Global Spectrum Experience

// New software version

The new release 7.3 of CHIRplus_BC

There are many reasons to change to the new release 7.3. Here's an overview of what's to enjoy in version 7.3:

First of all, users benefit from a complete re-make of the user interface in version 7.3, in particular the toolbars and 2D-graphics. The new modern toolbar is user configurable and extremely intuitive. The path profile window comes in a comprehensive re-design and now offers dynamic height and clutter data updates. Version 7.3 provides various new features for even more precise planning, such as morphology parameters and options, which can now be viewed directly in the profile plot. GIS objects, such as transmitters, allotments and vectors benefit from an advanced configuration with flexible user-definable labels, including the interface to Google Earth. Access from the database to transmitters and allotments is more flexible with quick access buttons and menus. At the same time, the WMTS (Web Map Tile Service) interface to servers from national cartographic institutes (BKG, IGN, GeoNorge ...) has been enhanced.

It goes without saying, that technical calculations in CHIRplus_BC are updated to meet the latest standards and recommendations. To take an example, the DAB+ Network Processor of the new release version includes the very latest EBU and ITU recommendations for preset configura-tions, the EBU Tech 3391, "Guidelines for DAB Network Planning", Geneva, May 2018, and the Report ITU-R BS.2214-3, "Planning parameters for terrestrial digital sound broadcasting systems in VHF bands", Geneva, April 2019.
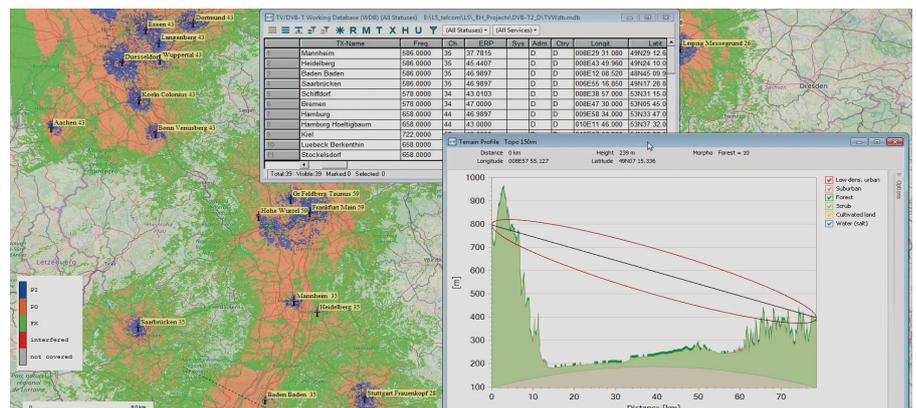
Speaking of network processing, CHIRplus_BC features an unparalleled and extremely efficient multithreading network processor, which calculates several results simultaneously and reduces the calculation time for nationwide network calculations considerably.

Efficiency and automation of repetitive tasks also play an indispensable role in day-to-day programme usage. This is why macro (scripting) functions in CHIRplus_BC version 7.3 were greatly expanded to allow for automatic execution of complex network and frequency planning tasks. CHIRplus_BC users can configure their own macros and a mouse click is sufficient to launch the pre-defined macro workflows - another real differentiator compared to other broadcast planning software.

Last but not least, CHIRplus_BC covers all broadcast technologies, including the latest ATSC 3.0 and (F)eMBMS planning parameters and features. ■

Also read the article about CHIRplus_BC's extensive capabilities for (F)eMBMS planning on page 3.

CHIRplus_BC version 7.3

Annual CHIRplus_BC USERgroup and Spectrum Summit in Lichtenau/ Baden, Germany

Europe's largest Spectrum Summit

200 delegates from 34 countries attended the 24th Annual Spectrum Summit featuring topics under the motto "Spectrum for Everyone & Everything" hosted by LS telcom. Delegates came from regulatory authorities, mobile and broadcast operators, industries, industry associations, spectrum consultants and research institutes. The agenda included an interesting panel discussion for and among broadcasters on whether 5G will encompass broadcasting.

The CHIRplus_BC USERgroup

The Spectrum Summit was preceded by the annual USERgroup, which unites the organizations that use LS telcom's software. This year 24 CHIRplus_BC users from 18 organizations

and 15 countries attended the meeting.

The CHIRplus_BC USERgroup is an excellent opportunity for CHIRplus_BC users to exchange tool experience with other users and learn best practices from each other. It helps advanced users to deepen their user experience, and new users to discover the variety of functions and possibilities of the tools. Users are encouraged to express their priorities and requirements for new software capabilities and this way can influence future developments of CHIRplus_BC. LS telcom's support service explains the developments made during the previous year and presents the next release version.

The day following the USERgroup, users were

able to benefit from the hands-on training, detailing the rtf-reporting functionality and several sample applications of the macro scripting language.

Next year LS telcom will celebrate the USERgroup's 25th anniversary on June 29th, 2020 and the Spectrum Summit on July 1st, 2020. ■ www.spectrum-summit.com

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FM broadcast transmitter optimization for Lesotho Ministry

LS of South Africa Radio Communications was commissioned by Lesotho Ministry of Com-

Chromadek transmitter shelter

munications, Science and Technology, Lesotho National Broadcasting Services (LNBS), for major engineering works, the installation of Chromadek transmitter shelters as well as the upgrading of the heating, ventilation and air conditioning (HVAC) system. The work was carried out to support the upgrading and expanding of existing FM infrastructure and equipment to offer FM signal distribution to other FM radio stations.

The LS of SA engineering team built everything from new plinths to the complete Chromadek shelters, including floors, Chromadek walls, a

tropical roof support system and the roof. Also part of the work was the installation of electrical cabling, the HVAC system and the issuance of final certificates of compliance per site. Difficult access to some of the eight sites complicated the work. Some sites were accessible by road but other remote sites necessitated the transportation of all material by labour force. At certain sites, the LS of SA team had to remove FM containers to a temporary position and reconnect all electrical, earthing and RF feeder cables to ensure interim functioning until the final installation of the new FM shelters. ■

Drone-based measurements for Germany's Federal Network Agency BNetzA

The Federal Network Agency of Germany, BNetzA, concluded a framework agreement for drone-based measurements with LS telcom's subsidiary Colibrex. Under the agreement, Colibrex provides services for drone-based broadcast antenna measurements as well as radio monitoring via drone.

Colibrex performs the broadcast measurements to check the antennas' licence parameters and the radio monitoring to record frequency use, to detect interference in different frequency ranges and to verify microwave links.

During the bidding, Colibrex was able to convince BNetzA of the many advantages of drone-based measurements compared to conventional measurement methods. At the same time, Colibrex attracted BNetzA's interest with special measurement system capabilities, such as spectrum measurements in the frequency range to up to 30 GHz and Direction Finding via Angle of Arrival (AoA) as used in LS telcom's LS OBSERVER. ■

LS OBSERVER - Airborne Monitoring Unit (AMU)

Introduce (F)eMBMS with CHIRplus_BC to offer transmission of sports and live events to mobile and portable devices

CHIRplus_BC, the world-leading broadcast network planning and engineering software, sold in over 70 countries, features (F)eMBMS planning functionality.

"Evolved Multimedia Broadcast Multicast Service" (eMBMS) or "Further evolved Multimedia Broadcast Multicast Service" (FeMBMS) is a technology standard that allows the simultaneous distribution of identical media content to a large number of mobile and portable devices. The simultaneous content delivery via eMBMS saves frequency spectrum and transmission network resources, making it an efficient technology for exploiting Mobile TV services via LTE and 5G.
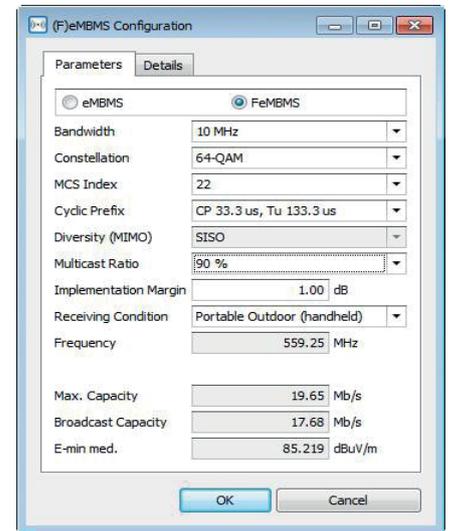
With CHIRplus_BC, the user can define the percentage of unicast and multicast to simulate exactly the network capacity needed for the different services on offer to the end user. CHIRplus_BC provides the right balance of broadcast/multicast coexistence with unicast mode to optimize resource utilization. CHIRplus_BC calculates the coverage for different reception modes, such as portable outdoor (handheld), rooftop antenna, light portable indoor (handheld), light indoor (0dBi antenna).

CHIRplus_BC supports all the parameters for the efficient planning of (F)eMBMS networks from ITU BT.2254 and 3GPP which are summarized in the EBU TR 034 Report. As different input assumptions were applied and parameters were not used consistently in various studies, representatives from the broadcast as well as the mobile industry harmonized parameters in this report in order to be able to compare coverage and results of future studies on the subject matter.

CHIRplus_BC addresses mobile operators planning to introduce (F)eMBMS as well as broadcast operators providing broadcast sites to other operators and service providers rolling out eMBMS services. ■

(F)eMBMS configuration

Digital Terrestrial TV project in Indonesia successfully finalized

LS telcom was commissioned by PT Solitechmedia Synergy, their local partner, to support them in the nationwide Digital TV planning for the Directorate General SDPPI of the Indonesian Ministry of Communication and Information Technology Kominfo. The project terminated successfully with the plenary meeting of all stakeholders in November 2018.

LS telcom first defined different Digital Terrestrial TV (DTTV) service areas, which were based on the analogue contours and adapted to existing administrative districts where possible. LS telcom then performed the DTTV network planning for several border and dense areas, such as the Singaporean border area and Jakarta. LS telcom's planning methods and the results served as a model for the DTTV planning of the remaining service areas. The project also covered extensive knowledge transfer of digital TV planning methodology and training on LS telcom's digital broadcast network planning suite CHIRplus_BC for PT Solitechmedia employees.

LS telcom's experts performed the planning and defined a frequency plan for the final digital DTTV network as well as for the simulcast phase, when analog and digital TV co-exist. They determined the possible interference and the number of channels that can be operated during the simulcast phase. ■

The project participants from PT Solitechmedia Synergy, Kominfo, SDPPI, LS telcom and RAI Italy after the final DTT project meeting in Indonesia in November 2018

Drone-based broadcast antenna measurements for Spectra Telcom

LS telcom performed drone-based broadcast antenna measurements at four broadcasting sites and in the UHF band in the area of Cerro Azul in Panama to determine and verify the on-site performance of the transmit RF antennas. Spectra Telcom RPA selected LS telcom's drone-based measurement service for its many advantages over other antenna measurement methods, such as flexible deployment, higher accuracy, lower costs and less disturbance to the antenna and the environment. The drone operates without intrusion to the broadcast service. LS telcom has carried out drone-based radiation pattern measurements on over 500 antennas in the USA, Europe, Africa, South America and Asia. ■

CHIRplus_BC for Italy

RAI, the national public broadcasting company of Italy and a long-standing customer of LS telcom, has acquired additional licences of CHIRplus_BC together with detailed digital terrain mapping data, training, support and maintenance. CHIRplus_BC provides RAI with enhanced macro functions such as automated SFN delay optimization, automated channel assignment, LTE-DTT interference prediction and multi-thread capabilities for significant reduction in calculation time. ■

FUB (Fondazione Ugo Bordoni), a higher education and research institution in the telecommunications sector, established in 1952 within the Ministry of Posts and Telecommunications, also acquired CHIRplus_BC. ■

Digital terrestrial broadcast training for Korea

Korean broadcasters attended a one-week customized training course on Digital Terrestrial Broadcasting at LS telcom's headquarters in Lichtenau/ Baden, Germany. Attendants came from KBS (Korean Broadcasting System), SBS (Seoul Broadcasting System), Munhwa Broadcasting Corporation, Korea Educational Broadcasting System and JNS Korea. ■

LS telcom at ABU Digital Broadcasting Symposium 2019

Andy Streit talked about "The Value of Terrestrial Network Planning for Broadcast Technologies in 5G Networks" at the ABU DBS in Kuala Lumpur, Malaysia in March this year. ■

// Meet us at...

- **ABU Digital Broadcast Symposium** | Kuala Lumpur/Malaysia | March 2nd – 5th, 2020
- **NAB Show** | Las Vegas/USA | April 19th – 22nd, 2020
- **IBC** | Amsterdam/Netherlands | September 11th – 15th, 2020

Find the complete course programme here:
www.lstelcom.com/en/ls-training-academy/

One-week training course for Romanian national communications regulatory authority Ancom

The Romanian national communications regulatory authority Ancom ordered a one-week broadcast training course from LS telcom for 20 participants. The training covered the modules 'FM and TV Broadcast Antennas', 'DVB-T2 – Measurement Technology in Theory and Practice' as well as 'DVB-T2 – 2nd Generation Digital Video Broadcast'. The training took place in Timisoara in Romania at the premises of Ancom. ■

Digital terrestrial broadcast training for Jamaica

LS telcom delivered a customized training course to the Spectrum Management Authority of Jamaica with a focus on DVB-T2. Comprehensive knowledge was imparted to attendants about DVB-T2 features, planning and coordination as well as the status of DVB-T2 deployments. Compatibility of LTE and DTT as well as DTT switchover strategies and DTT network implementation concepts were also addressed.

Besides DVB-T2, the customized training covered other modern broadcast technologies such as ATSC 3.0 and ISDB-T. Trainees performed planning exercises on ATSC 3.0 on real stations in Jamaica. ■