

KVH® INDUSTRIES  
**MINI-VSAT**  
BROADBAND™

The most complete, highest-value maritime satellite communications solution available



# mini-VSAT Broadband 2.0 from KVH

## Introducing the next generation of maritime connectivity

### Addressing the challenges of operating a profitable maritime business

Business at sea has always been challenging, and never more so than today. Operating costs continue to escalate, and remain difficult to predict or control. Attracting and retaining the best officers and crew are essential to profitability, regulatory compliance, and risk mitigation. And, intertwined throughout are the myriad of constantly changing regulations regarding personnel, fuel efficiency, pollution, and security.

Having the right partner and the right solution can help address all of these business and technology challenges. KVH prides itself on its track record of innovation and market leadership in satellite communications.

#### **Our mini-VSAT Broadband solution encompasses all of the elements you need to succeed:**

- A full suite of rugged and reliable hardware options
- A broad range of affordable airtime plans that deliver high-speed global connectivity
- Comprehensive network management tools to put you in control of your mini-VSAT Broadband service
- Compelling and valuable content for operations and entertainment
- A unique content delivery system that makes receiving vast amounts of information cost effective
- An array of flexible services and support options that will enhance and protect your investment for years to come.

mini-VSAT Broadband – the only end-to-end satellite communications solution for your complex operational requirements



Add it all up and you will see that mini-VSAT Broadband from KVH delivers the tools you require for:

- Operational optimization
- Improved crew welfare and morale
- A greater ability to recruit and retain the most capable mariners
- Enhanced security, reduced risk, and the peace of mind that comes from knowing there's a fully-integrated, global solution at work for you

# The Power of One: A complete solution, from a single dedicated partner

Your job and your business are complicated enough

Evaluating, selecting, negotiating with, and managing multiple parties for a complete satellite communications solution is one more complication you simply don't need. Enter KVH.

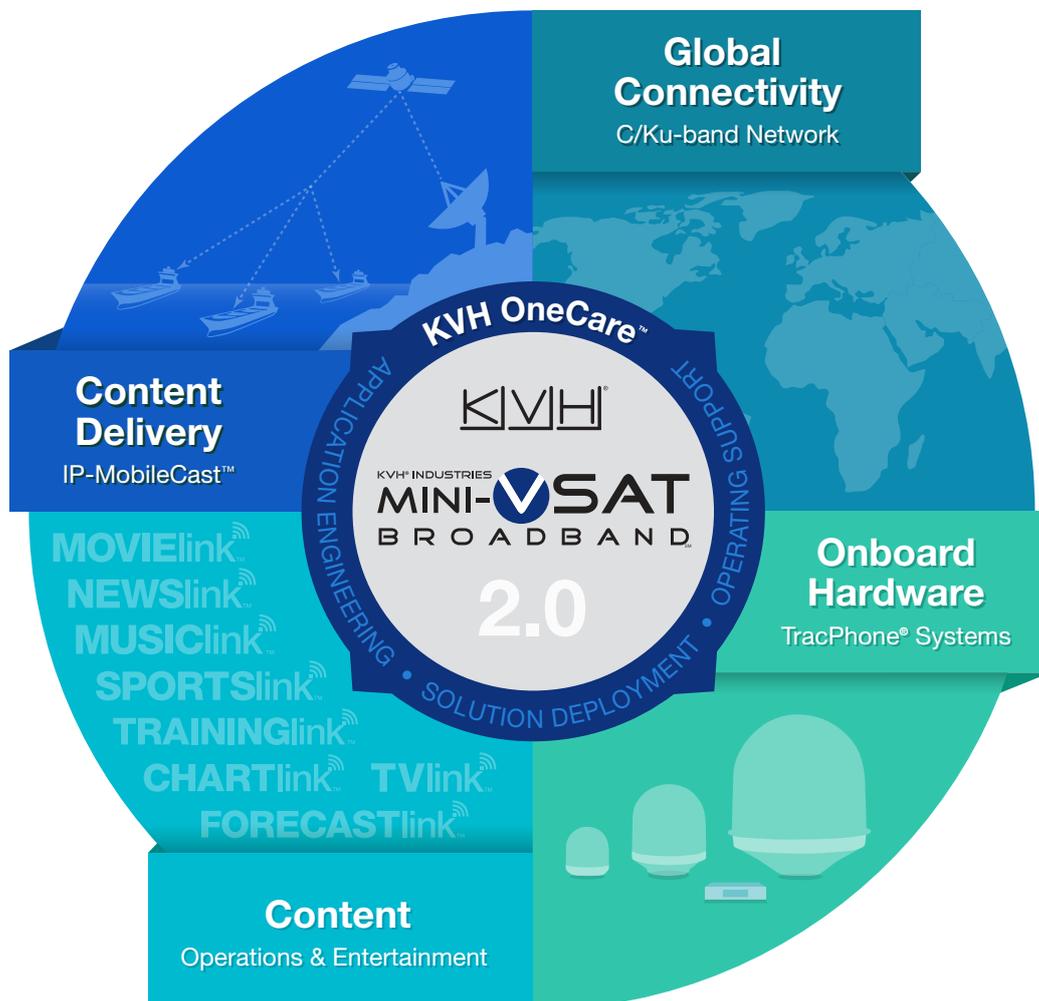
At KVH we deliver on **the Power of One**: our ability to provide you with a single-partner solution that covers hardware, connectivity, content, and content delivery, all backed by a comprehensive and flexible set of global support services.

Enjoy a seamless experience and eliminate the difficulties of dealing with multiple vendors and piecing together a solution on your own.

A single global partner, a complete solution, the highest data speeds at every price point, a single point of contact – they all add up to a value-packed way to address your business challenges...that's mini-VSAT Broadband from KVH, and that's **the Power of One**.

“By choosing KVH, we are gaining an affordable, comprehensive solution that brings together proven hardware, a global network, and fully integrated network management and crew welfare solutions that will support our needs for years to come.”

– Rob Frenks, Group IT Manager, Vroom B.V.





## CONNECTIVITY

# mini-VSAT Broadband – fast, secure, global connectivity delivered through industry-changing airtime rate plans

Launched in late 2007, the KVH mini-VSAT Broadband network has quickly grown to become the maritime industry's No. 1 VSAT service.<sup>1</sup> We leverage advanced technology designed specifically for mobile applications to unlock the power of a network of commercial satellites that cover 95% of the Earth's surface. KVH built the service from the ground up to provide the fastest and most comprehensive global maritime broadband connectivity available.

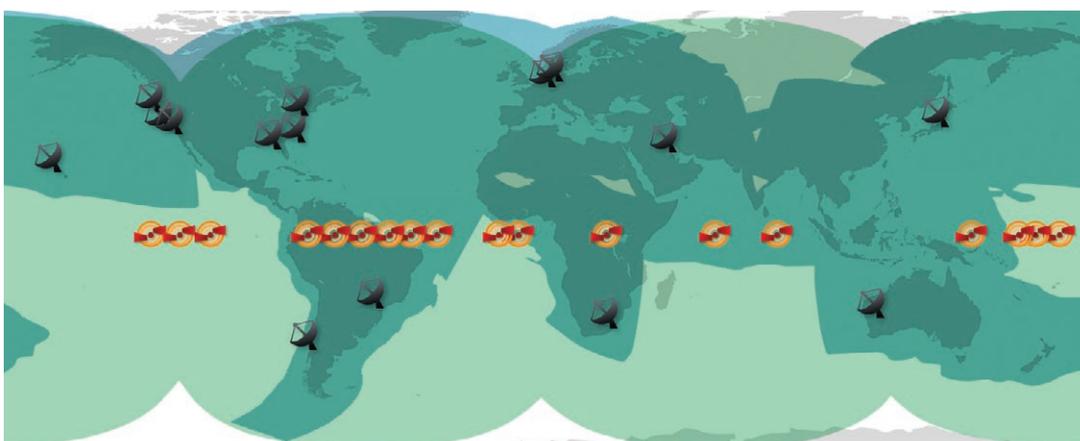
With KVH mini-VSAT Broadband, you'll find versatile airtime options that fit your needs and usage patterns, for whatever size or type of commercial maritime operation you manage.

Choose between our innovative enterprise-grade **Open Plans** with "Business Class" prioritized service that deliver the fastest speeds on the network at every price point – speeds up to 15 times faster at lower prices than before, our **Metered Plans** with low monthly commitments, or our **Fixed Plans** offering the certainty of a fixed monthly bill. No matter what size vessel you have or what your application mix, KVH can tailor the best airtime solution for you.

Plus, affordable Voice over IP (VoIP) service that is always prioritized on the network to ensure crystal-clear calls are delivered with every airtime package.

## Everything you need to stay connected

- Peace of mind – secure communications for even the most sensitive data
- The best value – faster speeds at lower cost with no "bill shock"
- The ultimate flexibility in rate plan and coverage selection
- Usage transparency and no hidden service slow-downs
- Investment protection and a smooth path to the future



<sup>1</sup>KVH is the world's No.1 maritime VSAT supplier as measured by vessels equipped with mini-VSAT Broadband service, according to Comsys, March 2015 and Euroconsult, March 2014.

## Keeping data secure...

KVH uses a global private multiprotocol label switching (MPLS) network connecting all of the teleports in the mini-VSAT Broadband network, so your data can travel between ship and shore without ever going through the public Internet. The MPLS network aggregates all satellite traffic and provides Internet egress at our “MegaPOPs” (point-of-presence access points) located in North America, Europe, and Asia. State-of-the-art firewalls and redundant high-speed Internet connections ensure security and reliability of all customer traffic. In addition, KVH’s new Global Static IP option allows one public IP to be used to access a vessel securely from the Internet, regardless of its location.

“Our main goal was to lower our communications and IT support costs. We are quite pleased with the mini-VSAT Broadband systems – they are just as stable and automatic as KVH advertises, especially when compared to other VSAT services. In addition to performance and cost savings, this solution offers better support for our IT operations.”

– Bo Olausson, IT Manager,  
Wisby Tankers AB/Wisby Shipmanagement AB



*The KVH mini-VSAT Broadband service is delivered by more than 20 Ku-band transponders and 3 global C-band transponders on the world’s most advanced communications satellites. In most areas, redundant coverage from up to 4 different satellites at 2 different frequencies is provided to minimize downtime due to local vessel obstruction or weather conditions.*



*15 secure teleports around the world are all linked via our global MPLS network, providing fleet customers the opportunity to communicate with their vessels over a single secure, private link from their enterprise network.*

## ...now and in the future

KVH has always been on the forefront of technology. Our network uses the most advanced, highest-speed satellites available. We combine the best features of each satellite technology and each frequency band to create a seamless high-speed network for you. As new HTS and LEO satellites come on line, KVH will continue to deliver the fastest speeds with the greatest coverage. This ensures you will always have a state-of-the-art IT solution onboard that keeps you one step ahead of your competitors.





## HARDWARE

# TracPhone VIP-series – a full range of advanced SATCOM antenna systems designed and optimized for the mini-VSAT Broadband service

## A system for every type of vessel...

Flexible hardware options meet the needs of your vessel sizes and applications. Fully stabilized, reliable, and tested to military quality standards, all VIP-series systems offer a user-friendly browser-based system interface and an iOS app for easy system status, updates, system support, and more.

- **TracPhone V3IP:** The world's smallest maritime VSAT, with faster data speeds and lower airtime costs than competing systems its size. *37 cm antenna; Ku-band service*
- **TracPhone V7IP:** Fully integrated, enterprise-grade solution for broadband connectivity and onboard network management. *60 cm antenna; Ku-band service*
- **TracPhone V11IP:** Dual-mode C/Ku-band antenna for the ultimate in global VSAT connectivity – a complete enterprise solution. *1.1 meter antenna; C/Ku-band service*



## ...with an airtime plan to match

The mini-VSAT Broadband service provides versatile airtime options that enable you to plan, manage, and control your satellite communications expenditures. Low-cost, crystal-clear VoIP calls and new tools to track consumption and allocate bandwidth on the vessel come standard with every airtime package, while more advanced built-in data management tools to cache content, set up roaming email, filter protocols, and much more, are also available.

- **Open (OP) Plans:** Enterprise-grade plans offering the highest speeds on the network at every price point, with unrestricted access to all applications and protocols, plus prioritization on the network with “Business Class Service.” Large monthly data allowances with extremely affordable rates both in and “over” plan. Phone service rates as low as \$0.05/minute. *Available with TracPhone V7IP & V11IP.*
- **Metered (M) Plans:** Flexible usage-based plans starting as low as \$49 per month offering the highest speeds on the network and unrestricted access to all applications and protocols. Simple, one per-minute price worldwide for phone service. *Available with TracPhone V3IP, V7IP & V11IP.*
- **Fixed (FX) Plans:** Speed-based plans for those with traditional data transmission needs and requiring the certainty of a fixed monthly charge. Features traditional fair use policies, limits on access to data-intensive applications and protocols, and a choice of the method used for bandwidth management control. Phone service rates as low as \$0.05/minute. *Available with TracPhone V7IP & V11IP.*

# Integrated CommBox Modem – fully integrated system control and network management in one box

The powerful **Integrated CommBox Modem (ICM)** is the streamlined all-in-one belowdecks unit at the heart of every TracPhone VIP system. It features a browser-based user interface and a convenient iPhone® app for system status, updates, and support. Replacing a full rack of components required for competitors' systems, the 2U-high ICM contains:

- IP-enabled antenna control unit
- CommBox Network Manager
- ArcLight® spread spectrum modem
- Voice over IP (VoIP) adapter
- Built-in Wi-Fi and Ethernet switch

It also delivers powerful CommBox network management software options and serves as the onboard gateway to receive, cache, and distribute the exciting content offered through KVH's IP-MobileCast content delivery service. Further, over-the-air software upgrades provide new features to continuously improve the quality of your service.

Our simple one-box solution replaces an entire rack of equipment!



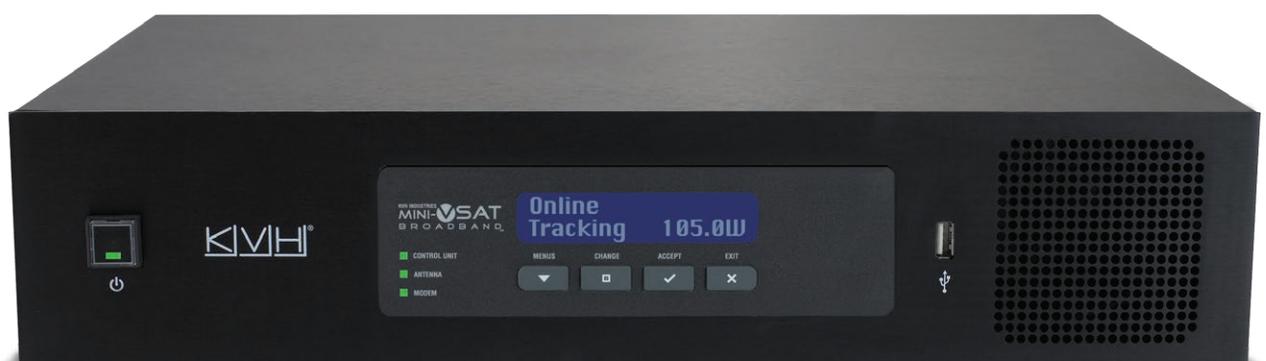
**Competitor's solution**



**KVH's solution**

*KVH's ICM offers enhanced reliability by eliminating error-prone and unreliable components and cables and making installation easy.*

## A smarter built-in solution designed to manage your network now and in the future



# An array of options for customizing your onboard solution

## myKVH™ – an easy-to-use portal to configure your network, monitor your vessels, and manage onboard data usage

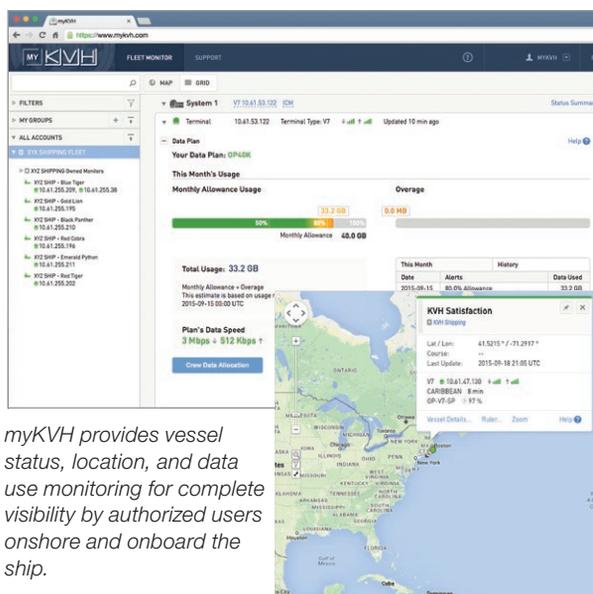
As the sophistication of maritime broadband communications grows, you need a simple way to configure your network, monitor your vessel(s), get a vessel's usage status, and allocate usage to individual users and/or to certain tasks onboard. **myKVH**, a web portal available to all mini-VSAT Broadband customers, offers a single, secure site with the tools to manage these important functions.

myKVH is also a key component in the management of KVH's new, transparent, usage-based Open and Metered plans. It allows you to actively manage your onboard network to ensure you achieve your goals of providing high-speed bandwidth while controlling costs and avoiding "bill shock." With the myKVH web portal, you now have a tool to proactively monitor bandwidth usage onboard using email and SMS text alerts, and the ability to allocate bandwidth to individuals, so that one runaway user can no longer compromise an entire vessel's connectivity.

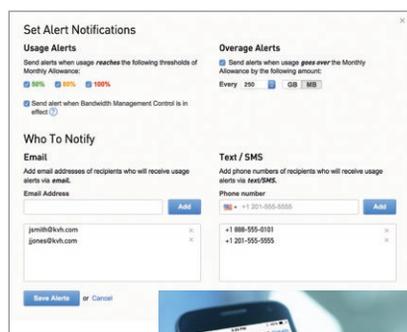
Secure, fleet-wide monitoring with map and grid displays is another benefit of the myKVH tool for onshore staff. The fleet-wide view shows IT managers and ship superintendents at a glance where their vessels are and the status of their mini-VSAT Broadband systems. It also enables them to view support cases across the entire fleet, maximizing the value of their KVH investment.

In short, myKVH helps you harness the power of the mini-VSAT Broadband solution simply and intuitively, saving time and energy.

In the maritime industry today, bandwidth management is critical for operational efficiency.



myKVH provides vessel status, location, and data use monitoring for complete visibility by authorized users onshore and onboard the ship.



Set usage alerts in myKVH and receive SMS text messages or emails when thresholds are reached.

# Turnkey options for Internet Café and Crew Calling – attract and retain the most capable officers and crew

Communications at sea is integral to attracting and retaining the most talented officers and crew. Young mariners in particular are “digital natives” and consider connections to their families and friends essential while at sea, and will weigh the options offered when choosing between you and your competitors.

With KVH, you can differentiate your company from your competition by offering an unmatched collection of onboard digital services. Choose to simply allocate a portion of the ship’s bandwidth to each user via the myKVH portal, or offer them KVH’s new **CREWlink™ Service**, with physical or virtual prepaid cards that uses an isolated crew network separate from operations. Coupled with KVH IP-MobileCast’s entertainment and training options, there is no better solution for keeping everyone onboard connected and satisfied.

**CREWlink Service is a prepaid turnkey communications solution for crew calling and Internet café.**



# Advanced options for network management – subscribe to a **CommBox™ Service Bundle**

A key component of the TracPhone VIP-series Integrated CommBox Modem (ICM) is the built-in **CommBox Network Manager** – the powerful network management tool used by thousands of ships worldwide.

Choose between CommBox Service’s available software bundles:

The **Standard Bundle** provides least cost routing and connection-specific firewall rules, as well as web caching and compression.

With the **Enterprise Bundle**, CommBox controls data on the vessel and landside prior to transmission over the satellite network, thereby allowing you to fully manage the data being sent to and from your vessels. It makes it easy to set up the most advanced crew usage allocations, to automatically enforce company rules about time spent online, to “whitelist/blacklist” websites and protocols, and to implement other security features, café services, roaming email, and unique firewalled networks for operations and crew.

Work with KVH’s Application Engineering Team to design the best solution for your business.

KVH CommBox Service Software Bundles	Standard Bundle	Enterprise Bundle
<b>QuickBasic</b> Least cost routing Bandwidth management Onboard firewall Firewalled networks	✓	✓
<b>QuickWeb</b> Web caching Web image compression Ad removal URL and content filtering	✓	✓
<b>QuickFile</b> Automated file transfers Differential synchronization		✓
<b>QuickMail</b> Mail server (POP3/SMTP/IMAP) Webmail client Anti-spam & anti-virus filters		✓
<b>QuickCrew</b> Roaming crew accounts Prepaid Internet & email services		✓

# A comprehensive global support program for every mile of the journey

## Introducing KVH OneCare™ – protecting your VSAT investment, minimizing lifecycle cost, and maximizing availability

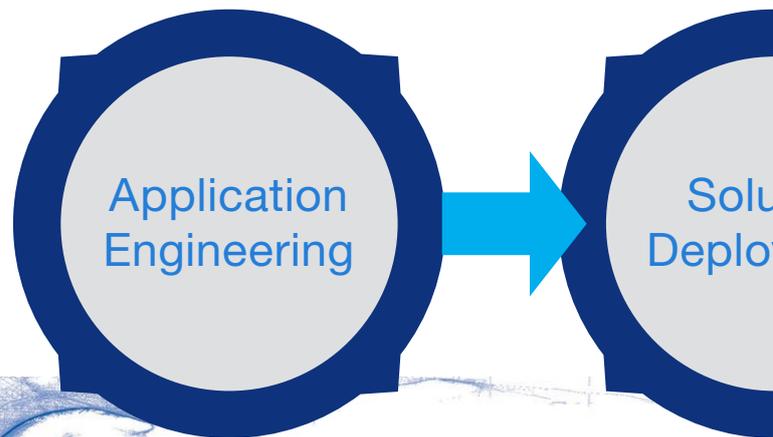
Broadband connectivity at sea represents a vital investment in operational optimization, competitive differentiation, and your ability to recruit and retain the most capable seafarers. KVH OneCare provides the industry's most comprehensive array of service offerings, all designed to leverage your investment in our satellite network technology to its fullest.

KVH OneCare spans the entire lifecycle of your mini-VSAT Broadband solution, from design and selection of the best possible solution to the smooth implementation of that solution, and continuing through post-deployment services and support to maximize long-term performance.

### Application Engineering

At KVH we design and manufacture our systems to rigorous standards of quality and performance for a wide variety of applications. Our Application Engineering services ensure that our proposed total solution will meet your needs.

As part of our proposal, before we make the sale, our application engineers will work with your team to understand your business and technical requirements, to catalog any existing infrastructure and applications, and to anticipate your plans for the future. The resulting design represents a fully integrated solution customized to your needs, now and as you grow.



## Solution Deployment

Successful implementation and launch depends on proper equipment installation, service commissioning, system-level functional testing, and initial user training.

During Solution Deployment, we'll coordinate land-side and on-vessel equipment installation, all timed to what's most convenient to you – during the build, an annual maintenance period, or on a port visit – to minimize your downtime and maximize your operational capabilities.

Your KVH application engineer will work with the highly trained members of our global Certified Support Network (CSN) to deliver the system that meets your needs, is fully functional, and is ready for the next voyage.



## Operating Support

Maintaining the long-term performance of your mini-VSAT Broadband investment is where KVH OneCare Operating Support comes into play.

We offer three sets of Operating Support services designed to maximize availability, minimize total cost of ownership, and provide peace of mind:

**Technical Assistance** – choose from three levels of Technical Assistance, each tailored to particular equipment configurations and geographic coverage needs. This ensures that you have the optimum level of technical coverage for your chosen solution.

**Preventative Maintenance Checks** – any sophisticated technology that's exposed to the harsh environment of the sea can benefit from periodic preventative maintenance checks. This optional service can be performed at a time and place best suited to your needs, to maximize uptime and identify possible failure modes before they impact any critical operations.

**Extended Warranty** – our standard mini-VSAT Broadband warranty of two years' parts and labor is among the best in the industry. For additional peace of mind and protection, we offer optional Extended Warranty coverage, allowing you to protect your KVH investment for a total of up to five years from initial activation.



We at KVH are with you for the long haul, for every mile of our journey together. We're here to make sure we maximize the value of your mini-VSAT Broadband investment with KVH OneCare.



## CONTENT

# Your bottom line will benefit from IP-MobileCast Operations Content

IP-MobileCast brings new operational efficiency to your fleet. We're teaming up with maritime industry leaders to multicast operations data to your vessels using the same technology as for entertainment content.

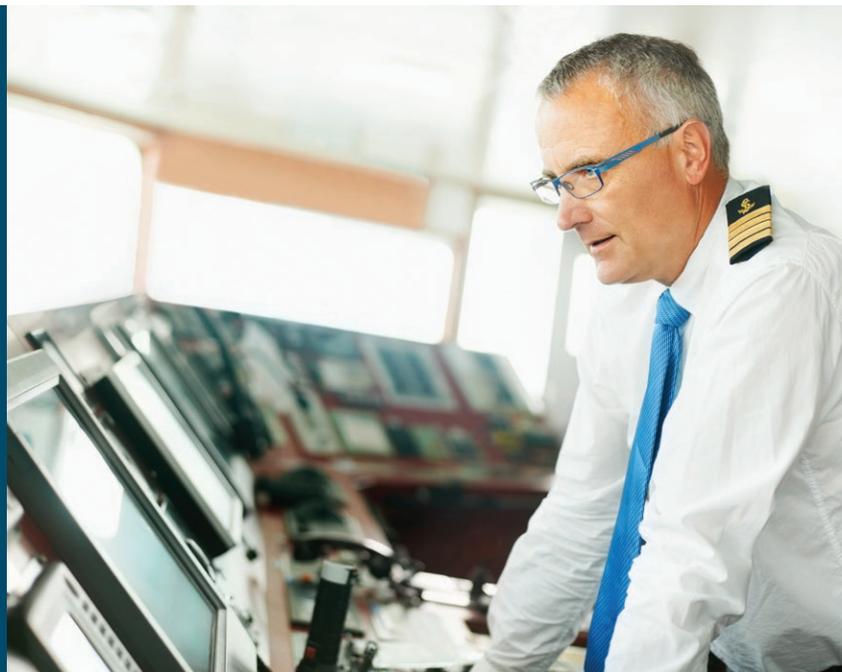
Under the IP-MobileCast Operations business model, our partners provide their specialized applications and expertise directly to you, while we provide a far better data delivery solution than the existing alternatives of email attachments, DVD shipments, or unicast transmissions. IP-MobileCast delivers data for a low, fixed monthly fee, and that data is automatically ingested by our partners' applications for immediate use on the bridge, with little or no need for officer intervention.



Your business is in constant motion – your vessels need to operate as economically as possible, on time, and in compliance with applicable regulations. Multicasting allows KVH's IP-MobileCast service to deliver gigabytes of operations data to ships at very low cost. Content from the maritime industry leaders in electronic charts, training programs, and weather data is delivered through the **CHARTlink**, **TRAININGlink**, and **FORECASTlink** services.

*"I would like to thank you for the KVH system we now have onboard, especially the new Media Server and IP-MobileCast service. Everyone onboard is enjoying the possibilities. For me it is a miracle, and I never expected this was technically possible. I'd like to thank you and the company for making this possible for us."*

Gert Reitsema  
Master, Iver Exact.  
Vroon



# Your officers and crew will love IP-MobileCast **Entertainment Content**



IP-MobileCast entertainment services include **MOVIElink**, **TVlink**, **SPORTSlink**, **NEWSlink**, and **MUSIClink**, featuring daily or monthly refreshed content in over 14 languages that is broadcast to your vessel and stored on your TracPhone system's ICM or the KVH Media Server. Your crew can access the content on a communal TV onboard or individually on their favorite personal device via an Ethernet connection or Wi-Fi.

## KVH Media Server

You can watch much of the IP-MobileCast content with the ICM that comes with every TracPhone VIP antenna. But the Media Server experience is even better. It runs several processes that address the challenge of delivering entertainment at sea.

**Digital Rights Management (DRM)** safeguards movies and TV from piracy to the satisfaction of the major studios. DRM is hosted directly on the onboard Media Server to eliminate the delay of a trip to the cloud every time you view something different.

The Media Server works with the **IP-MobileCast app** to display programming on a TV schedule grid for a true "surfing" experience. Click on any program, catch up with what you missed, or swipe from one channel to the next.



IP-MobileCast Services	KVH Media Server
<b>SPORTSlink</b> <b>NEWSlink TV</b> <b>NEWSlink PRINT</b> <b>CHARTlink</b> <b>FORECASTlink</b>	not required
<b>MOVIElink</b> <b>TVlink</b> <b>MUSIClink</b> <b>TRAININGlink</b>	required



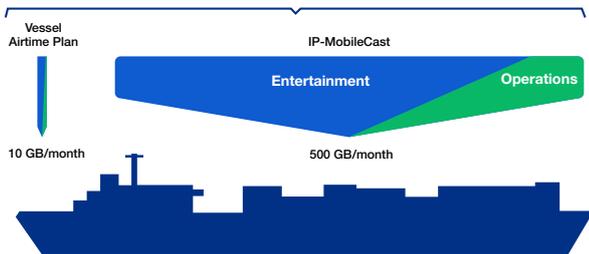
## CONTENT DELIVERY

# IP-MobileCast – Delivering licensed entertainment and critical operations content to ships at sea

## Highlights

- Delivers 500 gigabytes of content per month **without** consuming vessel's data plan or affecting onboard data speeds
- Enables large files to be delivered via a low-cost monthly subscription:
  - Movies, TV, news, sports, and music
  - ECDIS global chart databases
  - High-resolution weather and ocean data
  - Maritime training courses
- Content is viewed on flat screen TVs, tablets, smartphones, computers, and laptops
- Managed remotely by KVH with no burden to IT or crew
- Obsoletes physical delivery of content to ships

KVH INDUSTRIES  
MINI-SAT  
BROADBAND



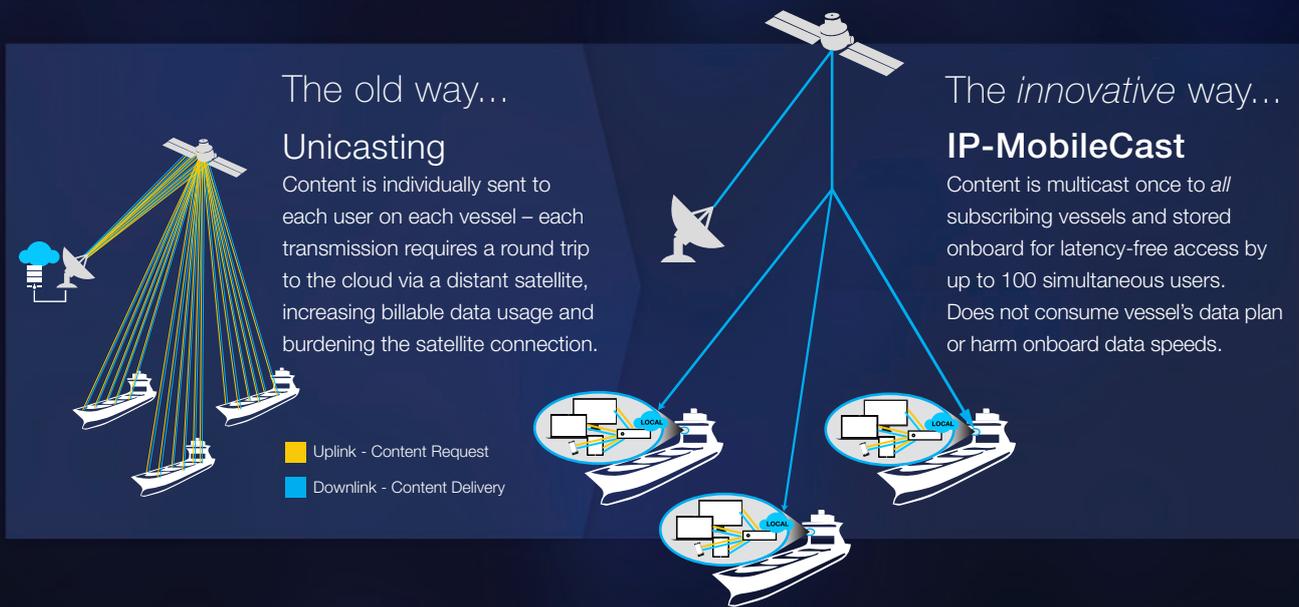
Compare a typical vessel's 10 GB/month airtime plan to the 500 GB/month of content multicast via IP-MobileCast and you'll get an idea of its power. A blend of the two delivery methods, when implemented with network management tools, can result in a lower total monthly bill and greater satisfaction onboard.



## How it works

In a maritime industry first, IP-MobileCast utilizes multicasting technology, a technique for one-to-many communications over an IP infrastructure. The capability to receive KVH's exciting IP-MobileCast service is built into all TracPhone VIP systems, and can be easily added to older TracPhone V-series products through the addition of the KVH Media Server.

## Unicast vs. IP-MobileCast



## Watch on any device

Officers and crew love IP-MobileCast. Everyone onboard has immediate, simultaneous, and unlimited access to IP-MobileCast's news, sports, movies, TV, music, and training channels – on the mess-room TV with their fellow crew members or by using their favorite personal device.



### TV

Bring crew together by connecting the KVH Set-top Box to a flat screen TV



### Computers & Laptops

Personal and ship computers are compatible with all of IP-MobileCast\*†



### Tablets

Enjoy the free IP-MobileCast app for Android and iOS\*



### Smartphones

Check news or sports quickly from the IP-MobileCast app\*

Get all the details on IP-MobileCast for commercial vessels, visit [kvh.com/ipmc](http://kvh.com/ipmc)

\*Personal device fee applies; see IP-MobileCast Activation Order for details.

†PC/Mac movie player planned for late 2015.



# KVH INDUSTRIES WORLDWIDE

Over 500 employees in 10 offices around the world  
dedicated to keeping maritime businesses connected



## **KVH Industries, Inc.**

**World Headquarters**  
50 Enterprise Center  
Middletown, RI 02842 U.S.A.  
Tel: +1 401 847 3327  
info@kvh.com



## **KVH Industries A/S**

**EMEA Headquarters**  
Kokkedal Industripark 2B  
2980 Kokkedal, Denmark  
Tel: +45 45 160 180  
info@emea.kvh.com



## **KVH Industries Pte Ltd.**

**Asia-Pacific Headquarters**  
1 Commonwealth  
#09-04 One Commonwealth Lane  
Singapore 149544  
Tel: +65 6513 0290  
info@apac.kvh.com

[kvh.com/one](http://kvh.com/one)



KVH – helping you meet international maritime regulations



KVH, TracPhone, IP-MobileCast, KVH OneCare, myKVH, CommBox, MOVIElink, TVlink, MUSIClink, NEWSlink, SPORTSlink, TRAININGlink, FORECASTlink, CHARTlink, CREWlink, and the unique light-colored dome with dark contrasting baseplate are trademarks of KVH Industries, Inc.

"mini-VSAT Broadband" is a service mark of KVH Industries, Inc.  
©2015, KVH Industries, Inc.

iPhone is a registered trademark of Apple Inc.  
U.S. Patents Pending

All other trademarks are the property of their respective companies  
Specifications subject to change without notice