KURTEK
CURATED TECHNOLOGIES

SYSTEMS ENGINEERING
SIGNAL MODELING & ANALYSIS

KEY CAPABILITIES

Specification Development ◆ Space-to-Space Links ◆ Space-to-Ground Links ◆ Position, Navigation, and Timing Signals

Signal Modeling ◆ Communications Link Budget and Link Closure Analysis ◆ Modulation Performance Assessment ◆ Signal Interference Modeling ◆ Atmospheric Effect Modeling ◆ Scintillation Effect Modeling ◆ Error-Correcting Code Performance Analysis

Modeling Support ◆ Signal Modeling and Simulation Tool Development and Sustainment

The growing size and complexity of the global space ecosystem make rigorous signal modeling and analysis increasingly critical as missions strive to address asset contention, spectrum limitations, and signal interference. Kurtek's combination of rigorous systems engineering methods and domain expertise in signal performance enables us to provide comprehensive analyses to missions and support agencies in planning and developing system capability and capacity, integrating new assets and missions, and negotiating cross support with partner agencies.

Kurtek's engineers are highly experienced in developing, applying, and maintaining signal specifications and models for a variety of space-to-space and space-to ground communications and PNT signals, encompassing orbital spacecraft, landers, launch vehicles, airborne vehicles, and ground terminals. Our expertise allows us to effectively model and analyze link performance, availability, and coverage for individual spacecraft and entire satellite constellations while accounting for multiple signal characteristics such as atmospheric effects and distortions.

Working with Kurtek gives you access to a proven combination of experience and expertise from across the global space industry. Our engineers have contributed to the design of numerous flagship space and ground systems, and their comprehensive knowledge, mission experience, and specialized skillsets enable us to deliver an effective solution for your unique needs.

REPRESENTATIVE PROGRAMS

- Generated communications link budgets and performance analyses to enable mission compatibility assessments across government and commercial assets supporting NASA's Near Space Network.
- Developed signal performance specifications for spacecraft positioning and navigation services in Lunar and cis-Lunar orbits.

To learn more about our capabilities, email us at **info@kurtek.io** or call our team at **703-943-7236**.