Mitsubishi Electric Research Laboratories Celebrates 25 Years of Innovation

Boston, MA – June 2, 2016 – Cambridge, Massachusetts-based Mitsubishi Electric Research Laboratories will mark 25 years of innovation in a day long celebration on June 2 at Norton's Woods at the American Academy of Arts and Sciences, in Somerville, Massachusetts. Keynote addresses by Dr. Matthew E. Brand of Mitsubishi Electric Research Labs and Prof. Dimitris Bertsimas of Sloan School of Management and Massachusetts Institute of Technology will highlight the invitation-only event, which will also feature panel sessions and a research showcase.

The showcase will feature eleven of the latest achievements by Mitsubishi Electric Research Laboratories' researchers, and includes such breakthrough technologies as:

- **Dose optimization for particle beam therapy systems** – a powerful new method that permits accurate planning of particle beam therapy in cancer treatment. It rapidly computes the dose of radiation that will result from a set of particle beams. This new method can compute the dose with 99 percent accuracy in only one one-hundredth of a second, which is approximately 100 times faster than existing methods.

- **Deep clustering for speech separation** – a noise-suppression technology that significantly improves the quality of hands-free voice communication in noisy conditions, such as making a voice call via a car navigation system. This new technology separates mixed speech signals and improves voice clarity by removing 96 percent of ambient sound, including rapidly changing noise.

- **Indoor localization using wireless and acoustic signals** – an indoor positioning system using wireless communication and acoustic ranging for accurate positioning where GPS signals are unavailable. Practical applications include walking navigation, worker administration, warehouse logistics and asset management.

- **Detection of a 1 Tb/s super channel with a single optical receiver –** in this optical communications technology, data is transmitted and received at a rate of just over 1 Tb/s without any errors in detection using an ultra-high bandwidth receiver and a multi-wavelength transmitter, combined with newly developed digital signal processing algorithms. This technology was designed to help meet the needs of the massive increase in data transmission driven by the proliferation of Internet-connected devices.

Mitsubishi Electric Research Laboratories, located in Cambridge, conducts corporate research and development for the group of companies ultimately owned by Mitsubishi Electric Corporation in

North America as well as for Mitsubishi Electric Corporation itself. MERL is home to some of the world's leading experts in such areas as electronics and communications, multimedia, data analytics, computer vision, mechatronics, and algorithms.

As one of the world's longest-running research labs, Mitsubishi Electric Research Labs has earned 1,120 patents. Most recently these patents were awarded for such advances as multiple spotlight synthetic radar imaging using random beam steering, antenna selection with frequency-hopped sounding reference signals, antenna selection with frequency-hopped sounding reference signals, and linearizing power amplifiers.

"The overriding vision of Mitsubishi Electric Research Laboratories is to deliver innovation that has a lasting impact on the world," said Richard Waters, Ph.D., president, CEO and founding member of Mitsubishi Electric Research Laboratories. "I'm proud of the cutting edge technological advances we've developed in our 25-year history."

The research lab attracts brilliant minds from throughout the world and currently offers professional opportunities for research scientists and a postdoctoral researcher. In addition to these professional positions, the research lab is currently recruiting for 13 internships that offer Ph.D. students the opportunity to participate in exciting research in a stimulating environment, with the objective that their work lead to publication. Research areas for these internships include machine learning artificial intelligence, optimization algorithms for model predictive control, coherent optical transmission systems, and nonholonomic planning and control. Qualified candidates are invited to explore these internship opportunities.

Media contact:
Cayce Blanchard
Senior Vice President, Corporate Communications
Mitsubishi Electric US, Inc.
(714) 229-3837
cayce.blanchard@meus.mea.com