

## Hughes Leads the Industry in Promoting Adoption of DVB-S2X Standards for Satellite Transmission

March 27, 2019

### Company Contributes Essential Patents to New Licensing Pool, Making Standards Available Widely

GERMANTOWN, Md., March 27, 2019 /PRNewswire/ -- [Hughes Network Systems, LLC](https://www.hughes.com) (HUGHES), the global leader in broadband satellite networks and services, today announced its participation as a founding member of and major patent contributor to the DVB-S2X joint licensing patent program ("patent pool"). DVB-S2X comprises the technical standard for satellite transmission, an extension of the DVB-S2 standard, that enables higher throughputs and greater bandwidth efficiency. The new patent pool makes essential DVB-S2X technology easily accessible to innovators regardless of industry, ensuring engineers around the world can leverage the extended industry standard.



"Built into all satellite terminals (VSATs) of the Hughes JUPITER™ System, DVB-S2X covers a wide range of transmissions – from UHD television broadcasting to Internet traffic, enabling the high performance of the industry's HTS (High-Throughput) satellites," said Dr. Lin-Nan Lee, vice president, Advanced Development at Hughes. "By contributing to the patent pool we hope to encourage innovation both inside and outside the satellite industry, leveraging DVB-S2X technology to optimize transmissions as bandwidth demand worldwide continues to skyrocket."

Developed originally by the DVB Project and incorporating a number of key patents from Hughes, DVB-S2X is an extension of the DVB-S2 specification adopted by the European Telecommunications Standards Institute ("ETSI"), which offers improved performance and features for core applications, including VSATs, Direct to Home (DTH) video and DSNG (Digital Satellite News Gathering). Hughes led the effort to develop DVB-S2X, which is backward compatible to DVB-S2 and improves performance without having to replace it.

Employing DVB-S2X yields higher performance, interoperability and more efficient bandwidth utilization (bits per second per hertz) than previous standards. As a case in point, its integration into the Hughes JUPITER System for the wideband forward channel means operation of a single carrier is closer to the theoretical Shannon curve compared to DVB-S2.

For further information:

- Hughes JUPITER System – <https://www.hughes.com/technologies/broadband-satellite-systems/jupiter-system>
- The DVB-S2X Patent Pool – <http://www.sisvel.com/licensing-programs/digital-video-display-technology/dvb-S2X/license-terms>
- The DVB-S2X Standard – <https://www.dvb.org/standards/dvb-s2x>

#### About Hughes Network Systems

Hughes Network Systems, LLC (HUGHES) is the global leader in broadband satellite technology and services for home and office. Its flagship high-speed satellite Internet service is HughesNet®, the world's largest satellite network with over 1.3 million residential and business customers across North and South America. For large enterprises and governments, the company's HughesON® managed network services provide complete connectivity solutions employing an optimized mix of satellite and terrestrial technologies. The JUPITER™ System is the world's most widely deployed High-Throughput Satellite (HTS) platform, operating on more than 20 satellites by leading service providers, delivering a wide range of broadband enterprise, mobility and cellular backhaul applications. To date, Hughes has shipped more than 7 million terminals of all types to customers in over 100 countries, representing approximately 50 percent market share, and its technology is powering broadband services to aircraft around the world.

Headquartered outside Washington, D.C., in Germantown, Maryland, USA, Hughes operates sales and support offices worldwide, and is a wholly owned subsidiary of EchoStar Corporation (NASDAQ: SATS), a premier global provider of satellite operations. For additional information about Hughes, please visit [www.business.hughes.com](http://www.business.hughes.com) and follow [@HughesON](https://twitter.com/HughesON) on Twitter.

#### About EchoStar

EchoStar Corporation (NASDAQ: SATS) is a premier global provider of satellite communication solutions. Headquartered in Englewood, Colo., and conducting business around the globe, EchoStar is a pioneer in secure communications technologies through its Hughes Network Systems and EchoStar Satellite Services business segments. For more information, visit [www.echostar.com](http://www.echostar.com). Follow [@EchoStar](https://twitter.com/EchoStar) on Twitter.

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