

2014 Global Industrial Computed Radiography
New Product Innovation Leadership Award



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



50 Years of Growth, Innovation & Leadership

New Product Innovation Leadership Award Industrial Computed Radiography Global, 2014

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 2014 Global New Product Innovation Leadership Award in the Industrial Computed Radiography market to DÜRR NDT GmbH & Co.KG (DÜRR NDT).

Significance of the New Product Innovation Leadership Award

Key Industry Challenges Addressed by Superior Product Innovations

Frost & Sullivan research has found that in the nondestructive testing (NDT) industry, the transition from conventional film to digital radiography has been one of its biggest challenges. This is due to multiple reasons, yet chief among them are the unavailability of skilled and qualified technicians and lack of a product that provides a workflow similar to film radiography. Since the industry has used conventional film radiography for a number of years, it is reluctant to shift to digital radiography, which has a completely different workflow and skill set requirements.

Frost & Sullivan firmly believes that the company that is best able to successfully overcome these personnel and workflow issues through innovative products is destined to truly succeed in the market.

Key Benchmarking Criteria for New Product Innovation Leadership Award

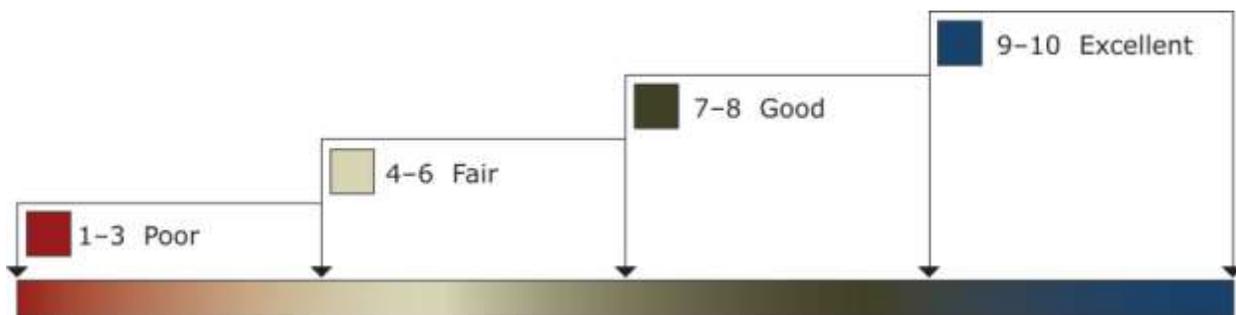
For the New Product Innovation Leadership Award, the following criteria were used to benchmark DÜRR NDT's performance against key competitors:

- Innovative Element of the Product
- Leverage of Leading-Edge Technologies in Product
- Value Added Features/Benefits
- Increased Customer ROI
- Customer Acquisition/Penetration Potential

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 1.

Chart 1: 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 2: Frost & Sullivan's 10-Step Process for Identifying Award Recipients



Best Practice Award Analysis for DÜRR NDT

The Decision Support Matrix, shown in Chart 3, illustrates the relative importance of each criterion for the New Product Innovation Leadership 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 3: Decision Support Matrix for New Product Innovation Leadership Award

<i>Measurement of 1-10 (1 = lowest; 10 = highest)</i>	Award Criteria					
	Innovative Element of the Product	Leverage of Leading-Edge Technologies in Product	Value Added Features/Benefits	Increased Customer ROI	Customer Acquisition/Penetration Potential	Weighted Rating
Relative Weight (%)	20%	20%	20%	20%	20%	100%
DÜRR NDT	9.0	9.5	9.0	9.5	9.0	9.2
Competitor 1	8.0	7.5	8.0	8.0	7.0	7.7
Competitor 2	6.5	6.0	7.0	6.5	6.0	6.4

Criterion 1: Innovative Element of the Product

Since the launch of HD-CR 35 NDT in 2006, DÜRR NDT has set a benchmark in the computed radiography (CR) industry for image quality. Being the only scanner able to provide image quality extremely close to conventional film, the product proved to be a success. In 2013, the company revamped this product offering, keeping the original name, but enhancing the overall innovativeness and functionality of the product, giving end users a reason to transition from conventional film radiography to digital radiography.

The new HD-CR 35 NDT is the lightest CR available in the market, weighing at 17.5 Kg for the scanner alone and 27.5 Kg for the scanner, battery pack, and a transport case for the unit. Its closest competitor, in terms of weight, is available at approximately 27 Kg standalone and approximately 50 Kg with a case. Another innovative feature added to this product that differentiates it from the competition is the 4.3-inch full-color, high-definition

(HD) touch display. Embedding a display in its scanner, DÜRR NDT has taken usability of CR scanners to another level. No other scanner available in the market today provides this capability. The company goes a step further by integrating a mini-PC with the scanner, enabling autonomous operation. This truly revolutionizes flexibility of CR scanners, as the product does not require a laptop or a PC to be connected to it for operation.

Although these features make the HD-CR 35 NDT scanner unique in the market, Frost & Sullivan independent analysis indicates that the most innovative element that stands out in this product is the TreFoc technology developed by DÜRR NDT for this scanner. TreFoc technology provides 3 focal lengths for scanning the different imaging plates, providing the best image quality with the highest signal-to-noise ratio (SNR) in any application.

The weight, embedded display and integrated PC functions of HD-CR 35 NDT provide ultra-portability, making it the ideal solution for field applications. This innovative, feature-rich product also provides enhanced value in production environments.

Criterion 2: Leverage of Leading-Edge Technologies in Product

The HD-CR 35 NDT scanner has unmatched capabilities, packaging features that provide best-in-class image quality to the end user, irrespective of the imaging plate used. This unique capability has been made possible by the proprietary, TreFoc technology. A game-changing technology developed by DÜRR NDT to provide the highest SNR in any application, TreFoc has completely redefined the CR-scanning paradigm.

TreFoc, derived from *tres*, 3 in Latin, and *foc* for focus, provides 3 different focal spot sizes for the laser beam that detects or scans the imaging plate. Any one of these focal spots at 12.5, 25, and 50 microns is used to scan the imaging plate depending upon the application and the imaging plate used. The 12.5-micron laser beam is used to read the ultra-high-resolution blue plate, which has extremely fine grains. The 25-micron laser beam is used to read the high-resolution white plate, and the 50-micron laser beam is used to read the high-speed white plate. Using different focal-spot sizes to scan different imaging plates, highest SNR that the imaging plate's capabilities allow can be achieved. On average, the new HD-CR 35 NDT is able to provide 20 percent higher SNR than before. This is an extremely important achievement of this technology and a requirement due to the recent changes in the standards stipulating a minimum threshold for SNR.

Another important built-in feature of the product is that depending upon the application and imaging plate chosen, the most appropriate laser beam focal spot is automatically chosen. For example, if corrosion under insulation (CUI) application is selected with a high-speed white plate, the scanner automatically selects the 50-micron focal spot laser beam. As such, this technology is quite foolproof, without the need for additional steps in setup.

Criterion 3: Value Added Features/Benefits

In addition to being the lightest scanner in the market, along with embedded full-color HD touch display and integrated mini-PC functions, the HD-CR 35 NDT also packs 32 GB onboard storage. Hence, the operator can save images to this memory storage and transfer them to a computer with the software for further analysis and interpretation. This product also has built-in wireless capabilities, which can connect the product to a network and communicate with other machines in a production environment. The product also has an Ethernet port that can connect the product with a network through an Ethernet cable.

Although the hardware provides value-added features to the end user, DÜRR NDT's D-Tect software completes the puzzle with compelling benefits and unmatched flexibility, such as automatic calibration, easy report generation, automatic setup in accordance with standards for different applications, and images in portable formats. The final image format is among the more important features, as it allows the end user to use the HD-CR 35 NDT in conjunction with software from other manufacturers. The final image is in PNG format, which can be imported to any other company's software for analysis and interpretation. End users nicely have the flexibility of retaining the software - even if the hardware is changed.

Criterion 4: Increased Customer ROI

The HD-CR 35 NDT scanner is a fully functional CR scanner; however, its biggest advantage is its flexibility. Providing an onboard display and integrated mini-PC functions, the product can be used to affirm whether a radiographic shot was taken effectively with sufficient exposure time and achieving minimum image quality indicator (IQI) values. This reduces the risk of a reshoot which provides massive cost savings for the customer, as reshoots can be expensive due to additional time and resource requirements. In addition, these features enable the customer to employ less skillful and less qualified technicians to perform the job of taking radiographic shots. This further reduces the overall wage bill for the customer, as less qualified technicians are cheaper to employ.

With an average cost of \$60,000 for the scanner, the HD-CR 35 NDT is highly cost-effective, but provides features that are not available in the higher-cost-range scanners. With a streamlined workflow and supreme ease of use, the HD-CR 35 NDT provides more superior cost savings than any other competing scanner in the market.

Criterion 5: Customer Acquisition/Penetration Potential

DÜRR NDT's ability to provide a scanner that has a built-in display, mini-PC functions and storage onboard, enabling independent operation as a scanner, delivers the perfect mix for customer acquisition. In a market where customers are apprehensive about transitioning from conventional film radiography to digital radiography, the HD-CR 35 NDT is poised for enormous success. Although, this product was launched recently, the company has already received tremendous response from the market, with numerous demos and pilot units shipped. DÜRR NDT is not only expected to gain a share in the existing CR market, but also to gain a strong hold in the film-to-digital-conversion market. Over the next 3 years, HD-CR 35 NDT is expected to accelerate the film-to-digital-radiography transition by a minimum 10 percent.

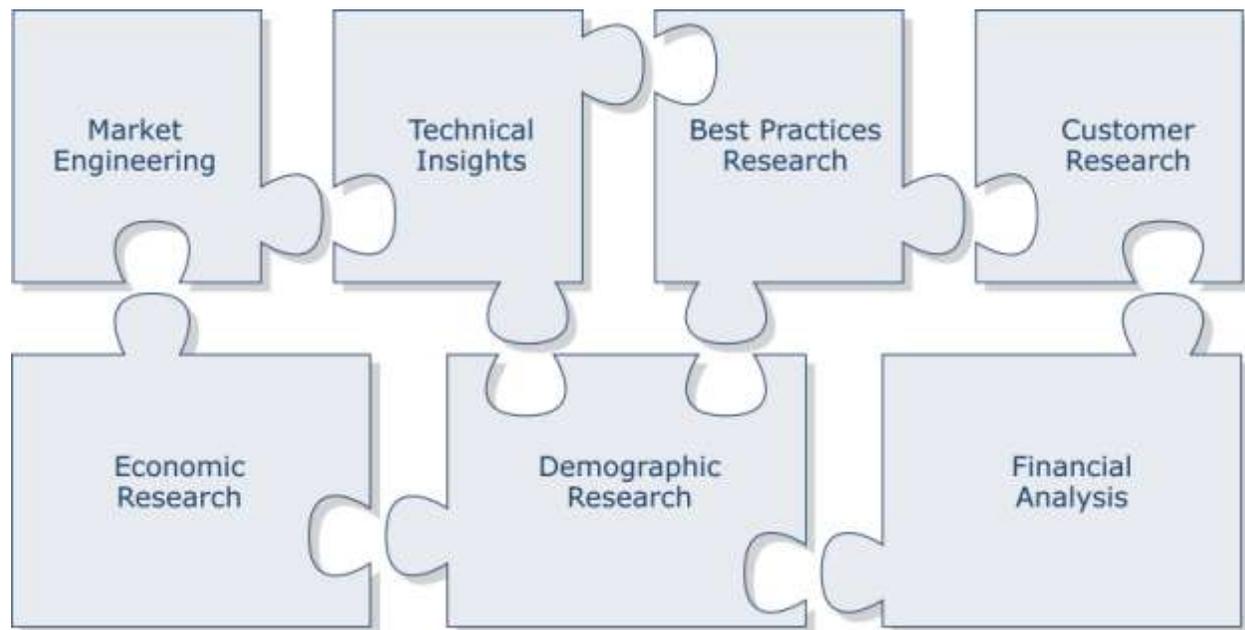
Conclusion

Built with the ultimate goal of providing a smoother transition from conventional film radiography to digital radiography, the HD-CR 35 NDT provides the perfect mix of features to attain this goal. Capable of being used in field applications and production environments, the product's ultra-portability is among its most valuable features. Although the new HD-CR 35 NDT was launched recently, it has already received tremendous response from customers. DÜRR NDT's innovative TreFoc technology has added a new dimension, providing best-in-class image quality and the highest SNR in the market. Integration with a display, mini-PC functions, and storage enables the scanner to be used independently, without the need to connect it with a workstation. Due to DÜRR NDT's excellence in combining a unique set of features with innovative technology to match market and customer requirements, Frost & Sullivan is pleased to announce DÜRR NDT as the most deserving recipient of the 2014 Global New Product Innovation Leadership Award.

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 4: 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>.