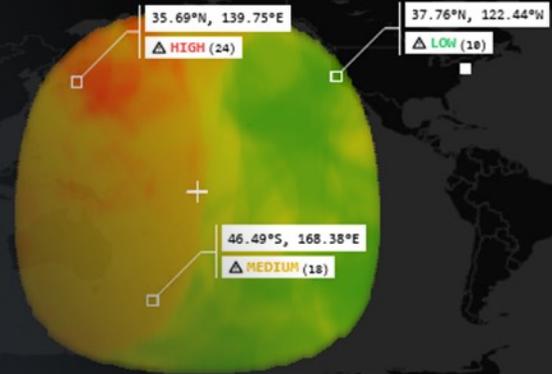


# SPECTRUM FORECASTING

Predict when and where spectrum congestion will impact your link up to 7 days in advance.

Feb 15, 2026, 8:36 AM PST

S-Band



## What It Does

We forecast band-specific satellite co-visibility density across the globe for your frequencies and translate it into a congestion risk index, allowing you to:

- Identify high-risk downlink windows
- Prioritize lower-congestion passes
- Adjust modulation or coding schemes proactively
- Re-route traffic across ground assets

## How it Works

- 1. **Propagate** all active satellites and their fields of regard out seven days
- 2. **Evaluate** frustum intersection for all satellites
- 3. **Aggregate** co-visibility density for satellites by band with overlapping frequencies only

Note: Co-visibility is only a statistical proxy, but elevated density strongly correlates with noise floor excursions in shared bands.

## Security

Vega is built with enterprise-grade security controls:

- SOC 2 Type II controls
- Encryption in transit and at rest
- Logical tenant isolation
- Role-based access control
- TOTP-based multi-factor authentication
- Comprehensive audit logging

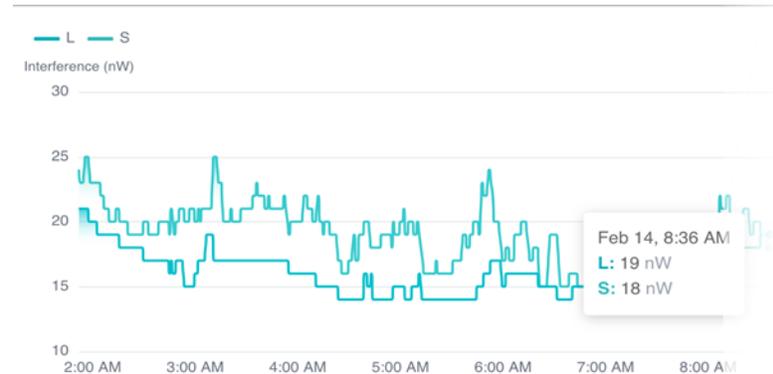
## Step 1: Simple Integration

- 1. **Select** satellites from your constellation to track through our web app or API
- 2. **Receive** daily forecasts of the congestion score per frequency band for your satellite's coverage area
- 3. **Validate** correlation against your link performance

Figure: Typical satellite pass predictions by band

NAVSTAR 84 (USA 545) → Tokyo

Feb 14, 1:52 AM – 9:03 AM (431 min)



## Step 2: Production Integration

Provide:

- 1. **Beam geometry, antenna patterns**
- 2. **EIRP, bandwidth, polarization, G/T, modulation**
- 3. **Measured Eb/N<sub>0</sub>, noise floor telemetry**

Receive:

- 1.  **$\Delta C/I$ ,  $\Delta E_b/N_0$** , Expected link margin degradation
- 2. *Telemetry feedback calibrates our models to your system—rapidly improving accuracy and even pattern-of-life characterization for other satellites.*



Contact team@vega.space or visit <https://www.vega.space> to learn more