



Bill Marks, Chief Commercial Officer of Kymeta ●●●

Kymeta was created to address the need for lightweight, slim and efficient communication systems that do not require mechanical components to steer toward a satellite, and services that are easy to buy and understand.

Kymeta mTenna™ technology provides software-enabled, metamaterials-based, electronic, beamforming satellite solutions that are flat, lightweight, small, and use software to steer instead of mechanical parts. mTenna technology uses software to electronically point and steer toward a satellite; this means the terminal will auto-commission and auto-provision, allowing for rapid setup and installation.

Driving the flat panel sector

Kymeta Corporation was established in 2012 to develop a software-enabled, electronically steerable, flat-panel antenna for the land, air and sea mobility markets. With this unique technology, Kymeta intends to enable high-speed, secure, global connectivity as never before. With the first products and services due for launch in the second quarter of 2017, Amy Saunders spoke with Bill Marks, Chief Commercial Officer of Kymeta Corporation, to find out more about the company's development and milestones, and its expectations of the market.

Question: Can you provide an overview of Kymeta's development and key milestones since its founding?

Bill Marks: At Kymeta, our business and technology has evolved quickly and strategically since we spun out of Intellectual Ventures in 2012. We've commercially launched a first-of-its-kind, flat-panel satellite antenna based on a metamaterials toolset that will enhance markets that are currently enabled with satellite connectivity, as well as open new markets that have never had access to satellite connectivity – across land, sea and air. Furthermore, we've built Kymeta as a holistic satellite communications and connectivity company by providing connectivity services called KALO.

KALO is unique because it makes satellite access easy to buy. It is available in familiar, flexible data packages that everyone understands.

Key technology developments and milestones include:

- Announcing commercial availability in March 2017 of the mTenna^{u7} satellite antenna and KyWay Terminal.
- Partnering with Intelsat to access their global satellite network and offer easy-to-purchase, flexible satellite connectivity services sold in by-the-gigabyte plans, called KALO Connectivity.
 - KALO can be bundled with a Kymeta KyWay Terminal or mTenna^{u7} ASM.
- The successful connection of a 20cm mTenna^{u7} ASM to Intelsat's Epic^{NG} satellite network, in partnership with Toyota. The test demonstrated that Kymeta mTenna technology can transmit and receive data with a single aperture, connect to the Internet and access YouTube videos, and conduct a Skype call, all within its first attempt.

We've demonstrated unprecedented product growth and testing success for multiple vertical markets. In February 2017, we successfully connected to the Intelsat Epic^{NG} satellite constellation with a 20cm mTenna antenna, which is the smallest antenna aperture to ever connect successfully to a satellite constellation. This will be



2017 is the year Kymeta launched its first commercial products and services – bringing satellite connectivity to mobile platforms ●●●



the solution for our consumer automotive business. Prior to that, we surpassed more than 50,000km of successful satellite-connected driving in a Toyota 4Runner outfitted with a 70cm mTenna antenna. Over the course of the testing, the mTenna technology, embedded into the roof of the automobile, automatically acquired and tracked Intelsat Ku-band satellite signals while on the move.

In September 2016, we delivered a massively successful live, flat-panel satellite demonstration for maritime applications during the Monaco Yacht Show, achieving data rates of 65Mbps down and 6Mbps up and 2.9dB additional gain when combining two Kymeta mTenna ASMs. During the show, the mTenna ASMs simultaneously received eight live Panasonic multicast eXTV channels, performed multiple live Skype video sessions, multiple HD and Ultra HD Netflix video sessions, and provided Wi-Fi access to an average of 80 users at any one time during the show. The demonstration also confirmed the low-power consumption of the Kymeta mTenna technology, drawing only 12W of power per ASM.

Question: What is it about the design that makes Kymeta's antenna unique, and how will it compare to other products available on the market?

Bill Marks: While the flat-panel antenna



Photo courtesy of Kymeta ●●●

market itself is not new, the Kymeta mTenna is the first and only electronically-steered, flat-panel antenna that's commercially available. An electronically-steered antenna does not require mechanical moving parts and relies instead on embedded software to point and acquire a satellite connection.

What's unique for Kymeta is the fact that we've utilized metamaterial design concepts and the existing US\$250 billion investment liquid crystal display (LCD) manufacturers have made to create an electronically scanned antenna that's lightweight, can be mass produced, and consumes very little power.

Question: Where does Kymeta see itself in the market? What geographical regions and vertical markets will it serve?

Bill Marks: Everywhere. Some initial applications will be seen in maritime, rail, coaches, VIP and civilian armored vehicles, energy and construction. At Kymeta, we fully intend on breaking down communication barriers for anything that moves.

Question: Kymeta has agreed to work with key players like Intelsat, Inmarsat and Panasonic Avionics. What can you tell us about these deals and their progress to date?

Bill Marks: We first announced our partnership with Intelsat in December 2015, after initial success in on-the-road testing using Intelsat's global satellite network. Since then, we successfully connected a 20cm mTenna technology terminal to the Intelsat Epic^{NG} satellite network, and surpassed 50,000km of satellite connected driving in a Toyota 4Runner installed with a 70cm mTenna. And in March 2017, we announced with Intelsat KALO Connectivity, which redefines satellite connectivity with familiar data package options that consumers are used to buying today.

Question: Kymeta received a lot of recognition from various awarding bodies in 2016, and won several prizes for innovation: Of which is the company proudest?

Bill Marks: As a company founded just four years ago, we take great pride in all recognition. Since 2016, we have received the following awards:

- 2017 SSPI Rising Five Award for Ground Systems Sector
- 2017 Fast Company World's Most Innovative Companies in Space
- 2017 Puget Sound Business Journal Innovation Award for Technology
- 2016 Seattle Business Silver Tech Impact Award for Emerging Technology
- 2016 Fierce 15
- 2016 2b AHEAD Innovators Award
- 2016 New Product Innovation Award by Frost & Sullivan

Question: What key emerging trends and challenges does Kymeta expect from the future, and how will the company respond?

Bill Marks: Half the world is disconnected from the Internet and demand for connectivity in the other half is skyrocketing. Within the next 15 years, there will be a projected 30 billion connected devices on this planet. It's important to understand that less than 10 percent of the Earth is covered by terrestrial cellular networks, and it's very time-consuming and costly to build out the infrastructure. The only option for meeting the increased demand for bandwidth is to go to space, which has over 5,000 times more spectrum available than terrestrial spectrum. Our technology provides the only solution that is globally scalable, cost effective and ubiquitous to meet this need and seamlessly connect this volume of mobile devices around the world.

Question: What's on the horizon for Kymeta in 2017 and beyond?

Bill Marks: 2017 is the year we launched our first commercial products and services – bringing satellite connectivity to mobile platforms, including superyachts and VIP and civilian armored vehicles with the availability of the Kymeta mTenna ASM and KyWay terminal, and making it easy to buy and use with KALO connectivity services. Throughout 2017, we will continue to make significant developments within other markets like rail and construction, as well as continue our great work with Toyota to bring satellite connectivity to connected cars. Space and satellite connectivity are the key to our connected world, and Kymeta is helping to make it possible. ✨