KURTEK
CURATED TECHNOLOGIES

ADVANCING TECHNOLOGY ◆ ADVANCING HUMANITY

CASE STUDY
NASA NEAR SPACE NETWORK MISSION INTEGRATION SUPPORT

The NASA Near Space Network (NSN) is an integrated, multi-mission space and ground network that provides communications and navigation services using a global portfolio of more than 50 government and commercial direct-to-earth (DTE) and space relay (SR) antennas. The NSN supports a wide range of user mission profiles, including disposable and reusable launch vehicles, Low Earth Orbit (LEO) and Geosynchronous Earth Orbit (GEO) satellites, Lunar and cis-Lunar orbiters and landers, Lagrange point observatories, and hosted payloads. Each potential user mission is required to undergo a mission onboarding and integration process to access to NSN services and interface with NSN ground system elements.

SYSTEMS ENGINEERING

MISSION PLANNING & INTEGRATION

INTEROPERABILITY SPECIFICATIONS

VERIFICATION & VALIDATION

To support the standardization and enhancement of this onboarding and integration process across different mission profiles, Kurtek engineers developed the Mission Interface Definition Document (MIDD) and Vehicle Interface Definition Document (VIDD) artifacts, comprehensive documents intended to aggregate and centralize mission data, such as interface requirements and performance thresholds, that were previously collected in a variety of formats, such as Ground System Interface Control Documents (GSICDs), RF Interface Control Documents (RFICDs), Service Agreements (SAGRs), Project Service Level Agreements (PSLAs), and others.

KEY RESULTS

- Developed standardized MIDD and VIDD formats and processes to capture mission interface requirements and service-level agreements.
- Provided onboarding and integration support for multiple major missions, including Artemis/Orion, SPHEREx, NISAR, and PACE.

Utilizing this enhanced MIDD/VIDD model, members of the Kurtek team developed integrated artifacts for existing NSN user missions and supported the network onboarding and integration process for numerous planned missions and launch vehicles, ranging from human spaceflight to deep-space observatories and earth observation platforms.

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