

Second Phase of Ofcom Complex Licensing goes operational smoothly

On October, 8th, 2008, the second phase of Ofcom's complex licensing project went live enabling the reform of the UK's business radio licensing regime. The systems were introduced smoothly into operation in the Ofcom Licensing Centre following an intense testing phase. The integrated solution is based on Siebel CRM, SAP and LS telcom's SPECTRA system and is designed to give productivity improvements through simplification of the licensing regime.

The first phase has been in operation since April 2008 for fixed service radio links and is working very successfully using the advanced UNIFY system architecture. With the going-live of the second phase, a major part of the whole UNIFY-Complex Licensing project is now operational. It adds highly automated innovative functions for licensing and national/international coordination of light, area defined and technically assigned products from various sectors like fixed, business radio, space and maritime to the existing solution. The new system is designed to improve the existing business processes for licence applications and also to fully

support the business radio product reform as introduced by Ofcom recently. More innovative features have been developed for licence trading and fast online clearance of transportable earth station applications. The system offers full WEB enabling allowing Ofcom's customers a fast and interactive licensing process.

In a worldwide comparison, the productivity of the system, its grade of innovation and integration into a spectrum regulators business processes is definitely second to none.

Peter Bury, Ofcom Director of Spectrum Policy said: "After the final business transaction tests today we have taken the decision to go live with Milestone 6/7. This is a very important milestone in the UNIFY project and we are very grateful to colleagues in LS telcom who have worked to achieve this."

LS telcom now also offers this comprehensive „SPECTRA Enterprise“ solution to its customers as high-end solution and an alternative to the classic system solution „SPECTRAplus Professional“.

LS telcom becomes Member of Asia-Pacific Broadcasting Union (ABU)

LS telcom has become an affiliate member of the Asia-Pacific Broadcasting Union (ABU) to benefit from further opportunities to learn about latest evolutions and developments in the broadcast industry of the Asia-Pacific region and to exchange expert opinions. LS telcom is already widely known in the region with contributions made at well-known conferences and seminars about latest broadcast technologies and industry challenges.

"We are very pleased to become an affiliate member of the ABU", declared Roland Götz, COO of LS telcom, "we look forward to actively participating in ABU activities and to share and exchange experience with other Union members to further the development and evolution of broadcast in the region."

Numerous customers in the region have been relying on LS telcom for many years,

such as the Malaysian Communications and Multimedia Commission (SKMM), the Radio Television Malaysia (RTM), the Ministry of Communication and Information Technology (POSTEL), Indonesia, IDA Singapore, Bangkok Broadcasting TV (BBTV), Thailand as well as the Telecommunications Regulatory Commission of Sri Lanka (TRCSL), to mention just a few.

The ABU is a non-profit, non-governmental, professional association of



broadcasting organisations facilitating the development of broadcasting in the Asia-Pacific region and organising co-

operative activities amongst its members. It currently has over 194 members in 57 countries, reaching a potential audience

Dear Readers,

The year has hardly begun and yet we are already several weeks into 2009. May the months to come be full of contentedness and health, happiness and success. Especially in economically tough times it is even more important to show some optimism, determination and energy.

Also in 2009 our stated aim is to spark you as customer and to set benchmarks with our work.

During the **UserGroup Conference** and the **LS Summit 2009** we once again intend to actively design the future in the field of Spectrum Management, telecommunication and broadcast. We are very happy about the fact that meanwhile these events have turned out to be a permanent feature for many experts and we would like to invite you to the **LS Summit on 1st July**.

Exciting topics, famous speakers and the opportunity to talk to international radio experts will be waiting for you. An attractive social program will round off your visit.

You are, of course, very welcome to enrich the event with your presentation. Please send any suggestions to Ms Sabine Künstel (SKuenstel@LStelcom.com).

We now hope that you will enjoy this first SPECTRUM of the New Year.

Kind regards,

Roland Götz
COO



of about 3 billion people. The ABU is the third largest of the world's eight broadcasting unions, but covers the largest geographic area of the world.

LS telcom is also already a member of the **bmcoforum**, the Broadcast Mobile Convergence Forum, based in Berlin, Germany.

“Experiencing Convergence - MyBroadband”

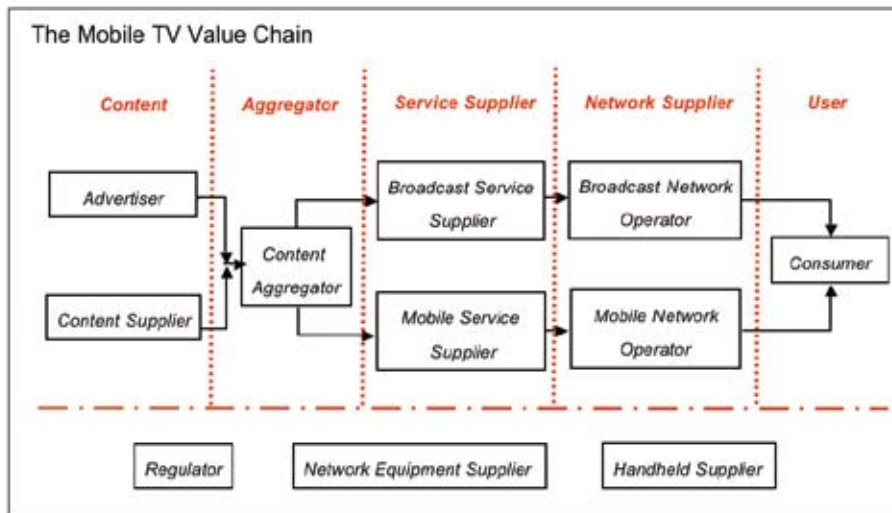
LS telcom delivered a presentation about “Mobile TV – Possibilities and Challenges of the new Convergent Media Services appearing on the Screen in Malaysia” at the conference ‘MyBroadband’, taking place from 28th until 30th of October 2008 in Kuala Lumpur, Malaysia.

Several technologies supporting Mobile TV exist and many trials have been carried out in various countries, but key regulatory, economic and technical issues

sources of income may there be, public licence fee or advertisement? Who runs the network? Who has access to the available spectrum? Who delivers the content? What synergies are there within existing business activities, etc.?

Companies are still hesitant to offer Mobile TV. Premium prices cannot be charged for a “nice to have” service. There also remains the doubt whether consumers will accept to pay extra for

Whatever the business model for Mobile TV will be: There is for certain a clear consumer demand and new market opportunities, such as new services, new audience, new ‘prime times’ for advertising and more traffic generation. Nevertheless, it seems that the business model is too complex for one company to assume the risk and to cope with all the challenges of Mobile TV. The answer will probably be a joint effort of a consortium of companies with experience in the respective domains. And plans for joint undertaking take time to develop....



need to be resolved. The presentation dealt with these issues and questions regarding Mobile TV and illustrated different possible business models. Elaborating a detailed, future proven and successful business model includes solving the following issues: What kind of service exactly will be offered to the consumer? Who will manage the relationship with the customer? What billing mechanisms are the best? What other

the mobile reception of channels they already receive at home. But whatever the approach will be to offer Mobile TV: It has to be considered that not all existing TV content is suitable for being watched on a handheld device and that Mobile TV consumption will be different from ‘traditional’ television. Handheld TV consumption will take place during ‘idle times’ as a time filler between many other activities of people.

Spot on

Newsflash on CHIRplus_BC

New edition CHIRplus_BC v.5.2.1.

The new edition CHIRplus_BC v.5.2.1 is available since December 2008, including the following features:

- Automated delay optimisation in single-frequency networks
- Integration of RJ81 (for ITU Region 2)
- BR-IFIC import adapted to new structure with whole GE06 Plan now incorporated in the TerRaSys by the ITU

Customers under maintenance received the version before the end of the last year.

TP EmiTel, Poland acquires additional CHIRplus_BC Licences

To cope with the increasing demand for broadcast network planning TP EmiTel has acquired additional software licences of CHIRplus_BC to adjust their broadcast planning & design capacities.

DTT Frequencies Review in Malaysia

With wireless communications moving towards digital to improve spectral efficiency, countries around the world have started to plan and some have even completed their rollout of Digital Terrestrial TV (DTT) services. In 2005, Malaysia announced their plan to digitalise nationwide terrestrial television services with 2015 as the analogue switch-off date. A study on the approach to migration to digital TV was carried out in 2002. Subsequent to this, a trial service was launched by RTM in 2006. There has also been some DTT technology trials conducted in Malaysia by the Communications & Multimedia (C&M) industry. These trials were aimed at exploring the potentials of the new DTT services and applications. Furthermore mobile TV trials were conducted on DVB-H (by Maxis/Astro and U Mobile), MediaFLO (by Maxis/Astro) and T-DMB (by MTSFB).

SKMM is now working on the spectrum allocation policy and preparing for the implementation of DTT services in Malaysia. SKMM has worked out a detailed plan for digital TV migration and its frequency use. LS telcom has been engaged to check and further optimise the plan. Parameters and conditions for all digital technologies were examined and checked, such as DVB-T, DVB-H and the Band III technologies T-DMB, T-DAB and DVB-T. The objective was to reach coverage for each technology that equals or is better than the current analogue coverage.

Extensive nationwide coverage calculations and border checks were made with the support of LS telcom’s CHIRplus_BC broadcast planning tool for fixed and mobile reception. Multiplexer (MUX) layers’, single frequency networks’ (SFN)

and multi-frequency networks’ (MFN) implementation issues were studied and advice given on channel allotment as well as optimisation of technical parameters. For the simulcast of the years to come compatibility was checked between existing analogue and the new digital technologies. Interference caused by DTT on analogue TV was analysed and vice versa – this analysis was carried out for each single television programme. Moreover, LS telcom gave recommendations for an optimal analogue to digital switch-over and guidelines for analogue switch-off (ASO) strategies.

Initial target for the commercial roll out of Free-To-Air DTT service is set at early 2010. The infrastructure is expected to be built by a common integrated infrastructure provider providing bandwidth rental to the broadcasters.

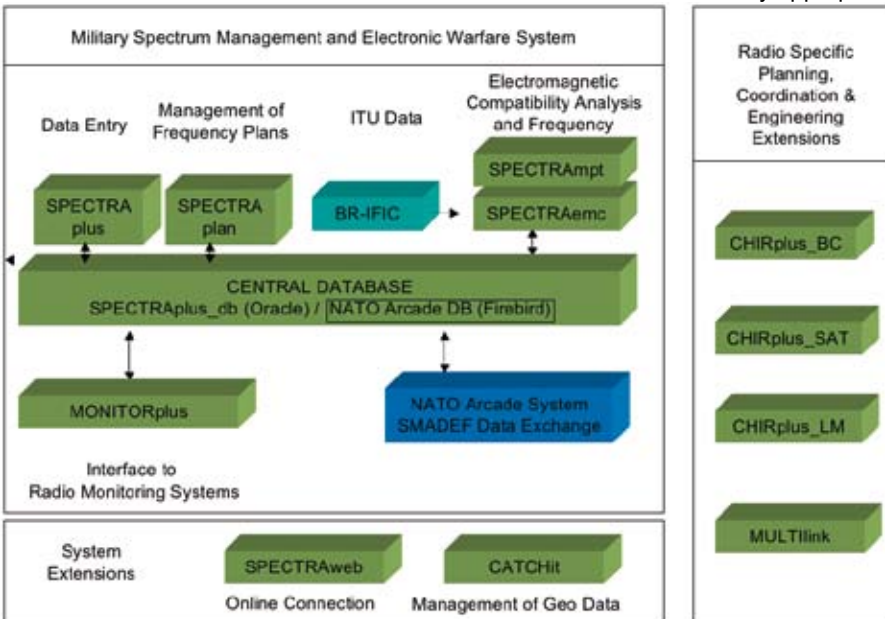
SPECTRA for Military Spectrum Management interfaces with new Firebird Version of NATO's ARCADE Database

LS telcom's military spectrum management solution SPECTRA is now interfaced with the new ARCADE database standard format based on the Firebird RDBMS.

LS telcom's solution is a highly modular system and covers strategic pre-mission planning during peacetime and crisis, but can also be extended by appropriate

The SPECTRA system considers civilian frequency assignments (ITU, CEPT, ERO) in order to guarantee interference free assignments to the forces. The system's hierarchical and task-oriented information access and its degree of detail in calculation enables the user to carry out an extensive portfolio of functions and processes. Sophisticated calculations, what-if analysis on the basis of parameter or scenario changes, highly specialised functions for high-level strategic frequency management are all available as well as simple, highly automated 'one-button-operations' for immediate results presentation to soldiers in missions. The integrated state-of-the-art wizard technology supports the preparation and modelling of different mission scenarios in peacetime for ad-hoc and real-time calculation during crisis.

NATO and all National Allied Radio Frequency Agencies (NARFA) will change their Oracle-based ARCADE database system to ARCADE Firebird and the SMADEF to SMADEF XML. The migration to the new open source standard Firebird will be finalised by June 2009. True interoperability between systems is the ultimate objective and vital for successful military frequency management.



The military specific SPECTRA solution will now be operated via the free ORACLE XE database. The connection between ARCADE and SPECTRA is based on ORACLE database link/Gateway features.

modules to support wartime tactical mission and scenario planning. It includes effective frequency management and coordination.

Radio Coverage for Digital PMR Networks: Efficient Radio Network Planning through optimised Site Configuration

The main objectives and challenges of radio network planning are obviously to achieve or exceed coverage and network quality specifications with minimal costs involved; and this is especially important when introducing a nationwide digital TETRA network.

Optimum results will only be achieved by meticulous planning adapted to each coverage condition and area, adjusting planning parameters according to each individual coverage task. Precise planning is the guarantee to not only achieve the expected quality and network coverage, but at the same time to ensure a most cost-effective network design as well as a most profitable network operation.

The following case study illustrates how an optimised transmitter configuration can increase the quality of service while keeping the same number of sites.

Coverage category	% of coverage for the whole area
Deep Indoor	62,9 %
Indoor / Waist-Height	88,9 %
Indoor / Head-Height	98,7 %

Table 1: Coverage categories of Reference Network - Standard configuration

Table 1 consists of different coverage categories for a typical TETRA network

together with the actual coverage per category for the complete area under study (in percentage), taking into consideration a standard configuration (Omni-antenna with 7,5 dBi gain) for all sites.

Through detailed planning and the optimisation of the configuration of each single site, it was possible to increase coverage quality considerably for the area under study – while keeping the same number and the same position of sites. The new extended network coverage is shown in table 2:

Coverage category	% of coverage for the whole area
Deep Indoor	90,1 %
Indoor / Waist-Height	98,7 %
Indoor / Head-Height	99,8 %

Table 2: Coverage categories of Reference Network - Optimised configuration

For the coverage category 'Indoor / Terminal at Waist-Height' coverage was increased by 9,8% and for the coverage category 'Deep Indoor', which is in particular difficult to realise, coverage was even increased by 27,2%.

In terms of technology this is facilitated by an optimised site configuration, for which the maximal path loss of a base station to be bridged was improved in average

by 6dB. This led on the one hand to a greater reach and on the other hand to an enhanced coverage quality within the cell area (increase of the average signal level by 6dB).

If, otherwise, the same network performance and coverage quality had to be realised by a standard site configuration, one would have to increase the number of sites by a factor of 1,6.

The cost for the realisation of a site with an optimised antenna configuration is only about 23% higher than for a site with the standard configuration; but only 60% of the number of sites would be needed in this case.

Therefore it can also be estimated, that by applying an optimised site configuration, while keeping the initial network coverage quality, a potential of approximately 26% of investment expenditure can be saved as well as around 20% of operational expenditure over a ten years operating time.

Efficient radio coverage planning with an optimal configuration of each individual transmitter is therefore the basis of any cost-effective digital PMR network design and operation. It guarantees simultaneously that network quality and coverage are maximised.

Personalised Customer Trainings

LS telcom sharing its expert knowledge

Strategy Trainings:

Romania's S. N. Radiocomunicatii S.A.'s (SNR) top management joined a management level workshop in Lichtenau delivered by LS telcom experts to evaluate the outcome of the RRC06 Plan for Romania, in order to build a strategy for the migration from analogue to digital technologies and for the development of an initial frequency plan for Romania.

LS telcom microwave network specialists shared their knowledge with **Magyar Telekom Plc., Radio & Transmission Access Planning Center, Hungary**, during a two-day consulting course on planning and optimisation of microwave networks. Subjects addressed were ITU Recommendations, spectrum regulation, wave propagation path profiles analyses, microwave devices and antennas, availability and error performance, power budget calculation, frequency planning, channel assignment, interference analyses and network optimisation. Included was also a question & answer session.



Tool Trainings:

SRG SSR idée suisse booked a personalised introductory course for CHIR-plus_BC for their new team members. The training took place in Zurich at the customer's premises. Topics addressed field strength and coordination calculations, the network processor and analogue as well as digital network analyses.

GTC – General Telecommunication Corporation GmbH, Germany obtained a one-week personalised training "Basics of Fixed Network Planning" in addition to a MULTLink training at LS telcom headquarters in Lichtenau.

The **Telecommunications Authority of the UAE (United Arab Emirates)** received a five-day training course on CHIR-plus_SAT. The course took place in the customer's headquarters in Abu Dhabi.

The **"Deutsche Flugsicherung" (DFS) (German Air Security)** enjoyed another tool training for SPECTRAair at the LS Training & Competence Centre in Lichtenau.

For the **Electronic Communications Office, Latvia**, an exclusive one-week training course was provided at their premises in Riga, addressing SPECTRA-plus_admin and SPECTRAplus_bill. The training participants learnt about user management, database libraries, service and sub service structures, national and international requests as well as data entry for various services with different scenarios as for example Broadcast, Mobile, Fixed, Satellite, Amateur, Maritime and Aeronautical. Moreover using reports and statistics functions and special services such as complaint, approval and project management were trained.

Spot on

TETRA Network for the Bermuda Islands

LS telcom was engaged by SITA B.V., Germany, to contribute to the planning of a TETRA network for the Bermuda Islands.

LS telcom determined link budgets and planning parameters for handheld and car mounted handhelds for the used TETRA system. Also coverage planning, network design and a computer-based selection of possible site candidates had been performed by the LS telcom experts.

UserGroup Conference and LS Summit 2009

LS Summit 2009

Wednesday, 1st of July 2009

Call for Papers.

Top class speeches from thought-leaders will be on the agenda again this year.

If you would like to contribute to the programme with an expert presentation on an innovative subject, please send your proposal for evaluation to Ms Sabine Künstel (SKuenstel@LStelcom.com).

We look forward to receiving your ideas! Please note, however, that we cannot accept product presentations.

UserGroup Conference 2009

Maximum Benefit from Shared Experience!

LS telcom software users are invited to exchange hands-on user experience in the **UserGroup Conference** taking place on **Monday & Tuesday, 29th to 30th of June 2009**. On the agenda again: Best practise presentations by users for users! If you would like to actively contribute with a presentation on a certain user topic or a report on a project related to our software or service portfolio, please contact Ms Sabine Künstel (SKuenstel@LStelcom.com).

Reserve your participation now!

Contact Ms Sandra Lahm on tel: +49 7227 9535 482 or by E-mail: SLahm@LStelcom.com.

Visit us at our Booth...

DVB World 2009, Berlin, Germany
9th - 11th March 2009

ABU Digital Broadcasting Symposium 2009,
Kuala Lumpur, Malaysia
10th - 13th March 2009, Stand no. 6

Electronic Warfare 2009, London, UK
14th - 15th May 2009, Stand no. 72

TETRA World Congress 2009,
Munich, Germany
26th - 29th May 2009, Stand C904

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