Rohde & Schwarz and Kathrein partner to advance world's first high-power high-tower LTE Broadcast

Project partners Rohde & Schwarz and Kathrein have reached two important milestones of the 5G TODAY research project: On 4 December 2018, a Rohde & Schwarz transmitter successfully went into operation at Bayerischer Rundfunk’s (BR) Wendelstein transmitter station. In addition, Kathrein completed an innovative antenna for test operation at BR’s transmitter site in Ismaning near Munich.

Munich, December 5, 2018 — The new 5G network standard is a key technology for the future when vehicles become highly automated and devices are networked with each other in the Internet of Things. 5G also offers great potential for efficient distribution of media content. The introduction of 5G will open up a worldwide market with millions of smartphones and tablets acting as potential TV receivers able to combine live TV services, media libraries, social networks and many other media services.

LTE Broadcast, also known as FeMBMS (Further evolved Multimedia Broadcast Multicast Service), was specified in 3GPP Release 14 in June 2017. It defines new options for broadcasting to LTE-enabled mobile user equipment such as smartphones and tablets. For the first time, the upgraded standard allows high-power high-tower (HPHT) applications in downlink only mode while utilising the full signal bandwidth for multicast/broadcast applications. Moreover, 3GPP Release 14 defines an extended cyclic prefix (guard interval) and modes to enable operation without SIM cards, which is necessary for broadcast applications.

The R&S THU9evo high-power transmitter with a transmission power of 5 kW (100 kW ERP) and the specially developed Kathrein antenna are part of the LTE Broadcast test transmission. The Rohde & Schwarz FeMBMS transmission addresses broadcast applications for video and IP data in HPHT topologies with bandwidths of 5 MHz and 10 MHz. The transmitter receives the reference and configuration data via 3GPP-conform protocols from an LTE EPC (Evolved Packet Core). The research project uses an R&S BSCC that contains all necessary EPC functions. The broadcast services are provided by the BR and transferred to the R&S BSCC via an R&S AVHE100 headend.

The transmitters in Ismaning and on the Wendelstein form a Single Frequency Network (SFN), which is to enable mobile and portable reception in the greater Munich area as well as on the main traffic routes between Munich and Salzburg. Communication technology specialist Kathrein developed a special antenna for the transmission of diversity signals for the transmitter station in Ismaning. Twelve innovative UHF antenna fields were installed at a height of 200 meters. The project also included the installation of a 370-metre long, arm-
thick HF transmission cable. Another Rohde & Schwarz high-power transmitter with 7 kW output power for 100 kW ERP is to be connected to the antenna at the end of January. The test broadcasting network will then be prepared for the measurements.

Currently, a major European 5G field trial is being established in Germany as part of the Bavarian research project ‘5G TODAY’. The project is funded by the Bavarian Research Foundation. Under the leadership of the Institute for Broadcast Technology (IRT), project partners Kathrein and Rohde & Schwarz are investigating large-scale TV broadcasts in the FeMBMS mode over 5G Broadcast networks. The project is supported by Telefónica Germany and Bayerischer Rundfunk, the Bavarian state broadcaster, who is providing two HPHT sites near Munich for this groundbreaking field trial.

Press contacts:
PR agency: Scribe PR, Bob Charlton (phone: +44 20 7084 6335; email: Bob@scribe-pr.com)
Europe (headquarters): Patrizia Muehlbauer (phone: +49 89 4129 0; email: press@rohde-schwarz.com)
North America: Maryam Larki Bavi (phone: +1 818-846-3600 x1411; email: Maryam.LarkiBavi@rsa.rohde-schwarz.com)
Asia Pacific: Wen Shi Tong (phone: +65 6 307-0029; email: press.apac@rohde-schwarz.com)

Contacts for readers:
Customer Support Europe, Africa, Middle East: +49 89 4129 12345
customersupport@rohde-schwarz.com
Customer Support North America: +1 888 TEST RSA (+1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
Customer Support Latin America: +1 410 910 79 88
customersupport.la@rohde-schwarz.com
Customer Support Asia Pacific: +65 65 13 04 88
customersupport.asia@rohde-schwarz.com
Customer Support China: +86 800 810 8228 or +86 400 650 5896
customersupport.china@rohde-schwarz.com

Rohde & Schwarz
The Rohde & Schwarz technology group develops, produces and markets innovative communications, information and security products for professional users. The group’s test and measurement, broadcast and media, aerospace | defense | security, networks and cybersecurity business fields address many different industry and government-sector market segments. On June 30, 2018, Rohde & Schwarz had approximately 11,500 employees. The independent group achieved a net revenue of approximately EUR 2 billion in the 2017/2018 fiscal year (July to June). The company has its headquarters in Munich, Germany. Internationally, it has subsidiaries in more than 70 countries, with regional hubs in Asia and America.

Rohde & Schwarz Broadcast & Media
Rohde & Schwarz has been an innovator in broadcast and media for over 70 years. The Rohde & Schwarz product portfolio covers the entire signal processing chain for digital video and audio content – from ingest and playout to encoding and multiplexing, from contribution to satellite and IP networks to terrestrial transmission. It includes solutions for monitoring in the studio, as well as for
monitoring streaming and broadcast services and entire broadcast networks. The T&M expert also offers a diverse range of instruments for testing end user equipment and infrastructure components in development, production and quality assurance. Rohde & Schwarz invests in an IP and software based future built with the blend of innovation, experience and stability that the company can offer.

R&S ® is a registered trademark of Rohde & Schwarz GmbH & Co. KG. All press releases, including photos for downloading, are available on the Internet at http://www.press.rohde-schwarz.com.

About Kathrein
Kathrein is a specialist for reliable, high-quality communication technologies. The company is driving innovation and technology in today’s connected world. Its ability to provide solutions and services enables people all over the world to communicate, access information and use media, whether at home, at the office or on the road. The business covers a broad spectrum: from mobile communication, RFID and special solutions, to satellite reception and broadcast technology, to transmission and reception systems in vehicles. As a hidden champion and family-owned enterprise, Kathrein has been working on the technologies of tomorrow since 1919. The company takes pride in its dedicated employees and passion for customers and quality. Find out more about Kathrein at www.kathrein.com.