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Press release

SES Offers Panoramic Glimpse into the Future of TV with Live Virtual Reality Demo

- Live 360-degree Ultra HD broadcast from NAB exhibit floor hints at innovative roadmap offering Pay TV providers compelling virtual reality programming
- Fraunhofer HHI's VR Camera and Newtec DVB-S2X technology central to demonstration

LUXEMBOURG, 25 April 2017 – SES (Euronext Paris and Luxembourg Stock Exchange: SESG), together with Fraunhofer Heinrich Hertz Institute HHI and Newtec, will demonstrate an immersive Virtual Reality (VR) experience with a live 360-degree Ultra HD VR satellite broadcast this week from the exhibit floor of the National Association of Broadcasters Convention in Las Vegas, Nevada.

The live VR broadcast will originate from Fraunhofer HHI's OmniCam-360 camera, which will capture the sights and sounds of the SES event booth at NAB. The 10K x 2K panoramic broadcast signal will be transmitted over an SES satellite to multiple Ultra HD TV screens and VR goggles at the SES booth and other locations throughout the Las Vegas Convention Center.

The transmission itself will be optimized using Newtec's next-generation DVB-S2X modulator and demodulator, designed to drive better bandwidth efficiency and higher performance throughout the broadcast.

"Satellites offer the best, most robust distribution platform for the new era of immersive Ultra HD and Virtual Reality television experiences because they can easily manage the huge volumes of video data these services require," said Thomas Wrede, Vice President, Reception Systems for SES. "Using the innovative DVB-S2X transmission standard allows us to optimize bandwidth-efficiency and the service availability of such new services. This is an important milestone for SES and the television industry and shows that we continue to innovate and create new business opportunities for our video customers."

"The SES demonstration brings together our Fraunhofer HHI camera systems with the capacity of satellite transmission for a Virtual Reality experience as it is truly meant to be, on Ultra HD screens," said Ralf Schäfer, Fraunhofer HHI's Head of Division Video. "VR is a fascinating and promising technology offering full immersion to the user when the conditions are right."

"The future-proof and award-winning Newtec MCX7000 Multi-Carrier Satellite Gateway is ideally suited to support innovative ideas," said Hans Massart, Maret Director, Broadcast, Newtec. "The easily upgradeable nature of this DVB-S2X platform allows us to keep optimizing not only

efficiency but also the effective use of space segment. Single, multi- and channel-bonded transmission of high bitrate content, such as Ultra HD TV and Virtual Reality programming, can be supported."

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About SES

SES is the world-leading satellite operator and the first to deliver a differentiated and scalable GEO-MEO offering worldwide, with more than 50 satellites in Geostationary Earth Orbit (GEO) and 12 in Medium Earth Orbit (MEO). SES focuses on value-added, end-to-end solutions in two key business units; SES Video and SES Networks. The company provides satellite communications services to broadcasters, content and internet service providers, mobile and fixed network operators, governments and institutions. SES's portfolio includes the ASTRA satellite system, which has the largest Direct-to-Home (DTH) television reach in Europe, O3b Networks, a global managed data communications service provider, and MX1, a leading media service provider that offers a full suite of innovative digital video and media services. Further information available at: www.ses.com

About Fraunhofer HHI

Innovations for the digital society of the future are the focus of research and development work at the **Fraunhofer Heinrich Hertz Institute HHI**. In this area, Fraunhofer HHI is a world leader in the development for mobile and optical communication networks and systems as well as processing and coding of video signals. Together with international partners from research and industry, Fraunhofer HHI works in the whole spectrum of digital infrastructure – from fundamental research to the development of prototypes and solutions. www.hhi.fraunhofer.de