



Mark E. Russell is vice president of Engineering, Technology and Mission Assurance for Raytheon Company. He assumed the position in July 2008, and was elected a company officer in June 2008. Raytheon Company (NYSE: RTN), with 2007 sales of \$21.3 billion, is a technology leader specializing in defense, homeland security and other government markets throughout the world. With headquarters in Waltham, Mass., Raytheon employs 72,000 people worldwide.

Russell guides the company's vision and provides corporate leadership in the strategic areas of technology and research, engineering, operations, performance excellence, Raytheon Six Sigma™ and Mission Assurance. He is responsible for 45,000 world-class people working on more than 8,000 programs.

Prior to leading Raytheon's engineering organization, Russell was vice president of engineering for Raytheon's Integrated Defense Systems (IDS) business. In this role, he was responsible for leading IDS' engineering activities, including the capture and management of technology and advanced programs; coordination of strategic architecture initiatives; development and production of advanced semiconductor products at Raytheon RF Components; continuous improvement of processes and tools; and product development.

Russell has worked in design engineering, operations, field testing, and project and program management for state-of-the-art radar, missile and communication systems including Patriot, HLDA1, Wide Band Gap Semiconductor (WBGs), Terminal High Altitude Area Defense (THAAD) System, Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS), Sea-Based X-Band Radar (SBX), Cobra Judy Replacement, Upgraded Early Warning Radar (UEWR) and the Zumwalt-class destroyer. He has overseen the management of production facilities, including the Advanced

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Products Center and Raytheon RF Components. He has also served as director of surface radar engineering, and the Radar Design and Electronics Center for Raytheon's Electronic Systems business, and he has expertise in the development of microwave systems and components.

Russell has published 16 peer-reviewed papers on active electronically steered arrays and radar systems, missiles, photonic technology, solid-state transmitters and communications systems. He holds 36 patents in the areas of microwave and millimeter wave components, high-range resolution radar applications and missile seekers.

Outside of Raytheon, Russell provides leadership on the Board of Directors of the National Action Council for Minorities in Engineering and Valeo Raytheon Systems. He is involved in the University of Massachusetts K-16 Engineering Collaborative and the National Science Foundation's Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere (CASA), and he is Raytheon's campus executive for the University of Massachusetts.

Russell graduated from the University of Massachusetts Lowell with a bachelor's degree in electrical engineering. He joined Raytheon after graduation, and then attended the University of Massachusetts Amherst under the Raytheon Advanced Study scholarship program, earning a master's degree in electrical engineering. The universities have both honored Russell for his career accomplishments with distinguished alumni recognition.

Russell has completed several Raytheon management programs, including the Executive Leadership Summit and Business Leadership Program, and is a qualified Raytheon Six Sigma Specialist. Russell is a member of the Institute of Electrical and Electronics Engineers (IEEE) and the American Institute of Aeronautics and Astronautics (AIAA).