



The Key Bridge TV Bands Solution Key Bridge Spectrum Sensing Technologies

May 25, 2010

Review of The Key Bridge TV Bands Database



Software and Hardware Products



Implementation, Collocation & Connectivity



Security Products and Implementation



Payments



Important Aspects of the Key Bridge Approach

- **Neutral**

Incorporates requirements and suggestions of over 20 organizations and companies with open-standards technology and protocols

Only Key Bridge has an open commercial policy development process and TV Bands governance solution in place

- **Transparent**

Only Key Bridge provides a complete system blueprint with published algorithms, specified products and an implementation and management plan.

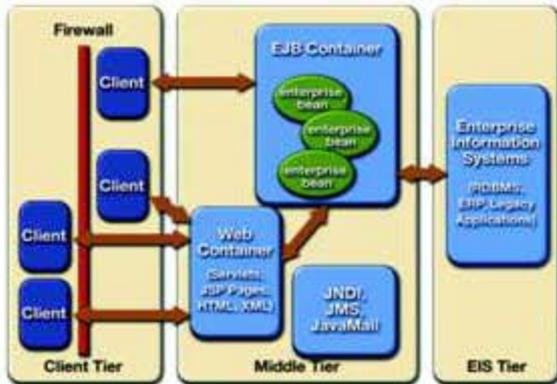
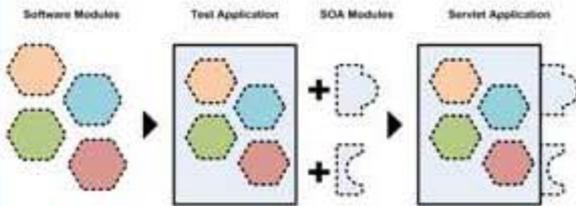
Our system has extensive transaction logging and supports third party audits to verify incumbent protection and non-discriminatory access.

- **Ready Today**

Key Bridge teamed with the industry's best for operational practice, products and technologies to deliver a commercially viable, technically sound solution, ready today

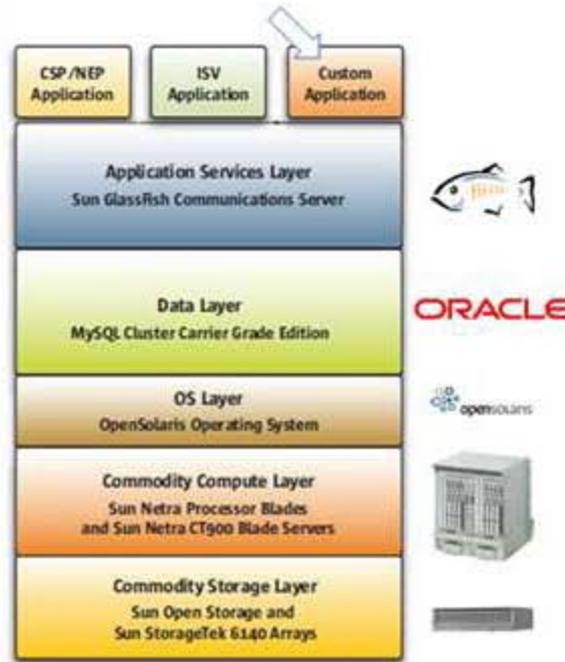
Three Tiers of the Key Bridge Architecture

Software



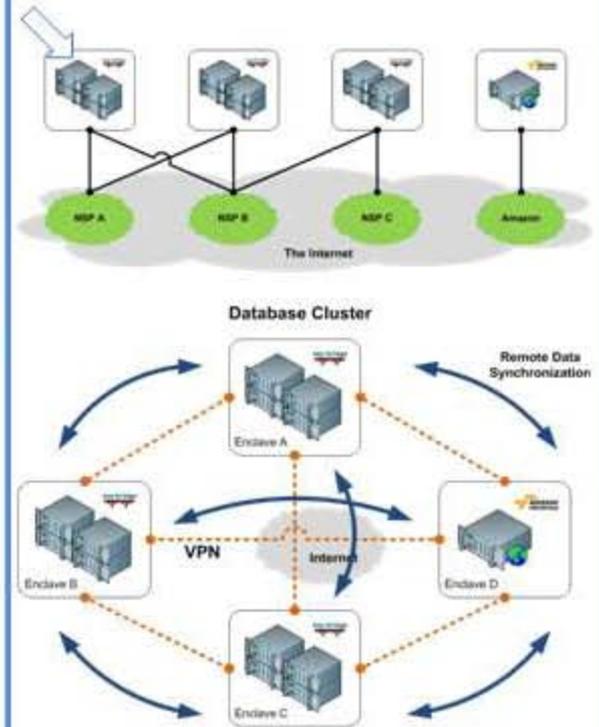
Modular software components within a standard application frameworks

Systems



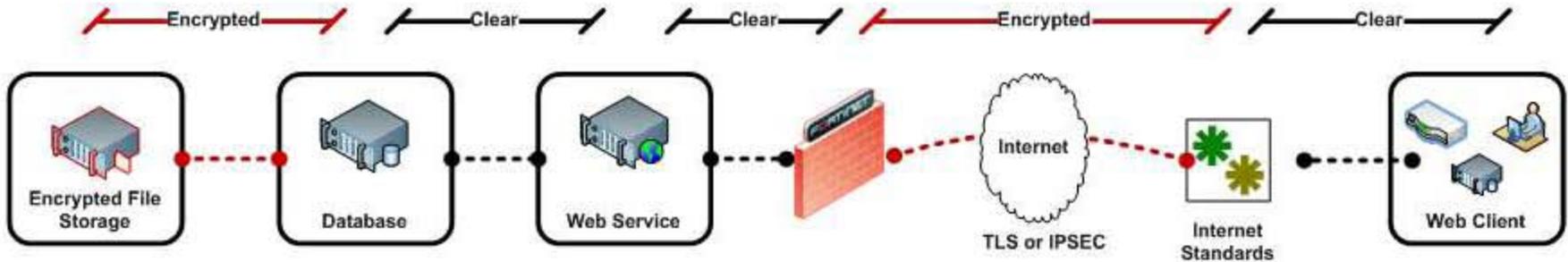
Scalable, high-availability storage, compute, OS, data and application servers

Services



Geographic and logical diversity with load-balancing, backup and fail-over

DB Interoperability & Device Certification



Interoperability with the TV Bands database is assured when devices and clients use open Internet standards

Transport Security and Authentication

Asynchronous Messaging

Message authentication, integrity and confidentiality

Data encoding and decoding

Real-time Database synchronization

Management, registration and oversight

RFC-5246 & 2716 (TLS) or
RFC 2401 (IPSEC)

JSR 914 (Java Message Service)

JSR 101 (JAX-RPC) and
JSR 196 (WS-Security)

NMEA 0183

Oracle & MySQL synchronization

HTTPS capable web browser

Summary



- The Key Bridge solution is supported by number 1 companies in their respective fields.



- Only Key Bridge provides a comprehensive, end-to-end plan for development, testing, integration, deployment, security and long-term operation of a TV bands database



- We are ready today





Summary and Current Applications

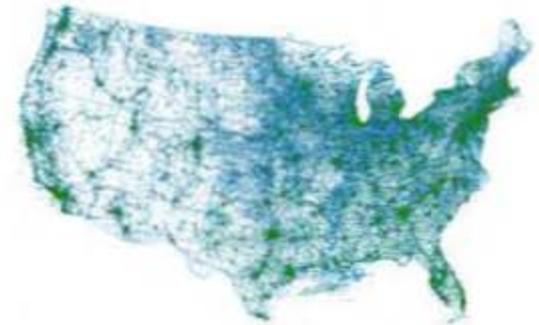
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Spectrum Inventory & Mapping

The Key Bridge spectrum inventory and mapping system for TV white space spectrum management is easily extended to other bands



Land Mobile Radio Services



Satellite Systems Analysis



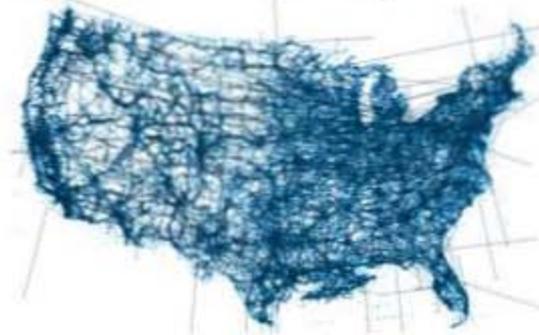
Television Broadcast Services



Maritime and Aviation

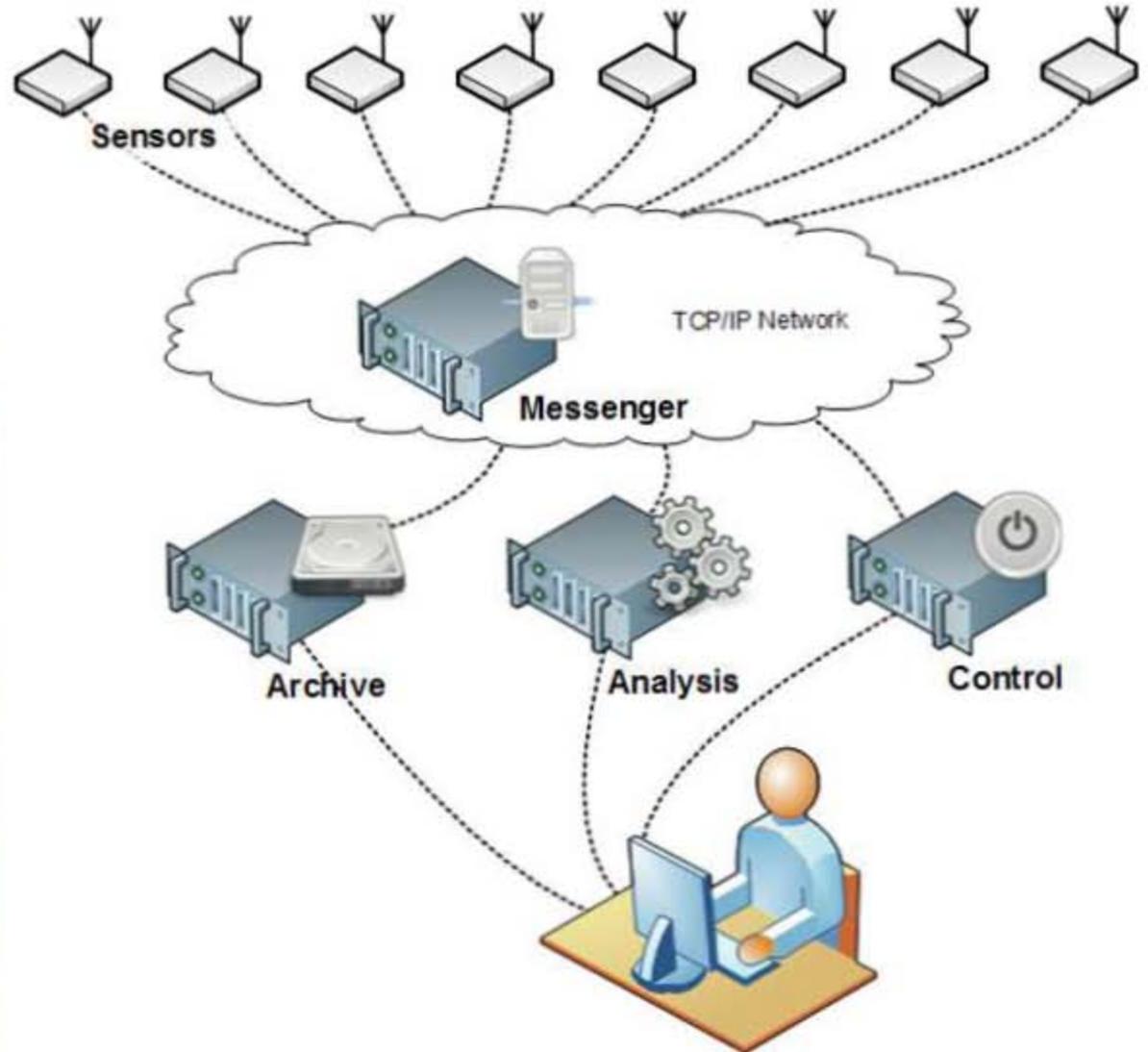
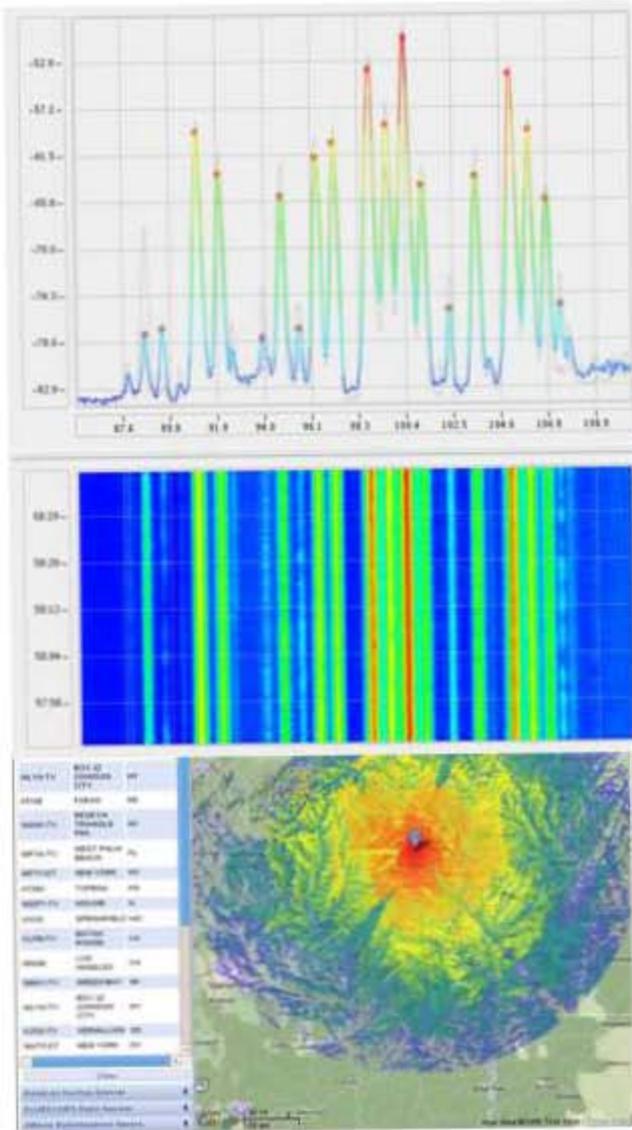


Microwave Services Analysis

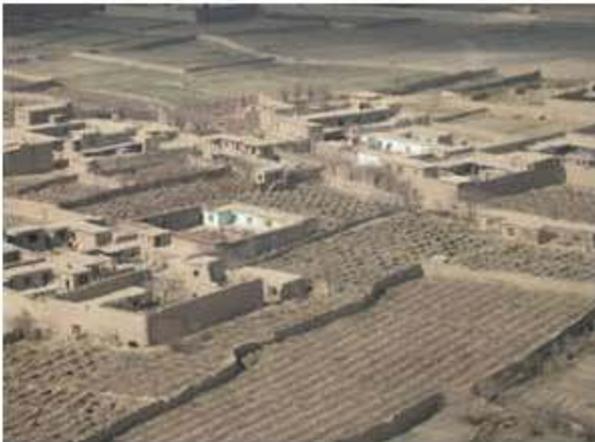


Key Bridge Wideband Spectrum Monitoring

An open and extensible networked information service



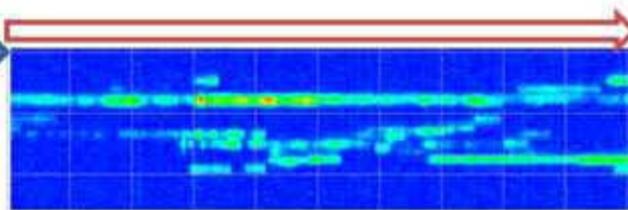
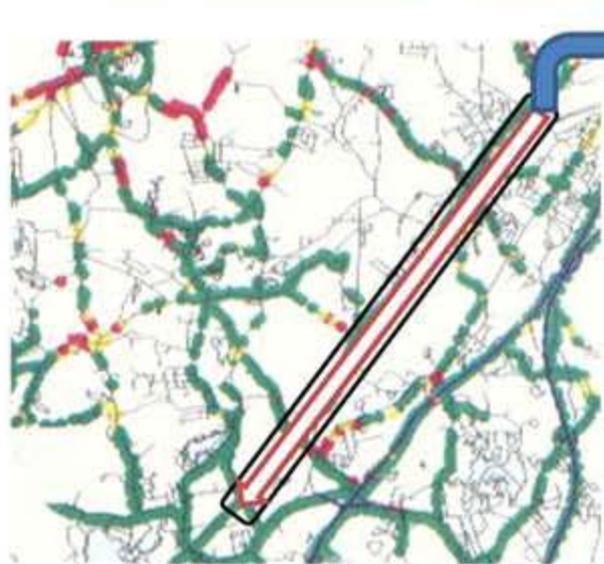
Current Applications: Mobile Monitoring



Spectrum & Transmitter Inventory



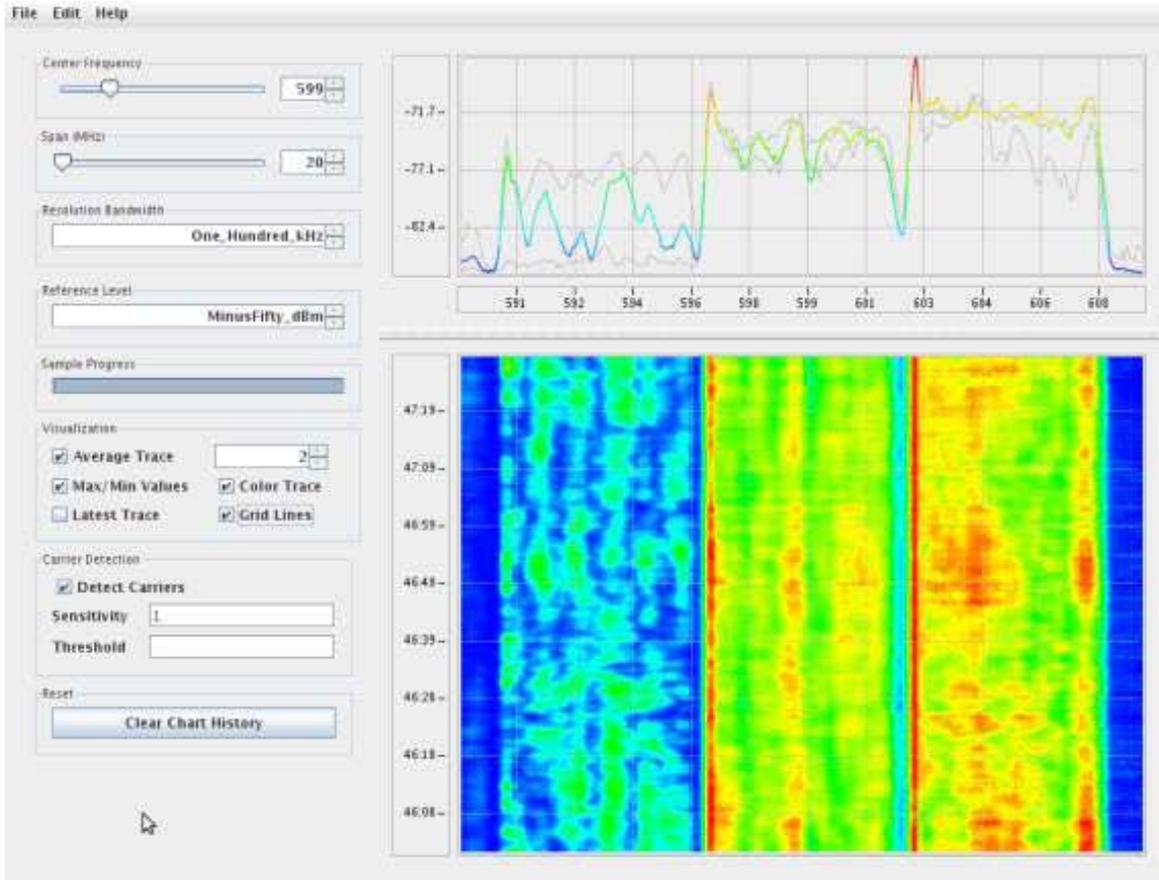
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0293080498	0394209848	1/1/2010 0:00	33 -77
0394209840	2390823098	NEW	33 -77



Spectrum Pathways

Measurements and inventory of spectrum activity and transmitters along a given route enables rapid identification of new radio signals or suspicious chatter through CHANGE DETECTION.

Demonstration:



Simple Controller
Simple Subscriber
Open Data Formats

Key Bridge Spectrum Monitoring

An Open Spectrum Sensing Solution



Sensor



Messenger



Archive, Analytics, Control



User Interface



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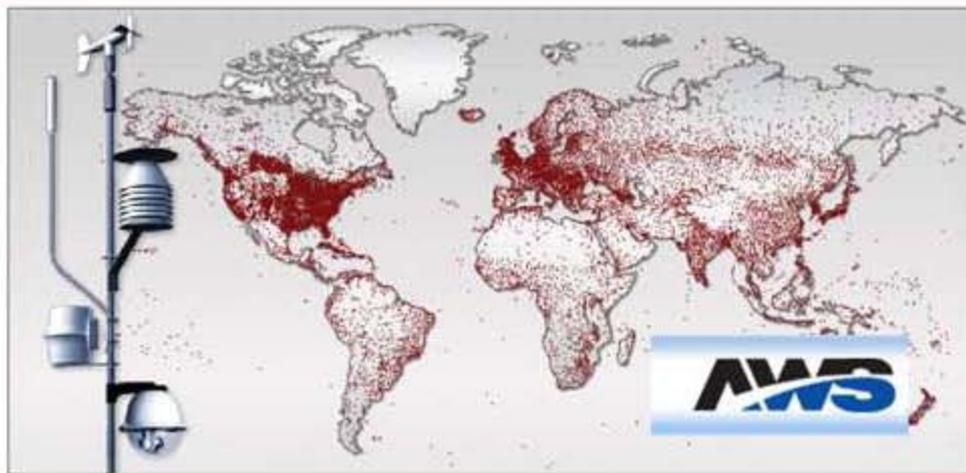


ORACLE

FORTINET

On the AWS Network

Ready for Deployment



Thank you!



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