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**Tackling Russia's Loudness Rollercoaster
By Christoph Harm, International Sales Manager, Jünger Audio.**

Russian broadcasters such as VGTRK, Channel One, Russia Today Network (RT) and NTV plus are increasingly turning to dynamics expert Jünger Audio to help them alleviate irritating jumps in volume that drive viewers to distraction when they are watching TV.

Controlling audio loudness throughout the broadcast chain is Jünger Audio's speciality. The German company manufactures sophisticated audio processors that can be supplied as either stand-alone units or rackframe-based modular control systems. All of these processors incorporate the company's proprietary LEVEL MAGIC™ II adaptive control algorithm, which is compliant with all current broadcast audio loudness recommendations including ITU.1770 Standards (revisions 1, 2 and 3) as well as recommended practices ATSC A/85 (2011/2013), ARIB TR-B32, Free TV OP-59, Portaria 354 and EBU R128.

What makes LEVEL MAGIC™ II unique is its ability to simultaneously combine an AGC, a Transient Processor and a 'look ahead' True Peak Limiter for continuous unattended control of any programme material, regardless of its original source. Capable of using any kind of I/O formats, analog or digital, as well as SDI embedded and Dolby® encoded, LEVEL MAGIC™ II is available in a variety of configurations to suit different applications, including the frame-based modular C8000 audio loudness control system and Jünger Audio's new slim line family of stand-alone processors.

Jünger Audio's Russian distribution partner OKNO-TV has been instrumental in ensuring that key Russian broadcasters have access to the company's ground-breaking technology. In 2012, OKNO supplied Channel One with two frame-based LEVEL MAGIC™ C8000 systems, which are currently being used for ingest and playout in the broadcaster's automated broadcasting complex. The C8000 systems were chosen because they could simultaneously overcome three main issues – providing EBU R128

compliant loudness control and the transition from stereo to multichannel and integration into the existing playout automation.

Since 2012, Channel One has added more processors and upgraded its existing C8000 systems to the point where it now has units in all areas of its facility. These are providing Loudness Management, multi-channel Dolby® encoding including real-time metadata emulation, compliance monitoring and logging.

Dariya Rasimova, Purchasing Specialist at OKNO-TV, says: "The Ostankino/Channel One complex uses Jünger Audio equipment in all production areas, from material ingest to transmission. The complex has more than 40 Jünger Audio devices in total, providing multi-channel audio treatment and control. The reliability and functional richness of Jünger Audio modules allows for complex implementation of joint broadcasting schemes such as stereo programs and 5.1 sound."

Rasimova adds that Jünger Audio has shown itself to be a reliable partner for Channel One and for other OKNO-TV projects.

"This is an important consideration because Russian broadcasters pay as much attention to after sales support as they do to the technology they are buying," Rasimova says. "In Jünger Audio's case support is always forthcoming and we have no hesitation in recommending the company and its products."

Other Russian companies that have invested in Jünger Audio's Loudness Control systems include VGTRK, Russia's 24/7 English-language news channel RTTV HD, Russia's leading entertainment network CTC, GTRK Novosibirsk TV and tele-centre TTC Ostankino, which hires out studios and equipment to the broadcast market.

At Russian state broadcaster VGTRK (ВГТРК) 42 frames of Jünger Audio's C8000 modular solution have been installed. At RTTV HD, nine new Jünger Audio C8000 systems are integrated – all supplied by OKNO-TV. Once again, the ability to comply with international loudness recommendations and the ability to easily integrate into existing infrastructure and automation were key reasons why Jünger Audio equipment was chosen.

Alexander Kolosov, deputy director of RT's production complex, says: "Jünger Audio's LEVEL MAGIC™ algorithm provides a unique solution to the problem of loudness control and allows us to fully automate this process. We also felt that Jünger Audio's solution was able to deal with Dolby technology in a much better way than any other manufacturer's products."

OKNO has also supplied TTC Ostankino with a number of Jünger Audio processors including a T*AP Television Audio Processor, an award winning stand-alone unit that is primarily designed for audio control in TV playout and provides Loudness control, Upmix and surround sound processing for up to eight channels of audio (8x1, 4x2, or 6+2).

Andrey Syagaev, leading engineer at Telerent, a company that provides technical support at the Ostankino complex for broadcasters such as Channel One and The TV Channel, says: "For the last three years we have been using Jünger Audio's C8932 3 RU frames with C8702 1an frame controllers and different C8000 modules for varied

schematic solutions. We use it for Dolby E, D and D+ coding and decoding, automatic on-air audio-level control, Dolby metadata insertion and connection with Yamaha and Lawo sound mixers using AES and MADI interfaces.

"We also use Jünger Audio's recently introduced D*AP 8 MAP Monitoring Processor to monitor different types of audio signal (SDI and AES, PCM and Dolby® streams). This equipment is very reliable and also incredibly easy in use thanks to its well-designed web interface and Ember+ control possibilities. Another big plus for us is the support we get from Junger Audio. The company has highly qualified personnel who are always in touch with customers and always ready to help with problem solving."

Peter Pörs, Jünger Audio's CEO, says providing a high quality level of service and technology is paramount, particularly in geographic area like Russia where there are a large number of broadcasters all competing hard for market share.

"Since the break-up of the Soviet Union in 1991, there has been a proliferation in the number of television stations," Pörs explains. "Today, there are more than 500 legitimate non-governmental stations, with at least one of these broadcasting to every major city as well as many smaller centres of population."

"In a country where the battle for viewers is very competitive, many Russian broadcasters have recognized that surprise changes in audio levels are annoying for viewers and can result in viewers changing the programme. For this reason there has been increasing interest in our products, which are designed to prevent surprise level changes without having a detrimental effect on the overall sound quality."

Pörs adds that new additions and upgrades to the Jünger Audio range are helping the company stay in pole position when it comes to loudness management.

"The proliferation of distribution formats has made audio loudness management during production more important than ever," he says. "In the past it might have been sufficient just to monitor the main mix without considering all transport coding and metadata implications. But with all the simulcast formats in use and with loudness regulation in place today, the production team needs to simulate the home listening experience by real time metadata emulation."

In response to this changing environment, Jünger Audio has launched the D*AP8 MAP Monitoring Audio Processor - the only loudness processor that can act as a successor to the Dolby® DP570 tool, which was discontinued in 2013.

"The D*AP 8 MAP is proving to be of great interest to our broadcast customers, and not just in Russia, because there is still a need for a hardware based monitoring controller that combines loudness management and logging features with the ability to monitor Dolby®-E, Dolby®-D (AC-3) and Dolby® Digital plus (E-AC-3), as well as HE-AAC formats," Pörs explains.

Equally interesting to the radio broadcast community is Jünger Audio's recently introduced Voice Processor D*AP4 VAP edition, a unique unit that includes Spectral Signature™ dynamic EQ.

"This unit gives users a totally new creative tool that offers automatic and dynamic EQ control to balance spectral differences," Pörs says, "Spectral Signature™ analyzes incoming audio and compares the spectrum with individually predetermined voice "fingerprints". This allows dynamic EQ corrections to be applied, if necessary, to give a consistent sound impression."

For more information about Junger Audio's universal processing platforms, please visit www.junger-audio.com