

**Test Solutions for the Global Wireless Industry from Telecom
To the Military, Robotics and Medical Devices**



Fanny Mlinarsky
President
octoScope

+1.978.376.5841
fm@octoscope.com

CEOCFO: Ms. Mlinarsky, what is octoScope?

Ms. Mlinarsky: octoScope is a manufacturer of test solutions for the wireless industry. We manufacture a test platform that we sell to service providers like Verizon, Comcast and others, as well as to their supply chain, including manufacturers of equipment (e.g. Cisco, Netgear) and chipset vendors (e.g. Qualcomm, Broadcom) that sell to equipment vendors. This is our customer base; manufacturers and service providers that enable wireless services, both for cellular phones and tablets, as well as for Wi-Fi in the home and video to the Wi-Fi enabled set top boxes and other services like that.

CEOCFO: Are there many companies that offer test solutions?

Ms. Mlinarsky: Wireless testing has to include a few basic tests. You may be testing wireless transmission range, or the performance of the data services that run over the radio technology. Our unique solution enables testing performance and behavior of wireless devices and systems. We do not have a great deal of direct competition, but companies that have access to RF engineers can set up their own in-house systems that can run similar tests as the octoScope solution. This means that we compete mostly with inside engineers, but since RF engineering is a lost art, it is difficult to find RF engineers today. Our octoBox system basically replaces RF engineers. Wireless companies with limited RF talent (e.g. software-focused companies such as Google) can buy our system and have a cost effective turnkey wireless test platform. The octoBox testbed is about the size of a refrigerator. It is shipped fully assembled and ready to use.

CEOCFO: How does it work? How do they utilize your solution?

Ms. Mlinarsky: It works similar to a flight simulator that you would have for training pilots to fly an airplane. Inside the octoBox testbed we can emulate a variety of challenging conditions, including path loss, multipath and motion of the radios. For example, we can emulate scenarios such as driving in car with your mobile phone seeing multiple base stations along the highway. The octoBox can emulate low signal, interference, signal bouncing and reflecting from cars or buildings. We can emulate all of these challenging conditions inside our test platform. The radios placed inside the octoBox testbed can interact with one another, and with emulated interference and emulated traffic from adjacent networks. The octoBox creates a realistic environment, and under software control, we can vary this environment to emulate a series of challenging conditions that a radio may encounter in the real world. At the same time we can observe and analyze the behavior and performance of the radio under these conditions.

CEOCFO: You recently announced a new product. What will that do and how is it different?

Ms. Mlinarsky: The new product is our iGen™ interference generator, which adds traffic and other types of interference, such as in a home environment. For example, Comcast is providing video over Wi-Fi into an apartment building. One customer would have a Wi-Fi enabled set top box and has neighbor across the wall who has a network and is also running video, with ten other neighbors doing the same thing with Comcast. In an apartment building when you turn on your set top box, it may be in range of 30 or 40 other networks and all of these networks can be running video, which creates bad interference. The new generation Wi-Fi enabled devices feature smart algorithms to mitigate interference. To test these algorithms, the iGen can emulate a range of interference scenarios. Under program control you can emulate any number of networks with video load or traffic load. Our iGen also emulates Bluetooth devices, baby monitors, radar and other common sources of interference. The iGen adds that aspect of real life environment of traffic and interference into the testbed.



CEOCFO: Are you a global company?

Ms. Mlinarsky: We are.

CEOCFO: Are there areas where you see more growth?

Ms. Mlinarsky: We see Asia being just as active as the US. Many of our customers are multi-national companies like Qualcomm, Cisco and Broadcom. They have big facilities in India, China and Taiwan. Some development activity we see moving from Taiwan to China. There is a great deal of development going on in Asia today. The benefit of the octoBox is that our customers can use identical test systems in hundreds of labs around the world. And test engineers can recreate the same conditions and test scenarios in all of these labs. They can easily exchange test results, test configuration files and collaborate in a productive way.

CEOCFO: Your website indicates that your solutions are used by the military, in robotics and in medical. Where are some of the areas that people would not realize that your products can make a difference?

Ms. Mlinarsky: Most robots are wirelessly controlled. For example, you have military robots made by iRobot and other manufacturers. These robots have vision systems so that the soldiers would see what the robot's camera is capturing via a wireless link. They can also remotely control the robot's motion and actions. All of the video feed and control happens wirelessly. Obviously, this is a mission critical application. The octoBox testbed can be configured to test mesh networks. In the field, the military sometimes needs to deploy ad hoc mesh networks because there may be no infrastructure for wireless communications available. For example, in a desert somewhere you can deploy ad hoc wireless service based on meshing. With mesh networks, base stations connect to one another and form a network instantly. Such networks are difficult to test, but with our octoBox platform we can set up a variety of mesh typologies and emulate motion, distance and airlink impairments, so that engineers can verify mission critical applications. In the medical space, the octoBox is used to test the Lifeline device that seniors wear to trigger an alert in case of a fall or another accident. The Lifeline has multiple radios inside a small space and our system is used to test all the radios.

"Our octoBox system basically replaces RF engineers. Wireless companies with limited RF talent (e.g. software-focused companies such as Google) can buy our system and have a cost effective turnkey wireless test platform." - Fanny Mlinarsky

CEOCFO: Do companies in the industry know you and automatically come to you or do you need to advertise or promote octoScope?

Ms. Mlinarsky: We have not advertised at all, but we do participate in industry standards activities. For example if there are standards for test methodology for medical devices, we are there to contribute, so that is how we connect with our customers. We also publish articles and white papers in trade magazines. Then there is word of mouth. We sell to an operator like Comcast that may want their suppliers to have the same testbed as Comcast engineers, so that they can replicate any issue that come up in testing. That is how our system propagates.

CEOCFO: How do you stay ahead of changes in technology?

Ms. Mlinarsky: Changes are good for us because they require new features in test equipment and new features drive new sales. Wireless has been changing and getting faster throughput with better range, driven by smart devices that require multiple wireless services, such as video, calling and sharing of photos. Other new technologies include wireless projection from small devices to large screens and this capability requires new standards and new testing.

CEOCFO: You founded the company in 2006. What has surprised you as octoScope has grown and developed?

Ms. Mlinarsky: We decided not to get outside financing, so octoScope is self-financed. We did consulting originally and it was challenging to transition from consulting services to product manufacturing. Cash flow was our main challenge during the transition. Now we have good profitability, but new challenges are always on the horizon.

CEOCFO: What are your plans for growth?

Ms. Mlinarsky: We are growing organically and through partnerships. We have doubled our sales for 2 years in a row, so this is an exciting time for octoScope.

For more information visit: www.octoscope.com