

# SIEMENS

## 2013 Global Smart Machine Safety Networks Company of the Year Award



F R O S T & S U L L I V A N



50 Years of Growth, Innovation & Leadership

## Top 50 Game Changers/Manufacturing Hardware

### Company of the Year Award Smart Machine Safety Networks Global, 2013

The Company of the Year Award is a critical part of Frost & Sullivan's independent analysis and primary research across the Top 50 Game Changers in Manufacturing Hardware (20 companies) and Software (30 companies) Markets. Based on Frost & Sullivan's Vision of the Future of Manufacturing and Production 2.0 (Visi-MAP 2.0) research, this initiative recognizes the vital convergence of critical mega forces that allow manufacturers to innovate, design, and drive next generation manufacturing best practices. Rather than simply holding a ringside spectator's view of industry developments, Frost & Sullivan's vision in undertaking this initiative is to help contribute catalytically to the visionary innovation process.

The below multimedia press release link has detailed information on the Top 50 Game Changers research and analysis:

<http://manufacturing-leadership.frost-multimedia-wire.com/index.php?CID=152>

Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2013 Company of the Year Award for Smart Machine Safety Networks to Siemens AG.

### Significance of the Company of the Year Award

#### Key Industry Challenges Addressed by Superior Innovations and Leadership

Recent awareness of the benefits of global safety standardization and US, EU and Asian safety standard harmonization have led to functional safety being taught, specified and implemented by more and more companies. Due to end-user demand for greater flexibility and global safety standard compliance, Frost & Sullivan independent analysis reveals that the machine safety market is gradually transforming from a component-based offering into an integrated total solution offering, because single-system platforms for safety and automation control are easier and more cost-effective to design, implement and maintain.

Many best-in-class global manufacturers report to Frost & Sullivan that they are planning on integrating their machine safety and automation control systems to simultaneously improve worker safety and manufacturing productivity and reduce manufacturing operations costs through easier troubleshooting and integration with non-safety control systems, better diagnostics and improved modularity and flexibility.

### Key Benchmarking Criteria for Company of the Year Award

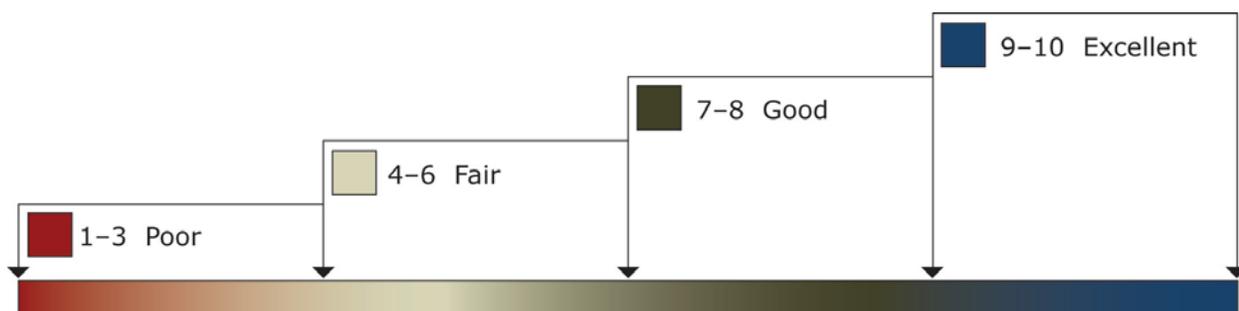
For the Company of the Year Award, the following criteria were used to benchmark Siemens Safety's performance against key competitors:

- **Growth Strategy Excellence**
- **Growth Implementation Excellence**
- **Degree of Innovation with Products and Technologies**
- **Leadership in Customer Value**
- **Leadership in Market Penetration**

### Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies' performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company's performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 2.

**Chart 2: Performance-Based Ratings for Decision Support Matrix**



This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

**Chart 3: Frost & Sullivan’s 10-Step Process for Identifying Award Recipients**



### Best Practice Award Analysis for Siemens Safety

The Decision Support Matrix, shown in Chart 4, illustrates the relative importance of each criterion for the Company of the Year Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor 1 and Competitor 2.

**Chart 4: Decision Support Matrix for Company of the Year Award**

Measurement of 1–10 (1 = lowest; 10 = highest)	Award Criteria					Weighted Rating
	Growth Strategy Excellence	Growth Implementation Excellence	Degree of Innovation with Products and Technologies	Leadership in Customer Value	Leadership in Market Penetration	
<b>Relative Weight (%)</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>100%</b>
<b>Siemens Safety</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>9</b>	<b>9</b>	<b>9.6</b>
Competitor 1	8	9	9	9	8	8.6
Competitor 2	8	8	8	9	8	8.2

### **Criterion 1: Growth Strategy Excellence**

The machine safety market is evolving from a component-based offering into an integrated total solution offering. Frost & Sullivan points out that single-system platforms for safety and automation control are easier and more cost-effective to design, implement, and maintain.

Siemens Totally Integrated Automation (TIA) architecture provides a single automation platform that integrates plant floor-level automation processes with manufacturing execution systems, enabling enterprise-wide process data visibility, security, and control using access protection, role-based availability, and private virtual networks to facilitate collaboration with security. Competitors of Siemens Totally Integrated Automation (TIA) architecture cannot seamlessly integrate all plant floor automation control; therefore, TIA is best suited for applications both in new automation installation and operations and in retrofitting/upgrading existing automation control systems.

### **Criterion 2: Growth Implementation Excellence**

Recent awareness of the benefits of global safety standardization has led more and more global manufacturers to implement functional machine safety. The majority of best-in-class global manufacturers is planning to integrate machine safety and automation control systems in the near future in order to simultaneously improve worker safety and manufacturing productivity and reduce manufacturing operations costs by means of easier troubleshooting and integration with non-safety control systems, better diagnostics, and improved modularity and flexibility.

Siemens Safety Integrated, the company's fail-safe machine safety product line, is integrated with TIA architecture to enable operations risk mitigation and regulatory compliance within a single automation platform and gives manufacturers the ability to create a customized, fully integrated safety system for nearly any manufacturing application, either as a stand-alone for simple automation tasks or as a fully integrated safety solution for comprehensive automation applications.

The Safety Integrated product line includes safety-related modular and PC-based controllers, I/O systems, safety relays, safe drives, machine components, such as position switches, wireless and HMI solutions, and other factory automation products related to safety and is a proven solution that reduces safety control system complexity and installation costs. Its key value is the reduction of costs associated with the design, build, and installation of machine safety control systems, a reduction of approximately 30% in comparison to industry rivals. Currently, not all automation can be seamlessly integrated by competitors.

### **Criterion 3: Degree of Innovation with Products and Technologies**

Over the past several years, safety has emerged from an afterthought to become an integral component in many industrial systems, primarily as a response to new international safety standards, requiring end users, such as machine builders and OEMs, to implement new machine safety technologies. In order to fully leverage the potential of economical and effective choices for machine safety, end users are looking to suppliers of machine safety systems and components to provide new and innovative safety solutions that make machine safety an integral design element. Conventional safety technology has reached its limits here; instead, integrated safety technology is needed with integrated safety functions to create a coherent overall concept for safety.

Siemens' TIA portal enables customers to create, implement, and maintain their own scalable and flexible machine safety solution, leading to shorter lead times and savings for software engineering and control system test and operation, including controller programming, HMI screen development, and network connection configurations. The Siemens Safety website also provides customers with additional information on upcoming safety-related Webinars, Podcasts and Training, customer references, white papers, software downloads, and access to their Industry Mall, from which customers can purchase any of their safety-related products and services. The TIA portal is the platform, that is part of Siemens' strategy to give customers the ability to create and manage a customized Safety Integrated solution.

Siemens has consistently made long-term investments in new products and technologies, as evidenced by the company's multi-billion dollar annual R&D spend. Examples of success include being first-to-market with Siemens' wireless machine safety control solutions 5 years ago and its TIA portal over 2 years ago. The most recent example of this investment in safety technology is the company's Safety Evaluation Tool, free to customers and non-customers alike, which provides rapid assessment and step-by-step user guidance of safety functions in machines and systems in accordance with ISO 13849-1 and IEC 62061, allowing customers to first select configurations and products to be used and then determining whether or not the required safety levels have been met.

### **Criterion 4: Leadership in Customer Value**

Machine Safety is necessary due to a social responsibility to protect people around increasingly complex machinery, as well as in order to meet increasingly stringent common global machine safety standards while maintaining productivity. However, due to globalization, market demands, and sophisticated competitors, end users must constantly improve productivity, which only can be done with innovative engineered solutions on control networks and which includes machine and operator safety.

Safety Integrated is part of Siemens Safety, an industry leader in offering customers and

non-customers alike with safety awareness and education. Siemens Safety provides safety education for the entire manufacturing systems lifecycle, including safety awareness and compliance services using Webinars and newsletters through such industry channels as RIA and ISA, wireless safety compliance training, and its TIA portal, which helps customers create their own machine safety solution. Other machine safety services offered by Siemens Safety are the company's Safety Implementation service; a network of regionally based machine safety applications engineers available for customer consultation; and Siemens Solutions Partners, affiliates trained by Siemens as factory representatives to implement customized Safety Integrated solutions for customers.

Siemens Safety Integrated, combined with its TIA architecture, is a superior solution on the market for US manufacturers looking to expand globally and be cost-competitive, particularly small and mid-sized manufacturers, who make up the true strength of US manufacturing capabilities and are the sector in which the US manufacturing revival needs to occur.

#### **Criterion 5: Leadership in Market Penetration**

Recent changes to global safety standards, including ISO 13849-1 and IEC 62061; increasingly sophisticated competition; and technology advances are leading global manufacturers to consider abandoning their traditional approach of separating safety systems from standard plant automation control systems in order to improve operator safety and overall productivity while continuing to lower production costs. Through education and training offered by safety systems suppliers, many best-in-class global manufacturers are beginning to realize that they can integrate their safety systems with their automation control systems without sacrificing productivity or worker safety.

Siemens engineers understand and consistently monitor the changes in ongoing international safety standards and regulations. No other automation company has greater experience in applying the appropriate safety solution based on the application. The company continues to follow its strategy of delivering flexible and scalable integrated machine safety solutions that increase both operator and manufacturing operations productivity and efficiency. Siemens continuously offers new and innovative machine safety products and services that help their customers manufacture their products faster and safer using globally dispersed manufacturing facilities and associated supply chains.

For 2011, Siemens AG held the largest share of the global machine safety market at 16.4% (per Frost & Sullivan independent research). This is due to Siemens' demonstrated leadership in cost, performance, technology, flexibility, customization, offering a wide product portfolio, after-sales service, consulting, and training services. Siemens Safety has implemented more than 10,000 safety PLCs and over 360,000 safety network nodes worldwide.

## Conclusion

Due to end-user demand for greater flexibility and global safety standard compliance, the machine safety market is gradually transforming from a component-based offering into an integrated total solution offering, as single-system platforms for safety and automation control are easier and more cost-effective to design, implement, and maintain. Siemens continuously offers new and innovative machine safety products and services that help their customers manufacture products faster and safer with their globally dispersed manufacturing facilities and associated supply chains.

Frost & Sullivan firmly believes that Siemens Safety Integrated solutions - integrated with the company's TIA architecture - is currently the best and most cost-effective solution on the market for US manufacturers looking to expand globally and be cost-competitive. This is particularly true for small and midsized manufacturers, who make up the true strength of US manufacturing capabilities. Based on the aforementioned criteria as benchmarked through Frost & Sullivan competitive analysis, Siemens is the recipient of the 2013 Global Company of the Year 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.

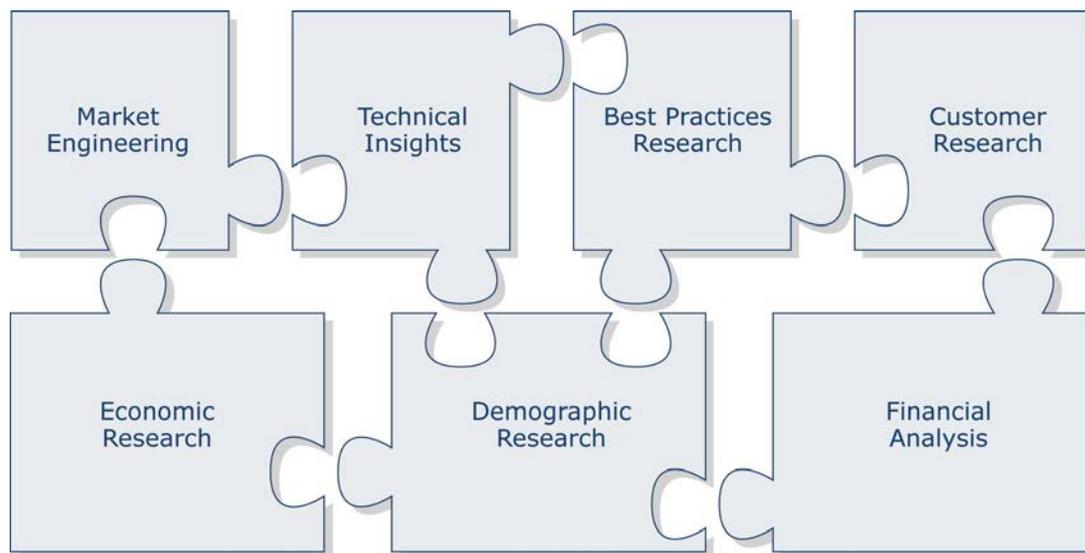
Chart 5: The CEO's 360-Degree Perspective™ Model



## 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 6: Benchmarking Performance with TEAM Research**



## 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>.