

## Quality Management Systems

### Cascade Microtech Lays for Process Maturity Level 5 With ISO9001 Certification from TÜV Rheinland

#### BACKGROUND



Cascade Microtech Inc. (NASDAQ: CSCD) is a leading expert at enabling precision measurements of integrated circuits at the wafer level. The company's more than 800 customers include some of the largest semiconductor manufacturers in the world. They use Cascade Microtech's products to perform engineering and production tests of a wide variety of devices: from digital signal processors to graphics processors and application-specific integrated circuits.

#### BUSINESS CHALLENGE

To ensure effective and efficient operations for the benefit of the customer, supplier and stakeholder, Cascade Microtech embarked on a journey to achieve process maturity level 5 (PML5). The ultimate goal of PML5 is to realize highly predictable and continually improving core processes. The foundation for achieving that vision was a well-documented, well-executed quality management system with clear and meaningful metrics, i.e., a system qualified to earn an ISO9001 certification.

Additionally, ISO9001 is often a mandatory requirement for international semiconductor capital equipment suppliers. As the company's location in Dresden had already acquired an ISO9001 certification, Cascade Microtech moved to have its Beaverton, OR, location certified to ensure that it consistently met the needs of its customers and other stakeholders.

#### SOLUTION AND RESULTS

As a starting point for developing the PML5 culture of optimal processes and continual improvement, Cascade Microtech conducted the global Yellow Belt training in customer-centric process design and structured problem solving. The Lean Six Sigma approach allowed the company to clearly identify the needs of customers and suppliers and come up with a strong methodology for developing and applying metrics. The metrics enabled Cascade Microtech to monitor the process outputs for compliance with targets as well as provided valuable insights into factors affecting the process outcomes.

As the next step, Cascade Microtech focused on developing an effective quality system. The company's quality personnel defined the basic building blocks for running an organization; the quality system's elements as outlined in the ISO9001 standard; and the purpose and objectives of the process. Other elements of the process design included policies, definitions and lines of communication; roles and responsibilities; and training requirements and methods. The company worked with an ISO consultant to finalize its quality management system.

Upon completion of the ISO-required and additional quality processes, Cascade Microtech performed one comprehensive and two special internal audits to test and validate that the processes were executed correctly and met their objectives. The company also conducted process performance reviews with process owners to look for improvement opportunities, reviewed the metrics for adequacy and adjusted as necessary.

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### SOLUTION AND RESULTS CONTINUED

When Cascade Microtech was ready for the third party to examine the results of its hard work, the company contacted TÜV Rheinland, a premier global provider of independent testing and certification services. Cascade Microtech was looking to work with qualified professionals who could provide an objective analysis and overview of the quality system's strengths and weaknesses. "We worked diligently to resolve a few challenges but were anxious to get an objective feedback and guidance from a third party to help us make those areas more effective," said Steve Zagarola, Director of Quality for Cascade Microtech. TÜV Rheinland's auditors Lisa Greenleaf, Director, Business Field Systems, and Curtis Harvey, Lead Auditor, conducted stage one audit to verify that the organization's quality system was ready for the rigorous evaluation.

They followed with stage two audit, during which they examined the system's design, metrics and execution. Processes audited and certified included the product life cycle process, order generation, order fulfillment, post-delivery support, product non-conformance, supply chain management, and supporting processes. "The auditors were wonderful: professional, thorough, insightful and constructive," said Zagarola. "They were as happy to lavish praise on our system as they were to suggest improvements. Nice, sober

balance of candid feedback about what works and what does not."

The audit determined that Cascade Microtech's quality system was in place and gaining maturity at its Beaverton location. The system – which included processes spanning engineering, marketing, customer and manufacturing operations, and finance and human resources – was designed to scale for growth objectives. TÜV Rheinland issued one minor finding and a few improvement recommendations. The manufacturer addressed the finding immediately and began implementing recommended improvements. "The approach employed by Cascade Microtech embodies management commitment by involving all levels of the organization and empowering individuals to make appropriate, data driven decisions," said Greenleaf. "There is a strong underlying management system that provides the necessary structure, and this is supported by a process approach model that prevails throughout the manufacturing process." After many months of building and implementing the system, the ISO9001 certification afforded a great moral boost to the employees, who felt proud and validated. "Both the benefits of an effective quality system and the formal recognition are very important to our employees and customers and, therefore, critical to our success," said Zagarola. "It was great having TÜV Rheinland's objective assessment to help us complete a robust quality system sufficient to meet our growth objectives."

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