2012 Global Gas Detection Growth Leadership Award
Frost & Sullivan’s Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company’s research philosophy originates with the CEO's 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2012 Global Growth Leadership Award in the Gas Detection Market to RAE Systems.

Significance of the Growth Leadership Award

Key Industry Challenges Addressed by Increased Growth Leadership

The gas detection industry is at different stages of growth globally. The need to comply with increasingly tough safety and environmental regulations is driving investment in toxic and combustible gas detectors among oil and gas, refining, petrochemical, and mining customers. Industrial accidents, such as the 2010 catastrophic explosion of the Deepwater Horizon oilrig, continue to emphasize the need for better process measurements and safety warning systems. More recently, Total’s Elgin platform gas leak that took place in March 2012 has raised serious concerns and is pushing Governments and regulatory bodies to propose stricter safety regulations. The occurrence of these incidents, across the globe, that involve hazards due to asphyxiation, explosions and threat to life are a constant reminder of the need for constant monitoring and detection solutions.

In addition, health and safety organizations are starting to place emphasis on not just industrial safety but also worker’s health. There is an increasing awareness that long-term exposure to even very low concentrations of toxic or hazardous gases can adversely affect workers’ health. Organizations such as the American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) and the Occupational Safety and Health Administration (OSHA) continue to set standards and define the acceptable level of toxic gas exposure to personnel. Therefore, the need to comply with regulations and legislation and to ensure worker safety has helped the market remain relatively stable, even during the economic downturn.

The global market for gas detection is projected to grow with a healthy CAGR of over 4.0 percent up to 2018. There is a strong demand for innovative, high-performance,
intelligent gas detection systems that enable real-time safety and security threat
detection. The market is highly competitive and companies that do not have a clear
business strategy and sound financial plans will not succeed. In addition, companies that
lack a solid network of suppliers, distributors, customers, and industry partners will face
challenges in introducing new and innovative products to the market quickly and cost-
effectively. In order to achieve market leadership, a company has to focus on its core
competencies, collaborate with reputable industry partners, and create customer value.

Impact of Growth Leadership Award on Key Stakeholders
The Growth Leadership Award is a prestigious recognition of RAE Systems’
accomplishments in the Gas Detection Market. An unbiased, third-party recognition can
provide a profound impact in enhancing the brand value and accelerating RAE Systems’
growth. As captured in Chart 1 below, by researching, ranking, and recognizing those who
deliver excellence and best practices in their respective endeavors, Frost & Sullivan hopes
to inspire, influence, and impact three specific constituencies:

• **Investors**
  Investors and shareholders always welcome unbiased and impartial third-party
  recognition. Similarly, prospective investors and shareholders are drawn to
  companies with a well-established reputation for excellence. Unbiased validation is
  the best and most credible way to showcase an organization worthy of investment.

• **Customers**
  Third-party industry recognition has been proven to be the most effective way to
  assure customers that they are partnering with an organization that is leading in its
  field.

• **Employees**
  This Award represents the creativity and dedication of RAE Systems’ executive
  team and employees. Such public recognition can boost morale and inspire your
  team to continue its best-in-class pursuit of a strong competitive position for RAE
  Systems.

**Chart 1: Best Practices Leverage for Growth Acceleration**
Best Practice Award Analysis for RAE Systems

The Frost & Sullivan Award for Growth Leadership is presented to the company that has demonstrated excellence in capturing the highest annual compound growth rate for the last 5 years.

**RAE Systems’ Performance in the Gas Detection Market**

RAE Systems has established itself as a leading developer of intelligent gas detection systems for energy, hazardous material management, industrial safety, national security, public safety, and environmental remediation. It has a comprehensive range of products that include personal, hand-held, portable, and fixed gas detectors with wireless transmission that enable real-time safety and security threat detection. Its products are used in more than 120 countries, and it is continuing to expand into newer geographies. RAE Systems reported a record 17.0 percent surge in its revenue for 2011. It has shipped more than 500,000 gas detection units worldwide since 2002 and produces over 20,000 sensors a month. Over the past three years, it has recorded an average year-over-year revenue growth rate of more than 13.0 percent and a 7.0 percent average year over year growth rate for the past five years which is almost double the industry growth rate. It has successfully penetrated the North American, Western European and Middle Eastern and Asian industrial gas detection markets in a relatively short span, and is one of the few companies that cater to the fixed, portable as well as the gas detector tubes market. Frost & Sullivan has identified RAE Systems as a high growth company that is garnering market share faster than other market participants in the gas detection space. A key driver for success is the incorporation of wireless communication and data transmission capabilities into its products. RAE Systems’ has offered wireless data transmission solutions for the industrial gas detection market for over a decade. Continued innovation in this space has resulted in higher customer acquisition and retention. The company successfully countered the negative impact of the recession by strengthening its product portfolio with several innovative products, which include the ToxiRAE Pro single gas monitor. Revenue was also driven by the adoption of the immensely successful new MultiRAE multigas (and Gamma detection in the MultiRAE Pro) monitors and MeshGuard wireless gas detection platforms.

**Key Performance Drivers for RAE Systems**

**Factor 1: Comprehensive Product Portfolio**

RAE Systems offers a broad and comprehensive range of solutions for chemical, gas, and radiation detection. The company is a proven technology leader that owns and manufactures its own sensor technology. RAE Systems is able to differentiate itself from its competitors by offering a broad array of intelligent fixed and portable gas detectors and transportable area monitors, which constitute a comprehensive solution offering that efficiently caters to the combined requirements for gas detection and monitoring in various
industries and application areas. Its offerings include wirelessly enabled solutions that are designed to meet the needs of emergency response, national security, CBRNe agent detection, fire and military end user applications. Its rapidly-deployable connected, intelligent gas and radiation detection systems enable real-time delivery of safety and security threat detection. These products are ideal for continuous, real-time detection of unseen threats such as radiation, chemical warfare agents (CWA) and toxic and combustible gases. RAE Systems products and solutions are used for risk mitigation, asset protection and worker safety by major global organizations in energy, oil and gas exploration and refining, industrial, HAZMAT, first responders, public and sports venues such as the Super Bowl, World Series games, NBA championship, BCS bowl games, European soccer championships as well as Government conventions. The AreaRAE has been the wireless monitoring system of choice for major public venue events including the MLB World Series, NASCAR racing, NBA Championships, U.S. Republican and Democratic Conventions, the Worldwide NATO summit and the Olympic Games. It has also developed a number of software solutions such as the ProRAE Guardian, which allows real-time wireless threat detection. In addition, RAE systems supports its customers through training, technical support and efficient service. Thus, it has established itself as a one-stop shop for gas detection and monitoring solutions in the industry which has enabled it to gain new customers as well as retain its existing customers. Leading energy companies utilize RAE Systems monitors for exploration, refining as well as downstream monitoring and safety. Some of its customers in the energy sector include BP, Chevron, Citgo, Exxon, ConocoPhillips, Sunco, Valero Energy Corporation, Chesapeake Oil, Texaco, Petrobras, Marathon Oil, Total Petroleum, Shell, and others. Customers in other industry sectors include DuPont, Formosa Plastics, Georgia-Pacific, Solvay, among others.

RAE Systems products have also been deployed with Special Forces around the world. Current government users of RAE Systems instrumentation include the United States Air Force and Navy, National Guard WMD Civil Support Teams, US Environmental Protection Agency, US Postal Inspection service, FBI, Department of Homeland Security and Federal Emergency Management Agency. Its comprehensive range of products and solutions are one of the key success factors that have contributed to the growth of RAE Systems in the gas detection equipment market.

Factor 2: Degree of Innovation with Products and Technologies

RAE Systems is an innovator, holding over 40 patents for chemical and radiation sensors. The company has developed proprietary photo ionization detectors (PID), wireless, and radiation-detection technologies. The company has differentiated itself from the competition by developing a broad range of specific chemical sensors that includes electrochemical, solid polymer, infrared and catalytic-bead gas sensors as well as photo ionization detectors. It is also able to provide unique, integrated solutions, like the MultiRAE Pro, which combines radiation and chemical sensors with wireless communication capabilities, in a single product.
RAE Systems continues to maintain its focus on gas and radiation detection and it invests heavily in research and development.

The ProRAE Guardian, which was launched in the first quarter of 2012, is an example of its continued innovation in the gas and radiation detection market. The ProRAE Guardian system, which finds application among oil and gas, industrial, emergency responder, military, and national security customers, allows real-time data transmission. It acts as a “mobile command and control center” for situations that require real-time access to toxic gas and radiation data across geographically dispersed teams. This system supports a broad range of the company’s products and allows for the remote monitoring of meteorological conditions (such as wind speed, wind direction and temperature) as well as physiological conditions (like heart rate, location tracking) of first responders through wireless communication. The ProRAE Guardian can provide instant updates of real-time data and connects, integrates and transmits data from RAE Systems’ monitoring products to remote monitors that may be located anywhere in the world. This real-time data capability validates the effectiveness of the gas detection and monitoring solution and has the potential to change the industry. Thus, RAE Systems’ products emerge as quality comprehensive gas detection and monitoring solutions.

RAE Systems’ wireless solution for portable gas detection monitors, which features the MultiRAE, QRAE, UltraRAE, and ToxiRAE Pro range of multi-gas and single-gas instruments, enhances worker and responder safety while providing supervisors with real-time visibility of threat data and the ability to respond expeditiously in the event of an incident. The EchoView Host Mini-Controller establishes a closed-loop wireless network with up to eight portable gas monitors and it displays real-time data. The controller has a 10-day running time and has a communication range that is extendable to 0.6 mile. The ToxiRAE Pro which was developed for toxic gases and oxygen can operate wirelessly (more than 12 hours) as well as through non-wireless modes. RAE has also incorporated wireless data transmission capabilities into the ppbRAE3000, which is a handheld volatile organic compound gas monitor that can detect gases at parts per billion concentrations. RAE Systems’ therefore, is able to offer a wide range of differentiated solutions with wireless capabilities. Though competitors provide wireless gas detectors, none has successfully delivered an integrated product with real-time information.

**Factor 3: Growth Strategy and Implementation**

RAE Systems’ success lies in its ability to identify new product and service opportunities and in developing new products and services that are deployed in a timely and effective manner. Its continued emphasis on innovation in sensor technology as well as product capabilities has contributed to its strong growth in the industrial gas detection market. By focusing on its core competencies, it has been able to expand its business of producing gas detection instruments to include wireless systems for local and remote security monitoring. RAE Systems has been able to penetrate into markets like the oil and gas industry that were
Initially hesitant to adopt wireless data transmission by providing innovative and reliable solutions for gas detection and monitoring. In addition to its product and service offerings, it also offers a full range of training and support materials, thus making it a comprehensive technology and solution provider.

Another key growth strategy is its well-defined, end user market focus. RAE Systems focuses on five major end user markets: Energy, Hazardous Material Management, Industrial Safety, National Security and Public Safety, as well as Environmental. It develops products and innovates based on the needs of these key end-user markets.

RAE Systems leverages its global resources and presence, continuing to form strategic alliances and partnerships. It is able to deploy its products quickly and effectively in more than 120 countries through its international network of direct sales personnel, representatives, and distributors from key locations in North America, Europe, and the Asia-Pacific region. The regional manufacturing and distribution strategy enables RAE Systems to build local solutions designed to meet the specific needs of local markets and is crucial to RAE Systems’ aim of getting its product to the customer quickly and more efficiently.

**Factor 4: Efforts to Achieve Best-in-Class Performance**

RAE Systems’ values are based on sustained growth and are denoted by a strong balance sheet and intelligent capital deployment. RAE Systems has produced systems with wireless communication capabilities for more than a decade and has a strong and growing portfolio of differentiated gas and radiation detection solutions. Leveraging its impressive and highly qualified workforce, along with superior performance, the company is a growing technology provider with consistent growth, high-recurring revenue, industry-leading margins, and a global presence through its manufacturing and distribution platforms. By maintaining its market focus on intelligent gas detectors and monitoring solutions with wireless data transmission capabilities, entrepreneurial culture and technological competitiveness by investing significantly into research and development, RAE Systems has been able to position itself as a leader in the gas detection equipment market.

**Conclusion**

Having introduced thousands of new products to the market since 2001, RAE Systems’ highly diversified, innovative and intelligent gas detection product and technology offerings reach a variety of end-user market segments. Based on Frost & Sullivan's independent analysis of the Global Gas Detection Market, RAE Systems is recognized with the 2012 Global Growth Leadership Award.

**The CEO 360-Degree Perspective™ - Visionary Platform for Growth Strategies**
The CEO 360-Degree Perspective™ model provides a clear illustration of the complex business universe in which CEOs and their management teams live today. It represents the foundation of Frost & Sullivan's global research organization and provides the basis on which companies can gain a visionary and strategic understanding of the market. The CEO 360-Degree Perspective™ is also a “must-have” requirement for the identification and analysis of best-practice performance by industry leaders.

The CEO 360-Degree Perspective™ model enables our clients to gain a comprehensive, action-oriented understanding of market evolution and its implications for their companies’ growth strategies. As illustrated in Chart 5 below, the following six-step process outlines how our researchers and consultants embed the CEO 360-Degree Perspective™ into their analyses and recommendations.

**Chart 2: The CEO's 360-Degree Perspective™ Model Directs Our Research**

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**Critical Importance of TEAM Research**

Frost & Sullivan’s TEAM Research methodology represents the analytical rigor of our research process. It offers a 360-degree view of industry challenges, trends, and issues by...
integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

**Chart 3: Benchmarking Performance with TEAM Research**

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**About Frost & Sullivan**

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit [http://www.frost.com](http://www.frost.com).