which years of preparation work had been undertaken, while for assignment of frequencies in the space service and terrestrial services such as the mobile service, WRC´s are the main venues. The broadcast community therefore was under-represented amongst delegates and none of the committee, working group, sub-working group or even drafting group chairmen on agenda item 1.4 on the UHF band was from one of the 120 GE06 countries.

What was decided in the end is an opening up of the frequencies from 790 to 862 MHz for IMT as a co-primary service as from 2015 (end of transition period from analog to digital according GE06). This is technically not feasible if one country uses the frequencies for IMT and an adjacent country stays with broadcasting, but there is neither a harmonization scheme developed, nor has the „sharing studies" been finalized. For studies in between WRC-07 and WRC-11, a Joint Task Group (JTG 5-6) has been established under ITU-R Study Groups. The European Commission has plans to govern the spectrum regulation in the band 790 - 862 MHz.

LS telcom finalized Consultancy Project for Ministry of Interior, Lithuania

The objective of the project was to introduce a Digital Mobile Radio Communication System ("DMRCS") in the territory of the Republic of Lithuania that could ensure the cooperation between the Police, State Border Guard Service and other institutions conducting control under the provisions of Schengen Convention in the field of Schengen acquis regulation. The main tasks of LS telcom in the project were:

1. Preparation of the feasibility study for DMRCS

The study contained the analysis of different technologies, an initial project defining all requirements, a general network planning, as well as a detailed price analysis, justification of network operation models and a risk assessment of the overall project.

2. Preparation of procurement documentation of DMRCS introduction for publication

The public procurement documentation was prepared in accordance to the findings of the feasibility study containing detailed technical specification requirements. Tender evaluation criteria, determining the most economically advantageous tender have also been set out.

3. Project management consulting service during the introduction and acceptance of the DMRCS

Consultation has been provided in evaluating the introduction plans and reports, implementation of the network and accepting the DMRCS equipment.

The project was successfully completed according to the agreed time schedule and enabled Lithuania to implement a "DMRCS", that ensures the effective border security and transit control in accordance with Schengen requirements.

Spectrum Management System in Libya

LS telcom SAS in France was contracted by THALES COMMUNICATIONS France to implement a fully integrated and automated spectrum management system at the Libyan Post, Telecommunication and Information Technology Company (LPTIC). It is based on LS telcom's SPECTRAplus SMS (Spectrum Management System) including the planning module for fixed service (MULTIlink).

With the direct interfacing capability of MONITORplus to the ESMERALDA monitoring system of Thales the system is seamlessly integrated into the overall monitoring infrastructure of LPTIC.

With this project LS telcom extends its leading role as supplier of top-of-the-line spectrum management systems.

Radio Frequency Planning for Broadcasting Services in Seychelles

The assignment was proposed by the regional Indian Ocean Commission, following a specific request from Seychelles within the framework of the Regional ICT Support Programme (RICTSP). The overall objective of RICTSP is to contribute to the regional integration agenda through an effective and efficient Information and Communications Technologies (ICT) environment which will reduce the costs of trade and investment and thereby stimulate economic growth and reduce poverty. The purpose is to achieve a reduction in the digital divide by removing some of the constraints to the efficient use of ICT.

The global objective of LS telcom´s involvement is the creation of new radio frequency plans for the broadcasting services to keep apace with the digital switchover and to review the existing analog ones. The project is handled by *LS of South Africa Radio Communication Services*, LS telcom´s subsidiary office in South Africa.

LS telcom Seminar and Workshop on Mobile TV held for MCMC

On demand of the Malaysian Communications and Multimedia Commision LS telcom carried out a 2-days Information Session on Mobile TV in Cyberjaya. Close to 50 participants, employees from the technical and non-technical departments of the regulator authority, as well as representatives from the telecommunication and broadcast industry joined the event opened by the Chairman of MCMC Dr. Halim Shafie.

Besides information on future trends, technologies, network concepts and planning methods for Mobile TV, the seminar covered also topics like market findings, business modeling and the status of the pilot and first commercial Mobile TV networks worldwide.

The 2-days-Information Session was followed by a 1-day Workshop exclusively for the regulator dealing with economical and regulatory aspects of Mobile TV.

MONITORplus Upgrade at CTO, Czech Republic

CTO, the Telecommunications Regulatory Authority of Czech Republic, has chosen LS telcom to supply the Spectrum Management System already several years ago. Recently, the system has been extended for full integration of the existing LS telcom Spectrum Management System with the new nationwide ARGUS radio monitoring system of Rohde and Schwarz.

This extremely versatile project includes several monitoring centres and a substantial number of remote stations.

For this purpose LS telcom delivered additional MONITORplus software with propagation analysis upgrades. It enables the user to request monitoring actions and results remotely from places all over the country and analyse them afterwards.

Owing to the integrated compare-functions, detailed investigation of measurements including the tracing of unlicensed emissions may be carried out, providing to the frequency manager a powerful inspection and analysis tool.

Concept for Radio Coverage in Tunnels of Hamburger Hochbahn

By order of the Hamburger Hochbahn AG LS telcom created a concept for radio coverage in tunnels with digital trunking (TETRA, TETRAPOL).

One main focus was the possibility of a common use of infrastructure and system technology with the TETRA-networks of the BOS-services. Besides the technical concept an estimation of the costs has been issued and the potential savings by using synergy effects has been determined.

Spot on

Study „DAB in Europe"

The Federal Chancellor Office and the Broadcast & Telecom Regulatory Authority of Austria (RTR) contracted LS telcom to elaborate a study on Digital Audio Broadcast in Europe. Besides technical details, the study will give an overview on the status of digital audio broadcast in Europe considering spectrum, standards, coverage, network operation and content aspects.

MULTIlink used for wireless broadband planning in Georgia

LS telcom´s network planning and optimization tool MULTIlink has been used by ITU-D for technical consultancy on wireless broadband in Georgia. The project ran under the framework of ITU´s technical assistance to Georgia, the use of MULTIlink was based on the partnership agreement between the International Telecommunications Union (ITU) and LS telcom.

Coverage Analysis of terrestrial TV network in Georgia

LS telcom´s broadcast planning department has been intrusted by the Georgian Public Broadcaster to analyze an analog TV-network in Georgia. The analysis was based on fixed reception and performed using the LS telcom broadcast planning and coordination tool CHIRplus_BC.

Mobile TV Information Session, Vienna

The Broadcast & Telecom Regulatory Authority of Austria (RTR) selected LS telcom to hold the Mobile TV Information Session for their technical and non-technical employees covering topics like technologies for Mobile TV, convergence of broadcast and mobile networks, Status of Mobile TV worldwide, network planning and economical aspects as well as regulatory practices for this new promising service.

Additional Licenses for CITC

The Communications and Information Technology Commission Riyadh, Kingdom of Saudi Arabia ordered additional licenses for MULTIlink/PMP, SPECTRAplan, SPECTRAemc and SPECTRAview. With this order the customer doubled its planning capacities in its frequency management.

SPECTRAemc in the UAE

The Telecommunications Regulatory Authority of the United Arab Emirates ordered SPECTRAemc for research and educational purposes in its associated Etisalat University College.

What is the LS Usergroup and how can you participate

The Usergroup was founded in 1997 from users of LS telcom software solutions. The Usergroup is an independent group and its intention is to exchange experiences, to discuss network planning issues as well as to define requirements for new software releases with respect to the latest developments on the market.

A company who has purchased or leased one or more LS telcom software tools is automatically a member of the Usergroup and may nominate participants to the Usergroup Conference. Members have free access to the Usergroup.

If you are interested in participating please contact Ms. Sabine Künstel at SKuenstel@LStelcom.com for further information.

Be right in the middle of things instead of just watching them happen

Would you like to actively participate in our Usergroup Meeting from 30th of June until 1st of July or at the 13th LS Summit on 2nd of July, 2008?

Take your chance and enrich us with your presentation!

E.g. inform the audience about a special project you worked with LS telcom software on, or pick a theme out of the Spectrum Management, Broadcast or the Telecom sector. If you are interested please contact Ms. Sabine Künstel at SKuenstel@LStelcom.com for further information.

Visit us at our Booth...

3GSM World Congress 2008

The 3GSM World Congress is the world's leading wireless communications conference and exhibition. In its 24th year, it will take place from **11th to 14th February 2008** in Barcelona, Spain. LS telcom will be present as co-exhibitor of the bmcoforum and would be pleased to welcome you at **booth #2B82.**

For further information, please visit **www.mobileworldcongress.com**

DVB World Congress 2008

DVB World 2008 will be held in Budapest, Hungary from **12th to 14th March 2008.** This exhibition and conference is now in its eight edition and it has proved to be the leading event dealing with digital video broadcasting in Europe. LS telcom will be present with an exhibition booth and is looking forward to your visit.

For more information, take a look at **www.dvbworld.eu**

Upcoming Training and Seminar Courses

We would like to inform you about the dates of the following courses:

01.-04.04.2008
System Administration Seminar in Ottawa, Canada

08.-10.04.2008
ITU Notification and Coordination of Satellites Seminar in Lichtenau, Germany

07.-11.04.2008
Principles of Radio Spectrum Management Seminar in Lichtenau, Germany

22.-24.04.2008
Military Frequency Management Seminar in Lichtenau, Germany

For further information please contact Ms. Sandra Lahm at SLahm@LStelcom.com or by phone: +49 7227 9535 482.

New LS telcom Office in Oman

In order to provide customers in the Gulf region and its proximity with fast and outstanding quality of service for its products, LS telcom has opened a new office in Muscat, Oman. The office is manned permanently with Arabic speaking support and sales engineers. The 2500 sqft. office provides training facilities for individuals and groups which will be offered on a regular basis and as well on demand. Additional work focus are planning and consulting jobs for regulators and operators.

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