Backgrounder

Defense, Space & Security
929 Long Bridge Drive
Arlington, VA 22202-4208
www.boeing.com

702X

Description and Purpose: Introduced in mid-2019, the 702X is a family of software defined satellites that incorporates innovations such as integrated digital processors, advanced thermal management, optimized manufacturing technologies and simplified ground resource management tools. These are all made possible by technologies with a great deal of design maturity.

The 702X incorporates proven design and technology from programs such as SES Networks' O3b mPOWER satellite, which is the medium Earth orbit variant of the 702X. The payload is flexible, configurable and has the lowest cost-per-bit offering in its market class. Applicable to any orbit, the 702X will change how operators use satellite communications to deliver value to end-users. With thousands of beams that are formed in real time and can be pointed and shaped where needed, 702X allows operators the flexibility to point power and bandwidth among users, maximizing useable capacity and eliminating wasted energy.

General Characteristics: The 702X bus is based on the Boeing heritage 702 subsystems, extensible to 25kW, with an estimated 15-year mission life. It features Boeing's most advanced digital processor to date, able to digitally form, steer and shape more than 5,000 beams and adapt that coverage in real time or over time.

Discriminators:

- Time to market – our small GEO 702X is available now (August 2019), and can be delivered in under 3 years.
- Technical maturity – our first 702X GEO customer is not the first adopter. We have been refining the design through more than 5 years of R&D and now on two flight programs, one of which is a MEO constellation that has successfully past its critical design review (CDR), which signifies that the design is ready to be built.
- Performance value – we are targeting the lowest $/bit offering for a spacecraft under 2 metric tons.
- Flexibility – thousands of beams that are formed in real time, dynamically pointed and shaped, offering the ability to pool power and bandwidth among users. Any beam can be a user or a gateway beam. This maximizes usable capacity, eliminates wasted energy and best satisfies non-uniform demand over time.

- Multi-mission capability – enables business model evolution over time, enables efficient sharing (“condosat”) models. A single 702X satellite can provide value from multiple orbital slots.

Background: The scalable, flexible 702 product line is an orbit-proven platform that cost-efficiently serves a wide range of commercial and government customers. Boeing introduced the 702 spacecraft family in 1995, and today more than two dozen are on orbit, with almost a dozen more currently in production. The 702 family product line offers flexible designs supporting payload power levels from 3 to 25 kilowatts, meeting the needs of customers seeking satellites in wide power ranges.

Boeing’s satellite systems business is located in El Segundo, Calif. The world's first geosynchronous communications satellite, Syncom, was built there by Boeing and launched in 1963. Since then, Boeing has delivered more than 300 satellites to more than 50 customers in more than 20 countries, and continues to design and build government and commercial satellites in its factory in El Segundo.

# # #

Contact:

Richard Esposito
Space and Launch
310-364-8413 (office)
310-955-0142 (mobile)
richard.esposito@boeing.com

August 2019