

**SAMPLE OF PREVIOUSLY SUBMITTED Nomination Application*****WIT's 2008 Women of the Year in Technology Awards
Presented by Grant Thornton*****Application Form****Select ONE category for this nomination**

- Emerging/Small Organization** (up to 100 employees)
 Mid-size/Medium Organization (101-1000 employees)
 Enterprise Organization (over 1000 employees)

Nominator Information

Nominator First Name: David

Nominator Last Name: Smith

Nominator Title: Vice President and General Manager

Company/Organization Name: EMS Technologies' Defense & Space Systems Division

Nominator Company/Organization – EMS Technologies, Inc.**Nominee Company/Organization – EMS Technologies, Inc.****Nominee Role & Responsibilities**

Please limit each response in the remainder of the application to 3500 characters. All sections must be complete for a nominee to be considered for the WOTY Award.

A. Provide a brief overview of the nominee's company or organization, including its primary services and/or products.

EMS Technologies' entrepreneurial spirit and innovation-driven culture are the hallmark of the Company since its founding in 1968 in Technology Park. The only space-based business headquartered in Georgia, EMS is where you go when you have impossible engineering problems to solve. EMS's rugged commercial and defense and space technology is found on virtually all the world's secure military communications satellites as well orbiting three planets.

A wireless and satellite communication solutions leader, EMS serves aeronautical, defense, maritime, commercial space and supply chain markets. The Company has three divisions –

- **LXE**, a leader in mobile wireless computers and networks in the warehousing and intermodal markets,
- **SATCOM**, a leading provider of aeronautical high-speed communications and Search and Rescue (SAR) solutions, and
- **Defense & Space Systems (D&SS)**, enabler of many of today's most advanced military and commercial space applications. EMS microwave systems serve the battle space in communications, surveillance, precision strike and electronic warfare. Its low-observable, compact, and high-performance RF systems work across all warfighter platforms -- from space, air, ground and sea, to the soldier traveling on foot. D&SS also provides antenna capabilities for next-generation commercial satellites for entertainment



and Internet connectivity. D&SS's customers include the world's best defense and space companies.

B. Describe the nominee's role and responsibilities within the organization and include the reporting structure. Please also specifically state any new roles or responsibilities that the nominee has assumed over the last 12 months that reflect growth in her career.

Theresa is currently a Principal Engineer supporting Business Development in EMS Defense & Space Systems, a division that relies heavily on a collaborative, full lifecycle engineering culture; you just don't do your part; you participate in products from concept to delivery and beyond.

Reporting structure:

Theresa reports in to the VP of Engineering, who is a direct report to the VP and General Manager of D&SS.

Specifics on her responsibilities:

Theresa serves in the role of the Technical Lead for the first Anti-Jamming Antenna Beam Former program sold for a commercial satellite application (our customer is Thales). The Technical Lead position is held by a senior systems engineer who leads the technical development team. This team includes 21 engineers of multiple disciplines -- EE (Electrical and Microwave), ME (Mechanical), Systems, and Test) on a specific program team. She gives direction to a team of engineering, defining the design architecture of this system and is responsible for accomplishing the work within the schedule and cost commitments made to the company. Theresa is responsible for presenting the results both internally (to the division management) and externally to the customers (through periodic technical interchanges and more formal design reviews).

Previously, she was a Business Development director pursuing new business from the U.S. Government's National Labs in support of Research and Development. Today, she continues in a technical leadership role, helping to pursue new business for the division. She has also managed functional groups within EMS Engineering (microwave engineering).

Application Questions

1. What specific business and/or technology milestones has this nominee achieved for herself and/or for her company and why were they important?

Theresa led EMS Technologies team which won the first space antenna contract with the Jet Propulsion Laboratory, the lead U.S. center for robotic exploration of the solar system. EMS's Ka-band antenna will be used to land the Mars Science Lab on the Red Planet next year.

This is the first space antenna EMS has sold for this use (The Company's antenna technology already is present on many military and civilian aircraft). EMS won the job because NASA had confidence that the Company would hit the delivery dates. Because of the relative orbits of the planets, NASA has only a one-month window to go to Mars (every 26th month), so if you miss your window, you have to wait over two more years to launch again. EMS believes that as the U.S. continues to have missions to both the moon and Mars, NASA will need this kind of system. Theresa was also instrumental in winning the first commercial anti-jam system, a growing market since countries around the world want to jam-proof their satellite infrastructure that is increasingly mission critical to their economy and security. The EMS system offers the ability to



reconfigure the antenna on orbit. This is important since commercial satellites have 15 years of life. EMS's anti-jam technology allows these customers the ability reconfigure the antenna beam as their user base changes on Earth. EMS believes this anti-jam technology is a growing market, given the world's dependent on satellites.

2. Provide up to three examples of how the nominee has demonstrated superior leadership in her company. Please quantify results as it relates to positive impact to the organization such as increased revenues, reduced costs, greater productivity, improved customer satisfaction, development of employee talent, etc.

Theresa has worked within engineering, supporting operational execution, and within business development, developing system concepts for new products. She convinces customers EMS has solutions and unique approaches to gain advantages for these customers in the market place. She is tough and aggressive when attempting to meet customer schedule demands and internal cost objectives, and helpful and supportive to those interested in learning more and growing in their knowledge and understanding of the programs or technology where she is an expert. Theresa demands the respect of others both through her technical knowledge as well as her rigid adherence to meeting the requirements of a project.

Below are three examples of Theresa's direct contributions on specific programs:

- EMS Defense & Space Systems is a longstanding provider of key RF hardware and electronics for JSTARS – the Air Force's Joint Surveillance and Target Attack Radar System, a program that continues to contribute to EMS's record backlog. When EMS's production contract went into full-scale production, Theresa was involved in trouble shooting to improve the yield. Her efforts focused on all aspects of the microwave design and testing, resulting in a dramatic improvement in manufacturing yields -- from 40% to 90% that continues today.
- She developed software and design tools that allowed EMS to get *first-pass success* on EMS microwave system designs typically used in beam formers. These tools have saved the Company significantly on re-design costs, reducing design cycle time by 50 %. These tools were leveraged on both smaller jobs and larger ones such as Milstar, Advanced EHF, DirecTV and TSAT development work, as well as on the Company's first commercial anti-jam contract.
- Theresa has managed EMS's Active and Passive Microwave Group for several years, and developed tools that are widely used by both groups, and she still serves as a mentor to all the microwave engineers, including the current manager of the Passive Microwave Group, Adam Kroening.

EITHER

For nominees that occupy business leadership roles:

3A. How has the nominee impacted the organization's technology service or product to create business value? Please quantify results.

OR

For nominees that occupy technology or scientific leadership roles:



3B. How has the nominee used technology or scientific innovation to create business value? Please quantify results.

Theresa played a key role in helping win the first commercial anti-jam program for EMS in late 2007 valued at several million dollars. This program was very strategic for the future of our Space business in that it is the first of its kind and key to future architectures of many other commercial communication satellite endeavors. The Beam forming technology used in this satellite will be key to companies looking to prevent interference, jamming and that desire a need for agility in their antenna beam patterns over the mission life (we believe this will be a future discriminator for communications satellites).

In addition, Theresa responded to an open bid from the Office of Naval Research with a creative proposal for building a lightweight multiple beam antenna for use on Unmanned Aerial Vehicles (UAVs). This antenna will allow UAVs to communicate both with the ground and with other UAVs. EMS believes that the UAV market represents a growing emerging market, as the military requires ever-lighter payloads. Theresa is leading efforts to introduce plasticized components to make EMS technology even more lightweight and meet the Navy's stringent performance needs.

4. List the civic and/or service organizations, business, and/or professional organizations in which the nominee is involved (include positions held where applicable) and provide up to three examples of how the nominee has demonstrated superior leadership in helping the organization(s) achieve a specific initiative and/or its mission. Please quantify as much as possible.

IEEE Atlanta section— Theresa served as the newsletter editor and Professional Activities Council of Engineers (PACE) volunteer. Her thrust in PACE was pre-college education, with the goal of encouraging more young people to consider engineering as a career. She gave seminars and was involved in classroom teaching for local high schools on career day. She also edited the Atlanta section newsletter for a couple of years.

MentorNet – for eight years, Theresa served as a volunteer with this award-winning nonprofit e-mentoring network for diversity in engineering and science. She was a charter member and provided ongoing guidance to eight female undergraduate and graduate students, who all graduated from engineering programs and went on to successful careers.

Junior Achievement – Theresa volunteered for three years in Junior Achievement's Whole School Program at Peachtree Elementary. She was part of a group of EMS Technologies volunteers who gave of their time and talents through the program. Specifically, she taught a class of fifth graders on JA's fixed curriculum, inspiring the youngsters to learn about different jobs and careers and to master basic interviewing skills.

Georgia Tech "Futurescape" Program – For over a decade, Theresa supported this innovative NSF funded program to attract young women into technical fields. She spoke about her work at EMS to more than 600 junior and high school girls during that time. She shared her career experiences as a working engineer and what it takes it to thrive.

Asked about her work inspiring young girls and women into science and engineering, Theresa said, "Women are only 10% of the population of engineers. I'd like to see more women in the



engineering field. You have to talk to them before they start college. I'm partially doing it for selfish reasons; I work with men all day, and I miss the company of women."

5. Please describe the nominee's impact on people through her mentoring capabilities. Please be specific in examples.

- The former VP and chief engineer at EMS summarized Theresa's mentoring work in this manner: "In the fifteen years that I worked with her at EMS Technologies, Theresa showed an unwavering commitment to the professional development of women in engineering. She showed it through participation in on-line mentoring programs, through giving outreach presentations at local universities and through her interactions with other engineers at work. While all of these had positive impacts on many up-and-coming women in technology, I was most impressed with her mentoring of young women engineers at EMS. Her contributions there went from leadership by example - as she tended to hold technical leadership roles on most of the projects she participated in - to helping young engineers develop particular skills, such as using a new design tool or preparing and giving good presentations. Theresa took a special interest and spent lots of her own time helping these less experienced women sharpen their skills and improve their professionalism. Her desire for them to do well was always evident, they could not have had a better mentor and they all benefited immensely from the experience."
- EMS principal engineer xxx has known Theresa since 1995, both as a co-worker and as a supervisor and Microwave Engineering Group Manager from 1999 to 2002. He observes: "Theresa is a recognized leader whose dedication, leadership, and technical expertise I have always admired and used her as an example since the beginning of my career at EMS. When working close to Theresa on programs, I have always seen her take pride in her work and display a strong dedication and commitment to excellence. This was particularly evident to me in her mentoring ability. She provided excellent mentoring to me when, as a new engineer, I needed help in the design of 3dB couplers, ferrite switches, and other microwave components. Later, when I first approached system design, her help in understanding the customer specification requirements and layout of RF system schematics were essential to my success as an Engineering Lead on several programs to come. The best example is the work performed and mentoring that Theresa provided to me during the proposal phase for the COSMO Program X-Band Switch Unit. (COSMO-SkyMed is Italy's earth observation satellite mission.) This XSU consisted of a complex system, including multiple RF hardware, power converters, and driver electronics in a very compact package for space application. She was able to communicate to me in a clear way what I needed to learn and understand in order for me to lead a multidiscipline technical team through what turned out to be one of the most challenging and successful programs at EMS. Besides her leadership and technical abilities, I admire Theresa for her high degree of openness and objectivity to the views of others and for her patience in listening and understanding the personal needs of the employees she supervised while Manager of the Microwave Engineering Group."
- The former director of Georgia Tech's Futurescape Program, and currently a principal research scientist at Signature Technology Labs in Georgia Tech Research Institute, says this: "I worked with Theresa for a five-year period in the Futurescape program. Theresa spoke with groups of 20 girls at a time and was very passionate about this program –



she was always professional, punctual and top of the line to work with. She also was one of our highest ranked speakers. Theresa did a great job in terms of talking both about the technology and the challenges in her career and profession. She also balanced it with what her personal life was like so that she was giving the young girls a well-rounded sense of what it meant to be a woman in technology. What was exciting for me is that some of these kids, who had attended Futurescape when they were in high school and middle school, would get involved as Georgia Tech students. They stated that having been involved in that program influenced their decision to become an engineer. We need more women like Theresa to mentor girls because we know having someone in a technology field who looks like you and shares common experiences with you is a very strong influencer in terms of what you feel you can go and achieve."

6. How, in your opinion, does this nominee foster the mission of WIT, of "promoting the advancement of women in technology?"

Theresa serves as an example, and works to mentor young women to enter engineering as a field. She has done that for all age groups and continues to make a difference in her profession. EMS is proud to count her as one of our best and brightest in a company that prizes its engineering staff and innovation-driven culture.

Nominee's Bio

(limit 200 to 300 words): Please include any honors/awards the nominee has received.



Principal Engineer, Theresa A. Brunasso, has played a key role in the advancement of EMS Technologies' Defense & Space Systems' Engineering Group. An integral part of the senior leadership team, Brunasso currently serves as the division's Director of Technology Development.

Brunasso is a 30-year veteran in the field of Electrical Engineering. While at EMS, Theresa has provided innovative design and development expertise for D&SS heritage programs such as DarkStar, NSTAR, Milstar, Advanced EHF, IntelSat and Mars Science Lab. Her electrical engineering background makes her well suited in

solutions definition and development and the application of that technology in the Commercial and National Defense Space markets.

Theresa joined D&SS in 1989, after serving as a Research Engineer for the Georgia Tech Research Institute (GTRI), one of the nation's leading independent R&D organizations.

Prior to joining GTRI, Theresa spent two years as an Engineer for Teledyne MEC, an international leader in the design, development, and manufacture of high gain broadband amplifiers. Brunasso began her career in the U.S. Navy as an Instructor at the Consolidated Naval Electronic Warfare School in Pensacola, FL. She was awarded a graduate fellowship through the Air Force Thermionic Engineering - Research Program.

Theresa holds an Engineer's Degree and M.E. in Electrical Engineering from the University of Utah, and a B.S. in Physics from the University of West Florida. She is a member of Sigma Pi Sigma, the National Physics Honor Society.

In May 2005, she was the lead EMS author for a U.S. patent application titled, "A Compact Beam Former with Low Side Lobes."