

IoT Planning

with CHIRplus_TC...

Nationwide DVB-T2 Network Rollout

for MYTV in Malaysia...

„It was great to be there“

at the CHIRplus_BC USERgroup 2017...



// United States

Cavell Mertz & Associates has purchased CHIRplus_BC with ATSC 3.0 planning capability

Cavell Mertz & Associates, a US-based professional engineering consulting firm, has purchased the CHIRplus_BC Broadcast Planning Tool.

Key to the sale was the product's support for both the next generation Advanced Television Systems Committee (ATSC) 3.0 as well as the current ATSC 1.0 standards. From large scale Single Frequency Networks (SFN) to predictive interference models factoring in LTE network build-outs, CHIRplus_BC delivers a comprehensive set of capabilities designed to maximize next generation of over-the-air network deployments.

A critical step in the evolution to the next-

generation TV digital broadcast technology, the deployment of ATSC 3.0 delivers broadband throughput, enabling the delivery of custom content, improved streaming capabilities and support for a wide array of on-demand options. The recent Notice of Proposed Rule Making (NPRM) released by the FCC (proposing the industry adoption of the ATSC 3.0 as the next generation technology standard) combined with the recent conclusion of the Incentive Auction, starting the clock for a nationwide repack of over-the-air broadcasters,

has signaled significant changes in the coming years for the broadcasting industry. "With the implementation of ATSC 3.0 now on the horizon and the expected growth in the use of SFN systems, the need for a robust RF planning and evaluation tool became evident. The LS telcom CHIRplus_BC toolset comfortably answered that need for us," said Gary Cavell, President at Cavell Mertz & Associates, Inc. "We look forward to helping broadcasters explore their options with this new technology." ■

// Malaysia

Coverage and design analyses for FM transmitter site in Malaysia

LS telcom will support Cense Media Sdn Bhd, in Malaysia, in obtaining the approval of the Apparatus Assignment (AA) license for an FM transmitter site.

LS telcom will provide detailed site design and coverage planning for the transmitter. This includes the preparation of the antenna pattern and antenna design requirements

for submission to the antenna manufacturer. LS telcom will also deal with FM optimization, effective radiated power (ERP) and antenna design optimization. Besides the result re-

port, the filled in licence form is part of the delivery. Wamata Solutions, LS telcom's local partner, will provide all the necessary data for the task. ■

// CHIRplus_TC

IoT Planning with CHIRplus_TC

The broadcast industry today faces many new challenges.

One of them is the Internet of Things (IoT), which is based on different network technologies, such as LoRa, Sigfox, NB-IoT. To face these new challenges in the well-known tool environment of LS telcom's planning tool CHIRplus_TC, new functionality has been ad-

ded. The new NET module provides the user with accurate planning capabilities for the dimensioning of size and performance of the respective network. The calculation results can be verified through the correlation of imported measurement data, derived from drive tests,

for example. CHIRplus_TC is known for its user-friendliness and is widely used for the efficient planning of the backbone network of mobile base stations and broadcasting stations. ■

// Malaysia

Nationwide DVB-T2 Network Rollout and Implementation for MYTV Broadcasting Sdn Bhd (MYTV) in Malaysia

LS telcom supports MYTV in network rollout, procurement, site survey and acceptance testing.

MYTV won the tender in 2014 to provide nationwide DVB-T2 services in Malaysia. LS telcom performed the frequency allocation as well as network coverage planning and helped MYTV to prepare the winning tender. The cooperation of LS telcom with MYTV continues through network rollout and network optimization. LS telcom also carries out antenna measurements via unmanned aircraft system to verify and optimize the network.

Pine Pienaar, senior transmission engineer at LS telcom, is working on-site with MYTV and lends his transmission expertise to MYTV for the DVB-T2 network rollout.

He tells us about his tasks and the challenges he meets during the project:

What are your main responsibilities in the DVB-T2 network rollout at MYTV?

Pine Pienaar: My mission covers the DVB-T2 network rollout from A to Z. Together with my team, I am in charge of ensuring the transmitter sites are prepared in accordance to our specifications, site installation, network procurement, and site surveys for 60 transmitter sites all over the country. We order all the necessary equipment and we are on-site

when the transmitter system equipment is delivered. We make sure that the transmitter, antennas, combiner, feeder cables and patch panels are correctly installed. We are responsible for the development of site acceptance tests (SAT) and site integration tests (SIT) for all transmission sites, and carry out the final test and certification with the regulator so MYTV will receive the necessary Apparatus Assignment. Above all, of course, we make sure that the network is optimized according to the tender requirements.

I am also in charge of capacity building at MYTV and give training to the staff.

What are the main challenges and difficulties met?

Pine Pienaar: The meticulous planning of the project and the time schedule is critical to the success of the timely installation. For everything to work out smoothly and on time, we had to plan in great detail. The liaison with site owners was very important to define the requirements for the site infrastructure, including electrical installations, cooling and space. We could then create the site layouts with available space and cabin requirements, an important prerequisite, before the delivery and installation of the infrastructure.

Via drone measurements, we were able to detect installation errors on the sites and could verify whether the actual transmission char-

acteristics corresponded to the planned ones.

Another challenge was the huge knowledge transfer, again carried out methodically. The capacity building consists of a well-chosen mix of classroom learning as well as hands-on practical and on-site training. Part of the capacity transfer were DVB-T2 transmission characteristics, single frequency network (SFN) optimization and bill of quantity (BoQ) control and approval for procurement. Operation and maintenance (O&M) requirements for different types of sites, such as water cooled and air cooled sites, as well as training on transmitter and other network equipment were also on the training agenda.

What is the outcome of your mission? When will the new system be operational?

Pine Pienaar: MYTV will have a highly modern first-class DVB-T2 network, broadcasting nationwide. The network is designed for three high definition (HD) channels, seven standard definition (SD) channels and five audio channels per transmitter. Together with MYTV we are proud to have realized this project from the winning of the tender through to the go-live and actual operation of the network. The MYTV team has acquired all the competencies for the continuous network operation and maintenance. I congratulate the MYTV team on this success. ■

// India

BECIL acquires CHIRplus_BC

Broadcast Engineering Consultants India Ltd. (BECIL) acquired CHIRplus_BC for analog and digital broadcast network planning.

They will also benefit from extensive training on the software. BECIL's mission is to facilitate the growth of broadcasting in India and Asia and the company will apply CHIRplus_BC in various projects across the region.

Mr. Rajiva Ranjan Prasad, Senior Advisor at BECIL

commented: "We will be using CHIRplus_BC in our daily work and it will support us in several current and future broadcasting projects. CHIRplus_BC is a well-known reference and proven software tool suite amongst broadcasters worldwide for the planning and optimization of

broadcast networks. LS telcom has also proven its capacity for innovation with its broadcast antenna measurement service via drones. We are sure that collaborating with LS telcom and sharing their know-how will be very promising for BECIL." ■

Drone based broadcast measurements really take off!

LS telcom's subsidiary Colibrex has recently carried out drone-based broadcast antenna measurements in the USA (Dallas, Texas), Sweden and Malaysia.

Measurement in Dallas confirms broadband antenna pattern for soon to be repacked station

The Dallas drone based measurements validated both the horizontal and vertical transmission patterns of a newly installed broadband antenna for a local Dallas television station as part of the local network's preparation for the upcoming repack. With the recent completion of the FCC Broadcast Incentive Auction, over nine hundred television stations across the United States are being repacked to new channel assignments.

Countrywide drone based measurements for Malaysian Digital TV Operator MYTV

The new Malaysian DVB-T2 broadcast operator MYTV is in the midst of implementing and rolling out their nationwide Digital TV network. As part of the network deployment, MYTV has to install new DVB-T2 transmitter systems all over the country. As most of the new antennas have to be mounted on existing towers, it is even more crucial to verify the transmission characteristics of these new installations. The countrywide drone measurements enabled MYTV to detect installation errors, incor-

rect antenna configurations and factory faults on the newly installed antennas. MYTV was able to take immediate corrective measures together with the system supplier.

"We are excited to be the first broadcaster in Asia to use Colibrex's drone based measurement, and the results have been encouraging. Knowing how the antennas perform in their real environment and having the opportunity to immediately engage corrective measures with the system supplier or with the owner of the masts are of great benefit to MYTV. The Colibrex solution led to savings in both costs and time. We are already preparing the measurement of additional sites as we believe we will realize the same positive impact on our budget and time schedules as with the preceding measurements," said Michael Chan, CEO of MYTV.

For their broadcast antenna measurements Teracom replaces helicopter by drone

Colibrex conducted drone based broadcast antenna measurements for Teracom, one of the Nordic region's leading radio and television operators. The antenna pattern measurements were performed on eleven transmitter

sites, including fourteen antennas. Teracom chose the drone based measurements for their cost-effectiveness, faster performance and quicker results. Teracom also appreciated the fact that the drone can measure antennas on very low masts and on building tops, in areas where the helicopter cannot fly at all.

Also read the interview with Martin Litnäs, the technical specialist for broadcast antennas at Teracom.

<http://www.colibrex.com/en/drone-measurements/projects-case-studies/#c14034>

With over eight hundred successful measurements to its credit, LS telcom (through its subsidiary Colibrex) is the global leader in drone based broadcast measurement. ■



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

200 participants from 33 countries attended the 22nd Annual Spectrum Summit to present and discuss the development of 5G, IoT and DTT.

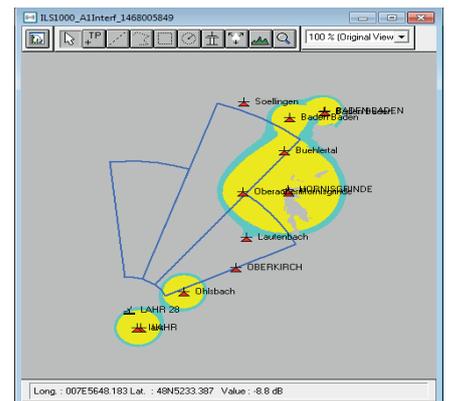
The Spectrum Summit was preceded by the annual USERgroup, which unites the organizations that use LS telcom's software. This year 27 CHIRplus_BC users from 19 organizations and 15 countries attended the CHIRplus_BC USERgroup.

"The annual CHIRplus_BC USERgroup, which is free to attend for customers using LS telcom's application and service, is an excellent opportunity to exchange tool experience with other users, and learn best practices from each other. For over two decades CHIRplus_BC has

proven to be a powerful, high-performing and robust software, having incorporated a huge amount of functionality.

During the USERgroup, the users' awareness is raised for applying the many different possibilities and functions built into CHIRplus_BC. It helps advanced users to deepen their user experience, and new users to discover the variety of functions and possibilities of the tool. Users are encouraged to express their priorities and requirements for new software capabilities and in this way influence future developments of CHIRplus_BC. LS telcom's support service explains the latest developments made in the previous year, and presents the next release version (including context sensitive help, advanced macro-functionality, new interface to SPECTRAemc, for example). It was great to be there," commented Axel Baier, Department Broadcasting Frequency Management, RTR, Austrian Regulatory Authority for Broadcasting and Telecommunications.

functionality. Presented were the improved graphical user interface with better map scrolling, the considerably enhanced macro capabilities, enhanced speed of field strength calculations using new web service technologies, aeronautical radio navigation interference calculation as well as several improvements for Region II/America planning functions. ■



CHIRplus_BC: Aeronautical area calculation results

The agenda featured the latest CHIRplus_BC

// Brazil

CHIRplus_BC for ISDB-T planning in Brazil

The digital engineering company iTVX in Brazil selected CHIRplus_BC for the Brazilian nationwide ISDB-T planning.

Marcelo Martins, CEO of iTVX, said, "We chose CHIRplus_BC as we needed a more powerful tool for the planning of the ISDB-T standard. CHIRplus_BC features extensive functionality for ISDB-T planning, automated workflows and ample computing power including multithreading - exactly what we needed for the planning of nationwide networks. We look forward to working with LS telcom in the future and to promoting their products and services in Brazil."

iTVX and LS telcom will also be exhibiting together at the SET Expo, Sao Paulo, 22nd - 24th August 2017. ■

// Malaysia

LS telcom runs workshop at ABU Digital Broadcasting Symposium

LS telcom presented at a workshop entitled "From network planning to the Living Room - How to Set up a DTT Network" organized during the ABU Digital Broadcasting Symposium in March 2017 in Kuala Lumpur.

LS telcom gave a presentation about network planning and ran a hands-on session on CHIRplus_BC. ■



Milos Pavlovic, Sales Director Broadcast, LS telcom

Spot on

Chinese SAPPRT purchases additional CHIRplus_BC license

The Chinese State Administration of Press, Publication, Radio, Film, and Television, SAPPRT, (formerly SARFT) has bought an additional CHIRplus_BC licence. Several business units of SAPPRT have been using CHIRplus_BC for many years for research & development, frequency planning and coordination. ■

ANRT Morocco renews CHIRplus_BC maintenance contract

ANRT Morocco, the telecom regulator of Morocco, confirmed its trust in LS telcom's excellence in services, by renewing the maintenance and support contract for CHIRplus_BC licenses and add-ons.

The contract was signed with local partner 3GCOM for a duration of up to three years, and includes map upgrades as well as bi-annual on-site support visits.

This contract underlines the importance of CHIRplus_BC at regulators even when a separate broadcast regulator operates in the country, as is the case in Morocco, where the Haute Autorité de la Communication Audiovisuelle (HACA) is another long-term loyal customer of LS telcom. ■

Radio coverage optimization for broadcast operator in Argentina

Antina, the national Pay TV operator in Argentina, has contracted LS telcom to provide SFN coverage optimization for up to five sites. The planning will be done to accommodate new DVB-T2 transmitter sites in Buenos Aires, which shall increase overall coverage in the region. ■

// Meet us at...

- **SET EXPO**
Sao Paulo/Brazil
22nd - 24th August 2017
- **IBC**
Amsterdam/Netherlands
15th - 19th September 2017
- **ABU Digital Broadcast Symposium**
Kuala Lumpur/Malaysia
5th - 8th March 2018
- **NAB Show**
Las Vegas/USA
7th - 12th April 2018

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