

Optimize Signal Performance With Monics Family of Carrier Management Solutions

80% of operators and bandwidth resellers rely on Kratos for the most comprehensive carrier management solutions. These include:



Industry-leading product portfolio

Why A Monics Family...Full Spectrum of Carrier Monitoring Solutions



- Simplified architecture
- Most accurate measurements
- Single site monitoring
- Large beams to spot beams
- Advanced visualization & management
- Scalable to multi-site
- Customizable
- Immediate problem notification
- Expansive monitoring capability

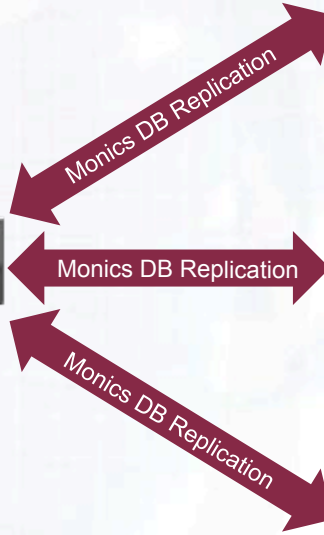


Simplified Architecture

- Increased operational efficiency
- Reduced time needed to manage and protect RF spectrum



Monics Central Database Server (CDS)



Monics LNS Site A...



Monics 200...



Monics LNS Site C, D, E, etc.

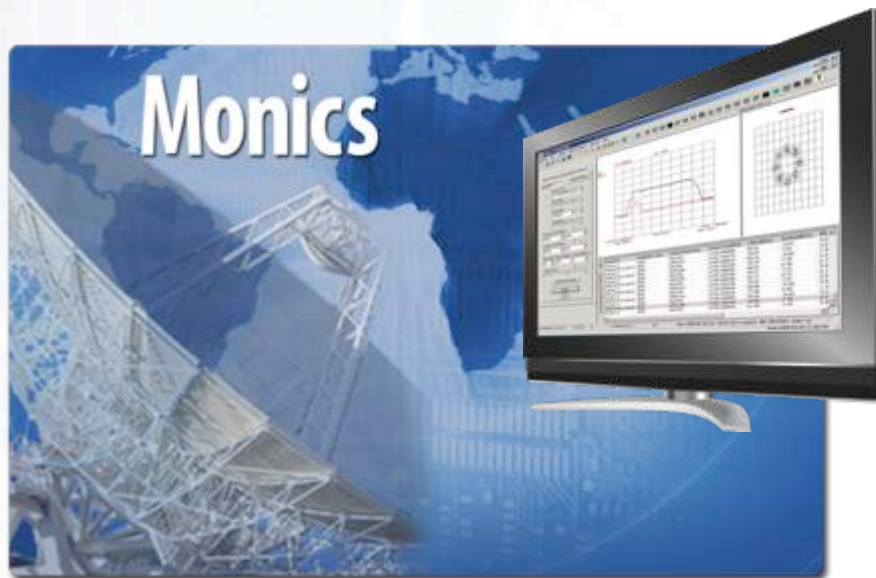


All monitoring via one central DB server



Most Accurate Performance Measurements

- Performance measurements
 - Automatic monitoring, downlink & uplink
 - Advanced interference detection
 - Bandwidth protection
 - Carrier under carrier detection
 - Uplink power control
 - Frequency drift correction
 - Earth Station Gain (ESG) calibration lowers cost
- Perpetual license – no yearly fees
- Algorithms for timely system updates
- Easily upgradeable throughout system life



Executes more measurements faster... with less hardware

Advanced Single Site RF Monitoring... with SAT-DSA



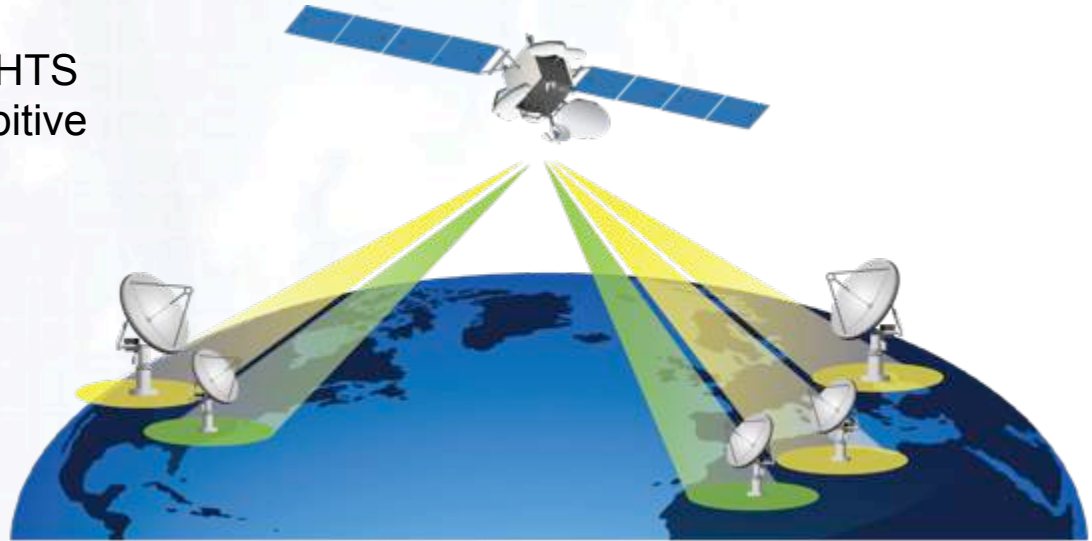
- Manual/Automatic Monitoring
- Abnormal Carrier Alarms
- Automatic RFI Detection
- Automatic Parameter Measurements
- Carrier Under Carrier Display
- FEC Reporting
- 70 MHz or L-Band Input
- Upgradable to full Monics site



HTS Impact on Carrier Management

- HTS Satellites

- Typically 50+ spot beams on an HTS
- Traditional monitoring cost prohibitive
- Beams & sensors need new visualization tools
- Numerous HTS gateways will require close proximity to antenna/RF system
- Effective, spot beam monitoring will be key to understanding customer issues

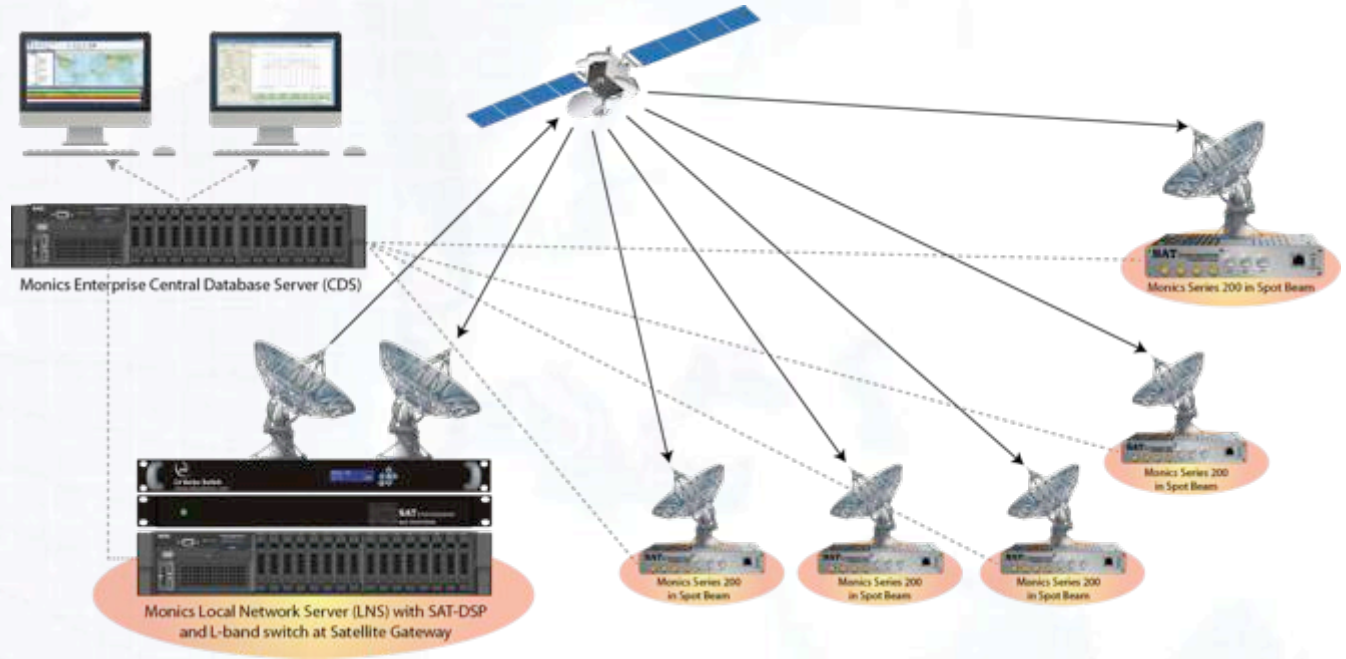


New monitoring technology and financial models required

Monics 200: Monitor Spot Beams ... Cost-Effectively

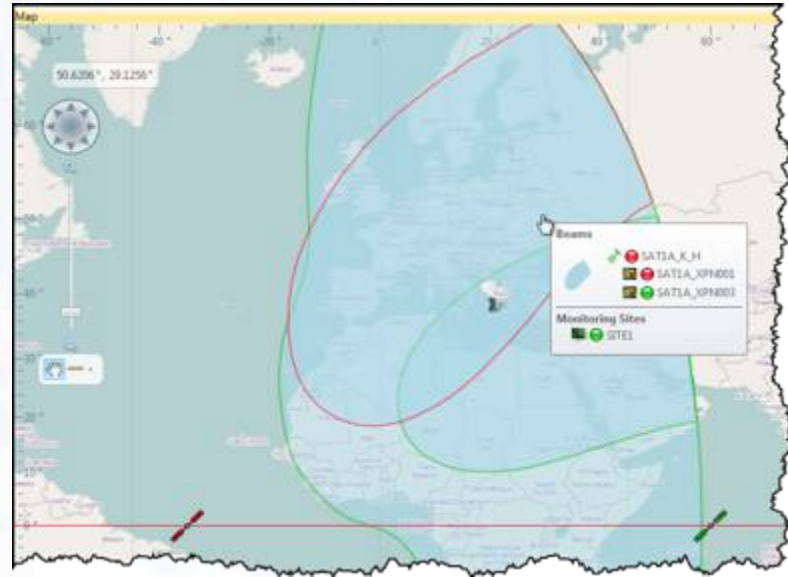


- *Monics 200*-ideal, cost effective HTS and low density spot beam monitoring
- Configured as a monitoring site in Monics
- Fully integrated into a Monics CDS
- Provides all Monics automated monitoring, alarming & trace forwarding
- Supports link outages with on device storage



Monics Enterprise Manager - Reduce Time From RF Event Recognition to Resolution

- Designed for complex fleets including HTS signal management
- Provides manager for large number of sites with single integrated GUI
- Added layer of operational efficiency delivers:
 - Map based representation of satellites, beams and LNS sites
 - Access control to Monics applications and space segment visibility
 - System status for greater situational awareness



**Mouse over the satellite to show beams;
visualize monitoring assets within beam**

User Monitoring Environments

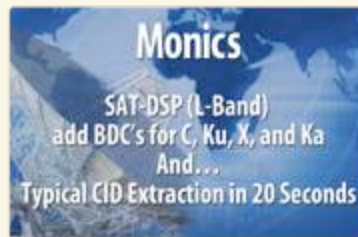
Single Site Monitoring



Low-Density Spot Beam Monitoring



Large Beam FSS Monitoring



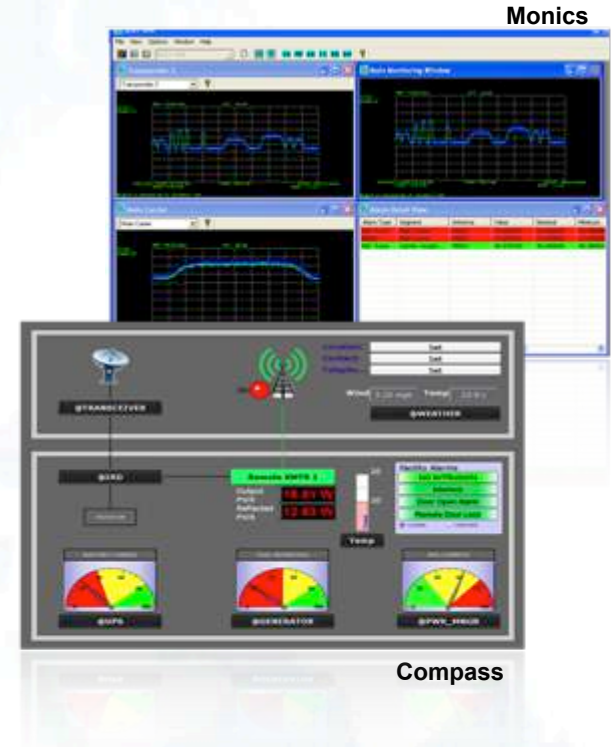
Site and Beam Visualization



Monics systems utilize a number of available measurement instruments depending on customers needs

Interface to Other Tools

- **Mature Planning Tool Interfaces:**
 - Complan Enterprise Management System, Groove Database, Foresight from Clearbox Systems
 - Monics database accepts inputs from any planning tool
 - Triggers fire on new data and updates Monics database
 - Mined Ring Buffer Measurements confirm performance
- **Performance Tool Interfaces**
 - Kratos' COMPASS, satID, NeuralStar SQM, EPOCH
 - Existing network management systems



Summary

- 80% of operators and bandwidth resellers rely on Kratos for the most comprehensive carrier management solutions
- Most accurate signal performance measurements; executes more measurements faster with less hardware
- Unparalleled RFI mitigation solution portfolio integrates carrier-under-carrier monitoring, geolocation, and mitigation into a single solution
- Having the elements required for RFI mitigation unified in such a fashion provides complete scenario analysis and greater geolocation and resolution confidence