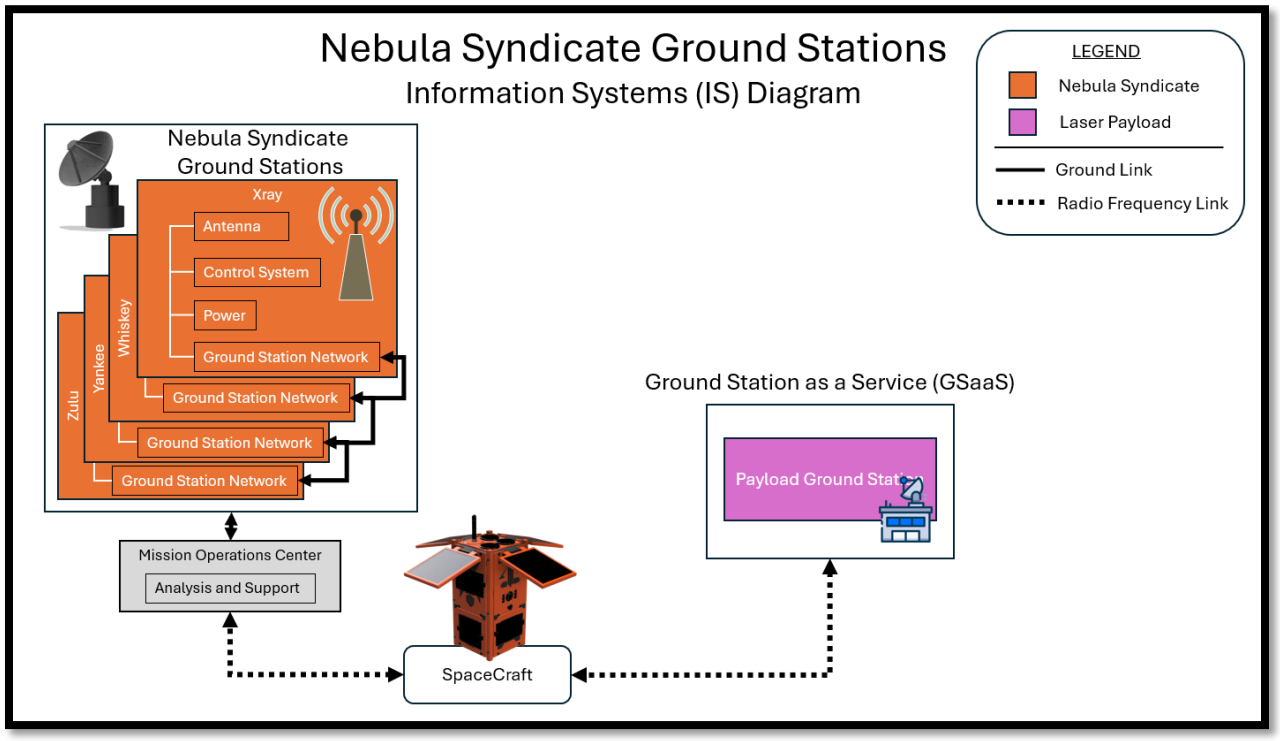
For Nebula Syndicate Eyes Only

Nebula Syndicate Space Laser Ground Station Architecture



The Nebula Syndicate Information Systems (IS) Diagram for Ground Stations presented here provides a comprehensive overview of the architecture and connectivity involved in satellite ground operations. The Nebula Syndicate owns and operates its own ground stations but outsources the commanding of its Space Laser through a Ground Station as a Service (GSaaS):

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Nebula Syndicate Ground Stations:

- Antenna: The primary physical interface for communication with spacecraft, responsible for both receiving signals from and transmitting signals to the spacecraft. Four Nebula Syndicate Ground Stations exist around the globe. The spacecraft experiences times of coverage from ground antennas and then periods between contacts.
- Control System: Manages the operations of the antenna and the overall ground station, including signal processing and command dispatch.
- Power: Essential infrastructure that supplies and manages the power requirements for the ground station systems.
- Ground Station Network: A series of interconnected systems that ensure robust communication channels within the ground station and with other networks.
- WIFI Access: Each ground station location employs a WIFI network with WPA2 encryption. This network is used to connected the IOT devices and other remote devices that help the antennas function, move, and track Space Laser Satellite as it moves across the sky.
    - The passphrase aka password for the WIFI access point is **nebula_syndicate_is_1337** and has not been updated in years and is used at each ground station location. The IT security team has recommended it be rotated soon.

Mission Operations Center (MOC):

- Located downstream of the Nebula Syndicate Ground Stations, the MOC handles the comprehensive management of the mission, including data analysis and operational support tasks. It serves as the hub for overseeing the spacecraft and payload operations, ensuring that mission objectives are met.

Ground Station as a Service (GSaaS) for the Space Laser:

- This is a service model where ground station capabilities are offered as a service to payload owners, enabling them to communicate with their space assets without the need to own and operate ground station infrastructure. (Note: Several real world GSaaS exist such as capabilities from AWS Ground Station and Microsoft Azure Orbital.)
- Space Laser: Because GSaaS often has a worldwide coverage, commands to fire the Space laser can be executed at any time.
- Security of GSaaS is often a shared responsibility between the customer and service provider.