Quality for life.

Quality for life.

In 2009, Xilinx customers counted on our long-held commitment to quality-driven innovation to meet increasingly stringent product requirements in a broad range of markets, including aerospace and defense; automotive; consumer; industrial, medical and scientific; and wired and wireless communications.

In the face of the worst economic downturn in recent history, world-class systems companies placed their bets on fewer, highly differentiated product designs and adopted cost-effective, flexible, programmable technologies to fuel low-cost innovation. In short, programmability became an imperative for today's companies to effectively compete in a global economy increasingly driven by fickle, fragmented consumer markets and relentless demand for hyper-connectivity and mobility.

Against this backdrop, Xilinx employees united with our worldwide network of suppliers and partners in a common mission to not only meet, but exceed customer expectations, taking our quality programs and processes to the next level. We kept our promise to deliver increasingly sophisticated, feature-rich programmable platform solutions and services with superb quality — on time, every time.

Moreover, we stepped up that commitment with the delivery of base, domain-specific and market-specific Targeted Design Platforms that allow software and hardware designers to jump-start their designs, freeing them to focus design talent on product innovation and differentiation.

In our 2009 Quality Annual Report, you'll gain insight into the philosophy, programs and results of our quality initiatives over the past year. Just as important, you'll learn more about our goals for 2010, as we continue to improve quality for the life of Xilinx® solutions — silicon, software, intellectual property, services and support — and the inventive products our customers bring to market.

We're proud to report that Xilinx and our customers embodied a spirit of innovation in the face of turbulent economic, technological and market conditions throughout this past year. This same spirit led to the invention of the programmable chip 25 years ago by Xilinx founder and 2009 National Inventors Hall of Fame inductee Ross Freeman. And it's alive today within Xilinx employees and customers who, like Ross, have the courage to imagine and create the 'impossible.'

Moshe Gavrielov

President & CEO
Xilinx, Inc.

Vincent Tong

Senior Vice President, Quality & New Product Introductions
Xilinx, Inc.
Board of Directors, Global Semiconductor Alliance

THESE ELEMENTS COME TOGETHER ON OUR COVER TO REPRESENT HOW XILINX PRODUCTS IMPACT THE QUALITY OF OUR DAILY LIVES: **AN EYE DIAGRAM, A FAMILY AND A BOARD**. THE EYE DIAGRAM IS A KEY MEASUREMENT OF QUALITY AND SIGNAL INTEGRITY WITHIN OUR INDUSTRY. WE USE IT HERE AS A WINDOW TO LOOK WITHIN THE XILINX BOARD AND REVEAL THE LIVES THAT ARE ENRICHED THROUGH OUR PRODUCTS.

XILINX MARKET-DRIVEN QUALITY

Xilinx programmable chips are the innovation platform for tens of thousands of products that affect the quality of our everyday lives, powering a wide range of applications for wired and wireless communications, consumer electronics, medical instrumentation, automotive systems and aerospace exploration. As much as our technical leadership contributes to the success of these products, quality is a fundamental differentiator for our company and our customers.

The Xilinx Quality Mission

At Xilinx, we have a relentless commitment to delivering innovative programmable platform solutions and services with superb quality — on time, every time.

Customers, Commitment and Culture are the cornerstones of our quality philosophy. These are the guiding forces of our quality mission and shape how we execute to

the highest standard of quality, placing our customers' definition of quality first throughout the product development and delivery process.
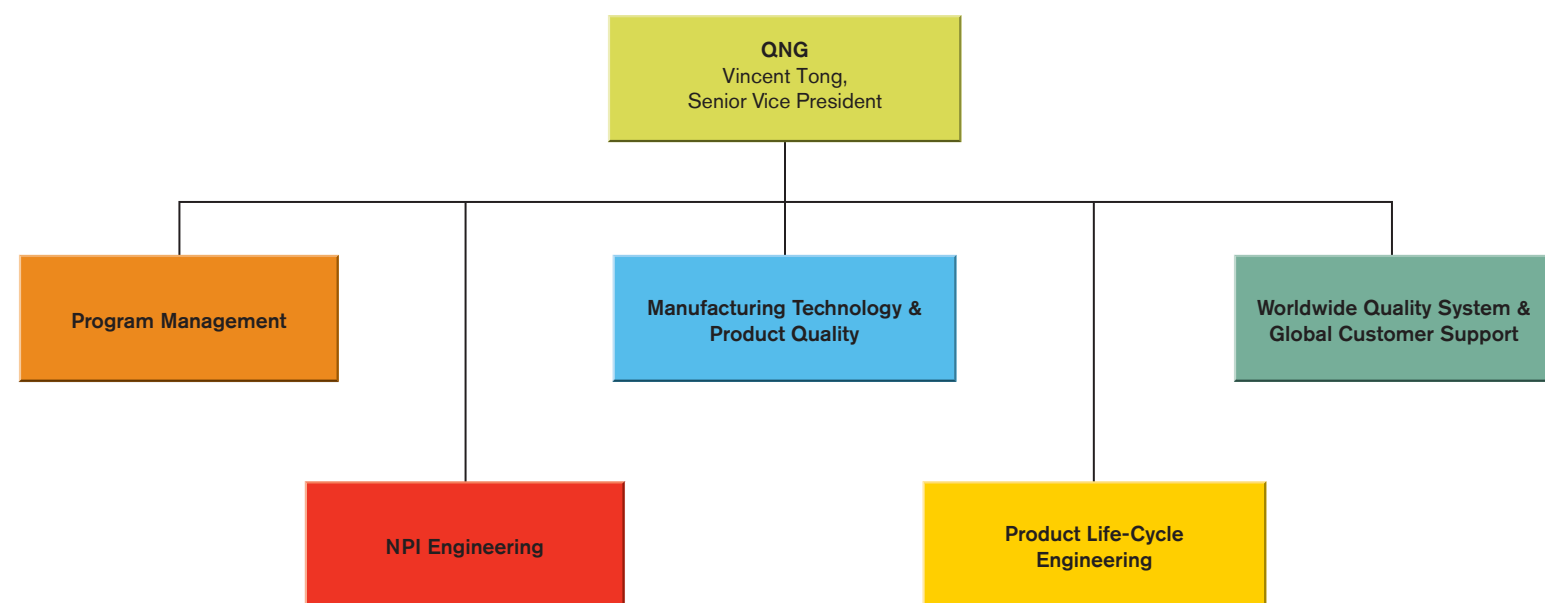
Customer-Driven Quality

Customers are the starting point for a closed-loop process that ensures exceptional interaction and accountability. In 2009, we expanded our Voice of the Customer program to

reflect the growing diversity of our 20,000 customers and to better understand the complex technical and dynamic business challenges they face in bringing products to market.

Quality scorecard ratings are at an all-time high. Every product-return transaction is automatically surveyed, with ~30 percent of the customers providing feedback. Our software and IP customer satisfaction survey provides release-

by-release analysis of 48 functional elements, which allows us to prioritize future improvements.
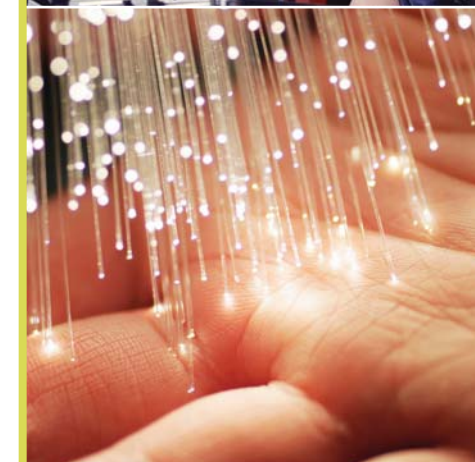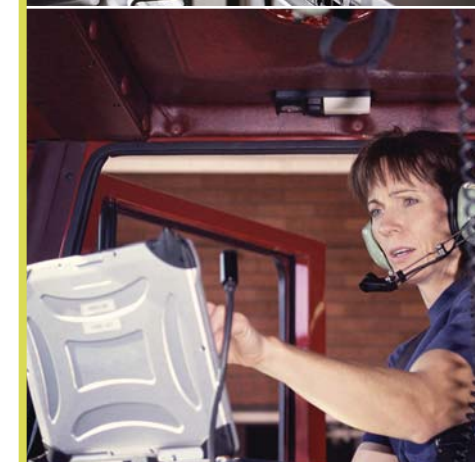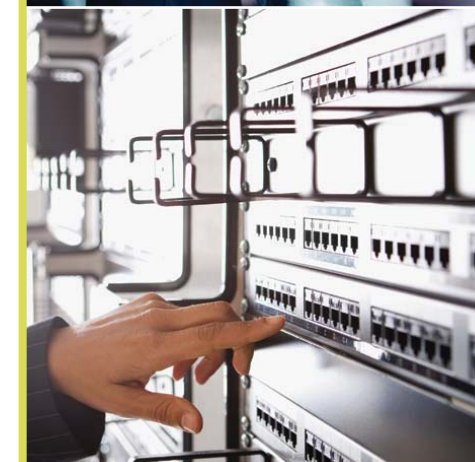
Commitment at All Levels

Quality touches every single Xilinx employee. In 2009, we reaped the benefits of a global organization with built-in operational synergies among silicon, IP and software product development teams. Our new product evaluation (NPE) and new product introduction (NPI) processes are now production proven and delivering world-class results with our Virtex®-6 and Spartan®-6 FPGA families and platforms.

Culture of Continuous Improvement and Innovation

Quality processes and products permeate every aspect of our company, extending directly into the hands of our customers. A relentless focus on setting new standards for 'platform-level' quality yields greater customer confidence, while deepening our understanding of market-specific requirements. The advantages of market-driven quality can be seen today with our Xilinx Automotive (XA) and aerospace-and-defense product lines. And, by raising the bar with zero-defect programs across all products, platforms and markets, both Xilinx and our customers benefit.

WORLDWIDE QUALITY & NEW PRODUCT INTRODUCTION GROUP (QNG)

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                    QNG
                Vincent Tong,
             Senior Vice President

Program        Manufacturing Technology &      Worldwide Quality System &
Management     Product Quality                  Global Customer Support

   NPI Engineering            Product Life-Cycle
                              Engineering
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Xilinx Quality for Life in Communications

LEADING THE MARKET
- Wired/wireless communications is the largest market for Xilinx FPGAs
- World-class FPGA technology with high-quality IP, wafer-level reliability and high-performance 'greener' packaging

SCALING THE NEXT WAVE IN TELECOMMUNICATIONS
- Common platform for baseband and radio development of multimode wireless base stations
- Enables high-reliability voice, video and data services for 3GPP-LTE, WiMAX, W-CDMA/HSPA, CDMA2000 and TD-SCDMA
- Serial connectivity portfolio scales from low-cost systems to 100GE applications and beyond
- Supports nearly 40 protocols, including XGEMAC, XAUI and RXAUI, Tri-mode Ethernet MAC, Ethernet AVB, SPI-4.2 and SPI-3 link

BUILT FOR QUALITY COMMUNICATIONS
- ISO 9001 certified since 1999, first PLD supplier certified to TL 9000
- Greater than 99 percent test coverage in FPGA manufacturing
- Higher-quality customer applications with zero-PPM programs
- Strict environmental compliance (WEEE, RoHS, REACH)

"In 2009, Xilinx was the first FPGA company to be recognized with the ZTE Best Technological Cooperation Award. ZTE is becoming a global company, and product quality is a key factor in the cooperation with tier one operators. Our goal is to partner with core suppliers such as Xilinx who can provide high-quality, advanced technology."

QINGFENG FAN
EXECUTIVE VICE PRESIDENT
ZTE

QUALITY THROUGH INNOVATION

Simply put, our platform approach makes it easier to use programmable solutions, providing the flexibility to adapt quickly and the freedom to innovate. Built with quality from the ground up, Xilinx Targeted Design Platforms enable companies to meet the application requirements of dynamic markets, slash development time by as much as half compared with traditional design methodologies and focus engineering resources on creating greater product differentiation.
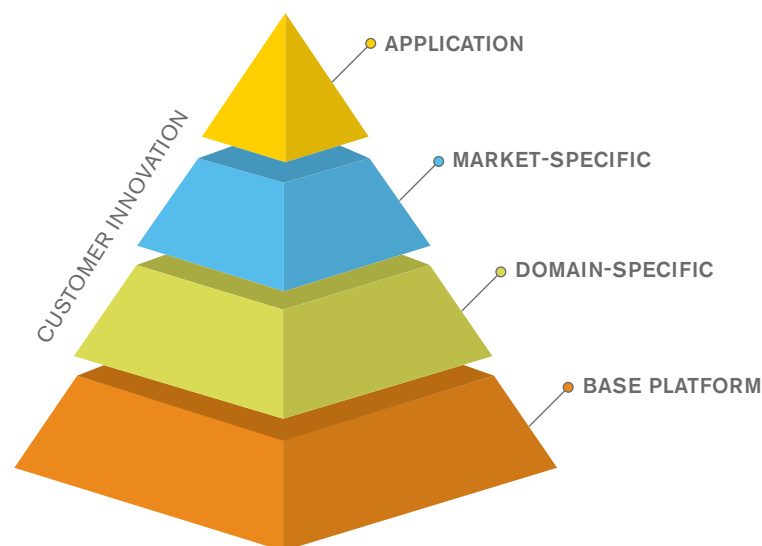
Expanded Portfolio of Programmable Platforms

We've taken quality to a new level in the past year by introducing Virtex-6 and Spartan-6 Targeted Design Platforms, an expanded portfolio of Xilinx and third-party IP, new domain-optimized design environments and a series of scalable development kits, altogether offering:

- *Broadest range of logic capacity, with up to 760K logic cells, more than 38 Mbits of Block RAM and 2,000 DSP slices*
- *High-speed serial solutions optimized for I/O bandwidth, power and cost*
- *Integrated system blocks, power management techniques and low-voltage device options*
- *Common architecture and more than 100 IP cores and reference designs supported across FPGA families and platforms*

- *Unified board strategy based on the FPGA Mezzanine Card (FMC) standard to simplify design and integration of specialized IP, components and daughter card extensions*

Building on the base platform, we're able to rapidly deploy domain-specific Targeted Design Platforms optimized for connectivity, embedded and digital signal-processing designs, as well as market-specific Targeted Design Platforms that

simplify the development of cost- and power-sensitive electronic products with the Spartan-6, and high-performance, compute-intensive applications with the Virtex-6.

Quality Products by Design

Every new project begins with a thorough and rigid quality strategy for product development. Building on the success of Virtex-5, we've delivered the same level of quality with Virtex-6 and Spartan-6 in 30 percent less time.

Our NPE/NPI process now extends beyond silicon to software tools and IP products. Development builds are aligned with silicon NPE/NPI for predictable release timing. We apply rigorous integration metrics to ensure quality performance and user productivity with our Targeted Design Platforms.

To strengthen the Xilinx development ecosystem, we work closely with our third-party IP and service providers. Established leaders in their respective markets are screened for business practices and technology (completeness, quality and optimization). We also evaluate IP providers for competency on Xilinx technologies and give them elevated levels of technical support.

XILINX TARGETED DESIGN PLATFORM SOLUTIONS

APPLICATION

MARKET-SPECIFIC

DOMAIN-SPECIFIC

BASE PLATFORM

CUSTOMER INNOVATION

Designers Focus On Value-add and Differentiation

QUALITY THROUGH TECHNOLOGY LEADERSHIP

Xilinx Virtex-6 and Spartan-6 FPGA families raise the industry bar for programmable solutions, offering the widest range of capacity, features and performance at the most competitive price points. Not only did we hit each milestone with a high degree of precision, but we established metrics for market introduction and quality performance.
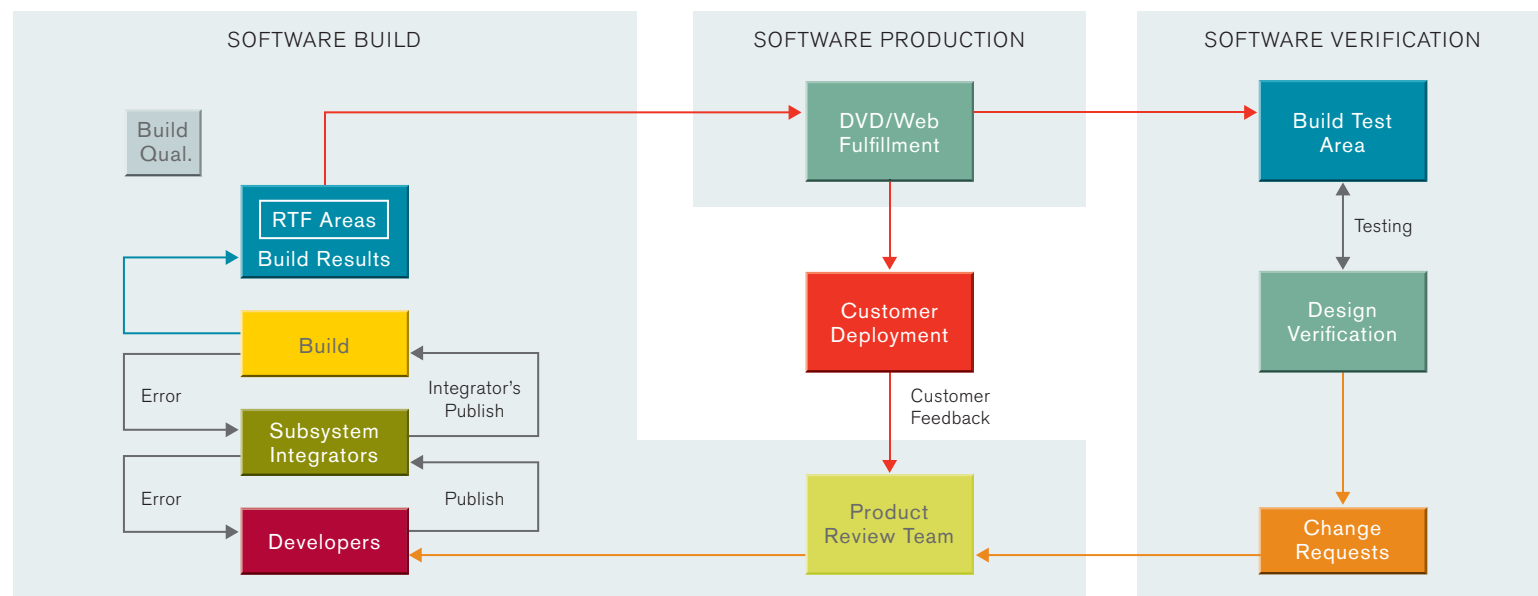
Achieving High Quality of Results Faster

Across the spectrum of technology performance and quality metrics, Virtex-6 and Spartan-6 FPGAs boast the same high quality as previous-generation Virtex and Spartan devices. We built in greater levels of design collaboration across functional groups to achieve high quality of results faster. For example, product

test pattern teams developed screening tests for production in half the time with world-class coverage levels. We also identified and addressed problems earlier, prior to silicon tapeout, reducing back-end debug complexity.

These new device families exploit advanced process technologies to deliver higher bandwidth and more performance while consuming less power:

- *30 percent lower static and dynamic power consumption than the previous generation*
- *15 percent higher performance and 15 percent lower power consumption compared with competitive 40nm FPGA offerings*
- *Low-cost options with 50 percent lower static power and 40 percent lower dynamic power on average than previous generations, with 1.0V device options that can also reach zero power during 'hibernate power-down' mode*

Taking Quality to the System Level

With the introduction of the Virtex-6 and Spartan-6 FPGA families, Xilinx has taken quality to the system level.
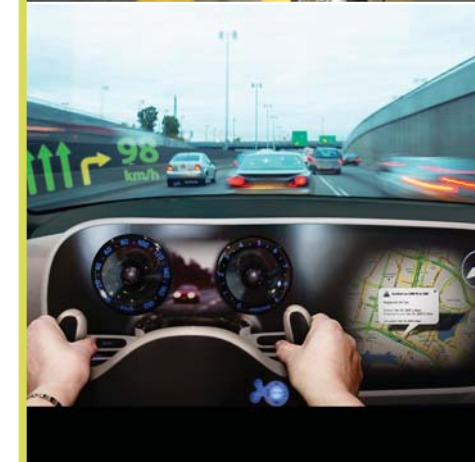
We have implemented a series of process, tool and IT infrastructure changes to create a quality-driven, integrated software development and IP process across the range of design domains and markets we support. Our software build methodology increases automation, improves repeatability and stability of releases, and integrates more upfront code qualification. Our build convergence time is down to one day from 10 days. All ISE® Design Suite products can be delivered worldwide within 36 hours of final build.

These quality-driven improvements culminated in the delivery of higher-quality, fully interoperable tool flows and design configurations specifically tailored to the needs of logic, embedded, DSP and system-level designers with the release of ISE Design Suite 11.

IP verification in 2009 improved with the introduction of a unified verification methodology that uses industry-standard modeling techniques for stimulus, correctness and coverage analysis, and incorporates this data into fully documented verification strategies and test plans. The resulting IP components are tested for conformance to all applicable industry standards.

INTEGRATED SOFTWARE DEVELOPMENT PROCESS

Xilinx ISE Design Suite Software Production System Architecture

Xilinx Quality for Life in Automotive

GOING BEYOND SILICON
- World's leading PLD supplier to the automotive market
- Complete XA family of AEC-Q100 qualified FPGAs and CPLDs
- System-level platforms for infotainment, driver assistance and driver information applications

DRIVING THE EXTRA MILE FOR QUALITY AND RELIABILITY
- Devices operate over extended temperature ranges
- Failure rate of less than 1 PPM across XA product line*
- Less than 10 FIT over the life of the product
- Exceeded expectations with 1 FIT for XA Spartan-3 FPGA products (90nm)
- Built with 20-year life cycle model

COMMITTED TO AUTOMOTIVE EXCELLENCE
- Largest PLD supplier to hold ISO 9001, ISO 14001 and ISO TS 16949 registrations
- Only PLD company with both TL 9000 and TS 16949 certifications
- Supports vehicle networking standards including MOST®, CAN®, APIX®
- RoHS-compliant and lead-free packaging

Based on return data for calendar year 2009

"For the past 10 years, Harman has worked closely with Xilinx as a programmable logic supplier, always experiencing a very stable, high level of quality. In the rare case that issues arise, Xilinx responds instantly and supports Harman directly in the analyses, on-site as needed. We look forward to extending our relationship with Xilinx as a best-practice example."

ROLAND KOHLMEYER
VICE PRESIDENT, PREVENTIVE QUALITY
HARMAN BECKER AUTOMOTIVE SYSTEMS GmbH

QUALITY THROUGH MANUFACTURING EXCELLENCE

Xilinx has been at the forefront of the world's leading-edge manufacturing processes across 10 generations of programmable devices. Building on our success at 65nm, we've continued to raise the bar for device-level quality at 45/40nm with aggressive silicon margin, defect density and testability targets. This effort has resulted in higher-quality preproduction silicon releases and products delivered on time to meet customer development schedules.

Superior Supply Chain Quality Management

At this level of complexity, quality processes take on an even more critical role.

Our engineering teams continue to focus on stronger supplier execution, given the greater variability of smaller geometries. We rely on an outsourced model for fab, assembly and testing, working directly with domain experts to improve operational efficiencies and tap into their world-class quality expertise.

These strategies have reduced development cycles and minimized the risk of quality problems in the field — all built upon engineering characterization of our products, with more than 450 million data points collected.

Exhaustive Product Qualification

Through this exhaustive product qualification, we were able to validate design performance and tune production results for faster delivery to our early customers. Xilinx customers expect higher quality and reliability levels, in terms of early-life failure rates (ELFR). ELFR qualification follows JEDEC and AEC-Q100 guidelines augmented with advanced test methods, including elevated and dynamic voltage stress (EVS/DVS) to drive higher quality through tighter process variance, tighter performance windows and better reliability.
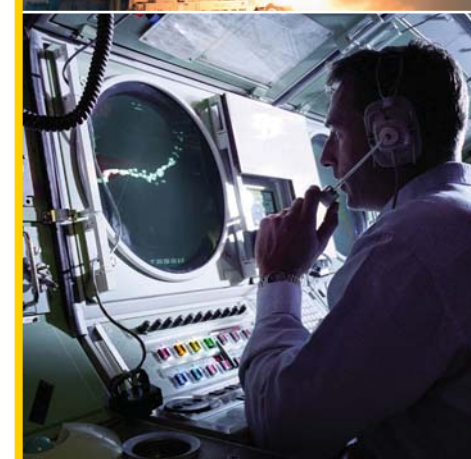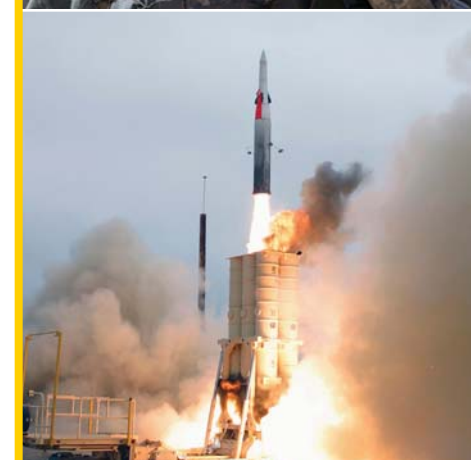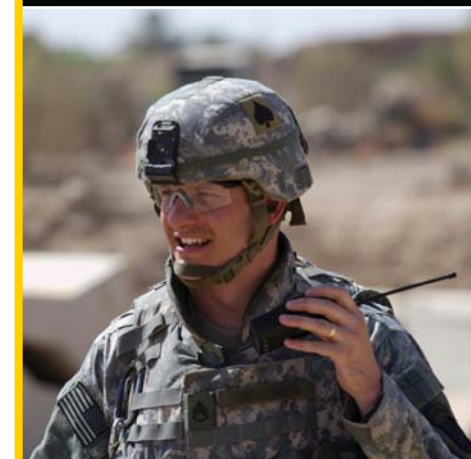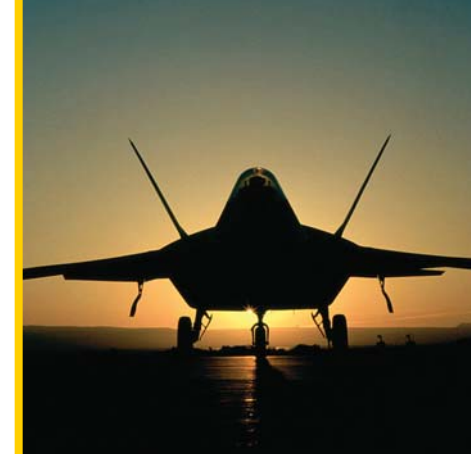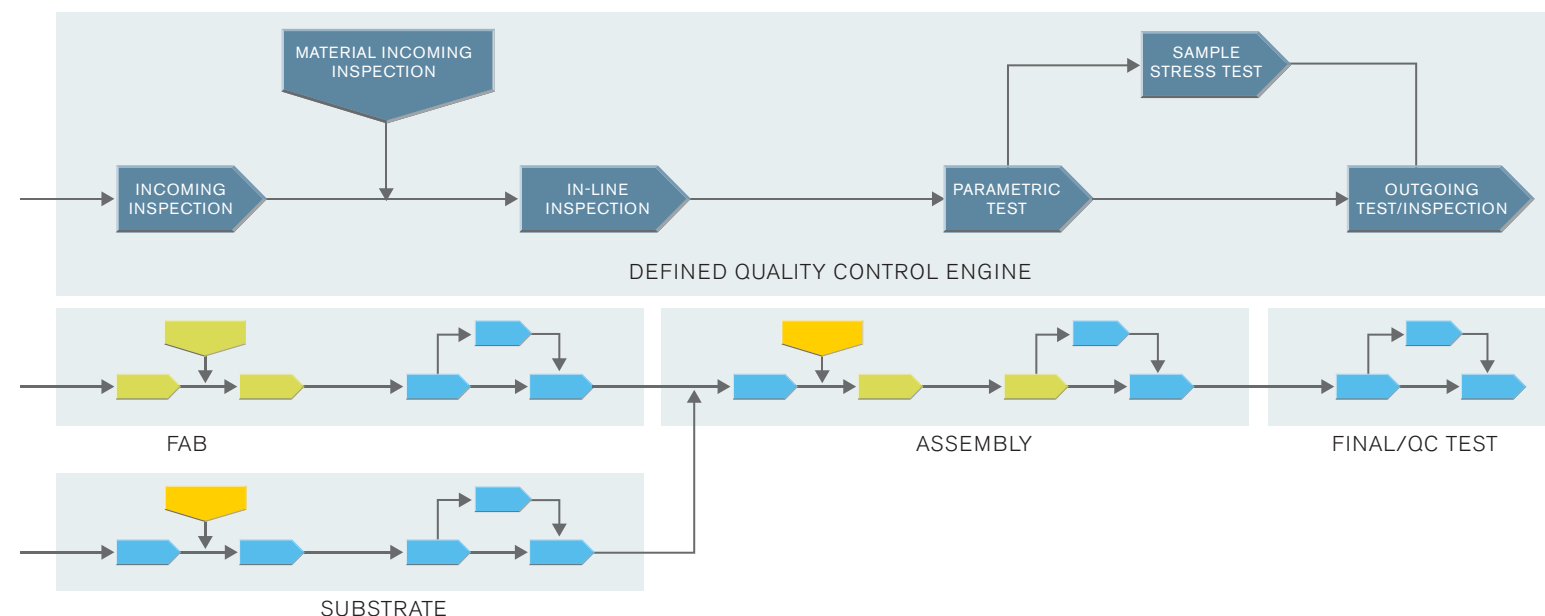
Tighter process controls and additional monitoring in assembly address defect reduction and excursion prevention by screening out latent defects to ensure industry-leading low failure rates. These techniques, along with part average testing and spatial outlier elimination, result in higher quality and fewer supply disruptions.

At the Leading Edge of Quality Trends

Anticipating significant trends such as design-for-test (DFT), design-for-manufacture (DFM), electrostatic discharge (ESD) protection and anti-counterfeiting is also a vitally important aspect of Xilinx quality programs.

Smaller geometries required to deliver increased performance make it more difficult to protect devices from ESD, due to thinner oxides, lower breakdown voltages and high-performance I/O. To mitigate these risks, Xilinx works directly with customers and contract manufacturers to comply with standards from ESDA, JEDEC and AEC organizations.

QUALITY MANAGEMENT SUPPLY CHAIN

DEFINED QUALITY CONTROL ENGINE

INCOMING INSPECTION · MATERIAL INCOMING INSPECTION · IN-LINE INSPECTION · PARAMETRIC TEST · SAMPLE STRESS TEST · OUTGOING TEST/INSPECTION

FAB · ASSEMBLY · FINAL/QC TEST

SUBSTRATE

Xilinx Quality for Life in Aerospace & Defense

HERITAGE OF TRUST, RELIABILITY AND INNOVATION
- Two decades of continuous service
- First to market with MIL-STD-883 qualified FPGA
- Highest-performance, largest-capacity defense and space-grade devices
- Only radiation-tolerant FPGAs in full production
- First and only single-chip cryptography for secure and reliable communications

WORLD-CLASS QUALITY AND RELIABILITY
- Less than 1 PPM across the entire XQ product line*
- Less than 10 FIT over the life of the product
- Leader in managing soft-error effects with more than 40 patents

SETTING THE INDUSTRY STANDARD
- QML and ISO 9001 certified since 1997
- MIL-PRF-38535 QML-Q certified, QML-V certification pending
- PURE and STACK certifications achieved in 2009
- Testing meets or exceeds JEDEC JESD89A and IEC TS 62239 standards
- High-assurance design for U.S. RTCA/DO-254 and EUROCAE/ED-80 standards

Based on return data for calendar year 2009

"Xilinx is a qualified, primary FPGA vendor at all locations and divisions for PURE organization members, including SAAB, Thales, Sagem Defence & Security and Centre National d'Études Spatiales (CNES). The company has met all the PURE qualification criteria (AEC-Q100/TS16949 similar) for aerospace and defense applications. We're impressed with Xilinx's state-of-the-art quality systems and processes, in addition to its proven track record over more than two decades in meeting the stringent requirements of our industry."

BOO JANSSON
PURE AUDITOR (PEDs Used in Rugged Environments)
COMPONENT ENGINEER, COMPONENT & ELECTRONICS PACKAGING
SAAB BOFORS DYNAMICS AB, SWEDEN

QUALITY THROUGH WORLD-CLASS SYSTEMS

It takes world-class systems and processes to sustain the quality level and continuous improvement that drive innovation. Xilinx works closely with the semiconductor supply chain and industry leaders in the markets we serve to implement quality programs that scale with our next-generation programmable technologies and maximize the benefits of the fabless semiconductor model for our customers.

A Legacy of Leadership & Supply Chain Innovation

As one of the first fabless semiconductor companies, Xilinx has a 25-year legacy of working with the semiconductor supply chain. Our quality-and-reliability system is built on an integrated fabric of customer service, supplier management and quality management processes that we regularly audit and enhance to keep pace with the sophistication of our latest-generation devices and Targeted Design Platforms.

Supplier Quality Management

We implement supplier quality management (SQM) across the supply chain to integrate, monitor and control quality throughout all stages. We review supplier scorecards quarterly. Quality engineers located throughout the United States, EMEA and Asia have direct access to in-line data. Expert engineering teams drive quality improvements that provide lasting value to our suppliers.

We've improved and expanded our advanced SQM control systems, including the launch of specialized engineering data portals delivering near-real-time data from each of our key suppliers. This data enables defect density reduction, process defect modeling, spatial outlier elimination, part average testing, maverick control, commonality analysis, signature analysis and the active management of process capability and control conditions. With more accurate analysis capabilities, our engineers can deliver value to customers and drive more effective collaboration with suppliers. These 'quality engines,' combined with our culture of continuous improvement, fuel our drive to deliver a flawless customer experience.
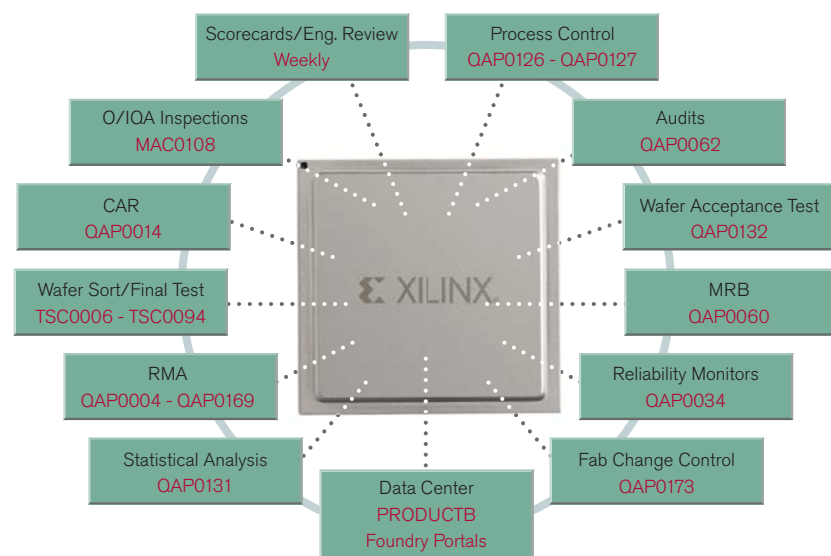
System-level Quality & Reliability

At Xilinx, we go beyond technology to address the system-level quality and reliability standards that are critical to our customers in their respective markets. We meet stringent semiconductor industry and market-specific certification requirements, including STACK and PURE certifications awarded in 2009.

Xilinx is the only PLD supplier with both TL 9000 and TS 16949 certifications (and was the first to achieve TL 9000). We are also the first fabless company to achieve TS 16949 certification, often required of automotive suppliers.
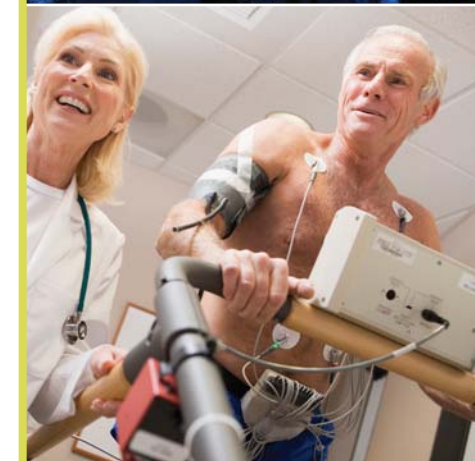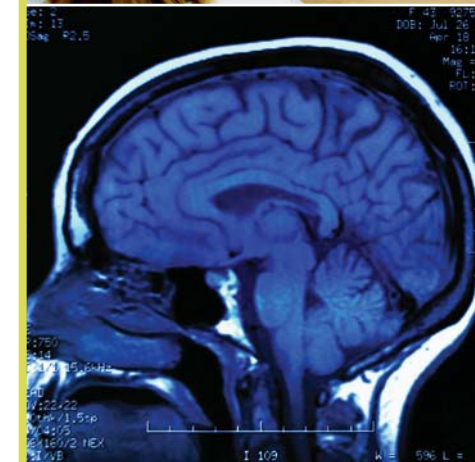
Many companies claim to comply with standards through self-assessment or supply chain relationships. Xilinx believes that being held to a higher standard ensures a higher quality of results.

GOAL-DRIVEN QUALITY SYSTEM DESIGN

Scorecards/Eng. Review — Weekly
Process Control — QAP0126 - QAP0127
O/IQA Inspections — MAC0108
Audits — QAP0062
CAR — QAP0014
Wafer Acceptance Test — QAP0132
Wafer Sort/Final Test — TSC0006 - TSC0094
MRB — QAP0060
RMA — QAP0004 - QAP0169
Reliability Monitors — QAP0034
Statistical Analysis — QAP0131
Fab Change Control — QAP0173
Data Center — PRODUCTB Foundry Portals

Xilinx Quality for Life in Medical Electronics

ENABLING NEXT-GENERATION PRODUCTS
- Leading-edge FPGA technology with highest levels of quality, fidelity and accuracy
- Rich mix of system blocks, hard IP and connectivity for highly integrated medical diagnostic, monitoring and therapy applications
- Optimal balance of features, low power and low cost for home-based medical devices

REPEATABLE PERFORMANCE, PROVEN QUALITY
- Production-proven silicon with commercial and automotive-qualified product lines
- Less than 1 PPM across both product lines*
- Less than 10 FIT over the life of the product

ROBUST RELIABILITY STANDARDS
- Full reliability qualification of all new devices, wafer processes and packages
- JEDEC Solid State Technology Association reliability test methods for packaged devices
- Group B and D tests follow DSCC, MIL-STD-883 and AEC-Q100 specifications
- STM5.1-2001/MIL-STD-883E and EIA/JESD78 specifications for ESD and latch-up results

Based on return data for calendar year 2009

"As one of the world's leading producers of medical diagnostic systems, Esaote is well established as a Europe-based leading ultrasound manufacturer and internationally acknowledged to be the world leader in dedicated MRI. In our industry, quality is of the utmost importance and for more than 15 years we've counted on Xilinx as a trusted supplier to meet our high standards of excellence."

PIETRO AMORETTI
SUPPLY CHAIN AND PRODUCTION MANAGER
ALBERTO BERTINI
ULTRASOUND R&D MANAGER
ESAOTE GROUP

QUALITY THROUGH BEST-IN-CLASS SUPPORT

Quality doesn't end when a Xilinx customer takes delivery of a device or platform. In fact, that's when the focus on maximizing customer satisfaction and success goes global. Xilinx offers a complete range of best-in-class services and a dedicated team of engineers to support customers in every locale and time zone around the world.

24/7 Access to Customer Service & Support

In response to customer feedback, we've expanded traditional support programs into broader-reaching, Web-based systems that have delivered an impressive 21 percent reduction in product quality issues through improved management of customer returns. These include automated return materials authorization (RMA) processes and 24/7 access to Web content through on-demand answer databases, real-time discussion forums and an array of instructor-led classes and e-learning options.
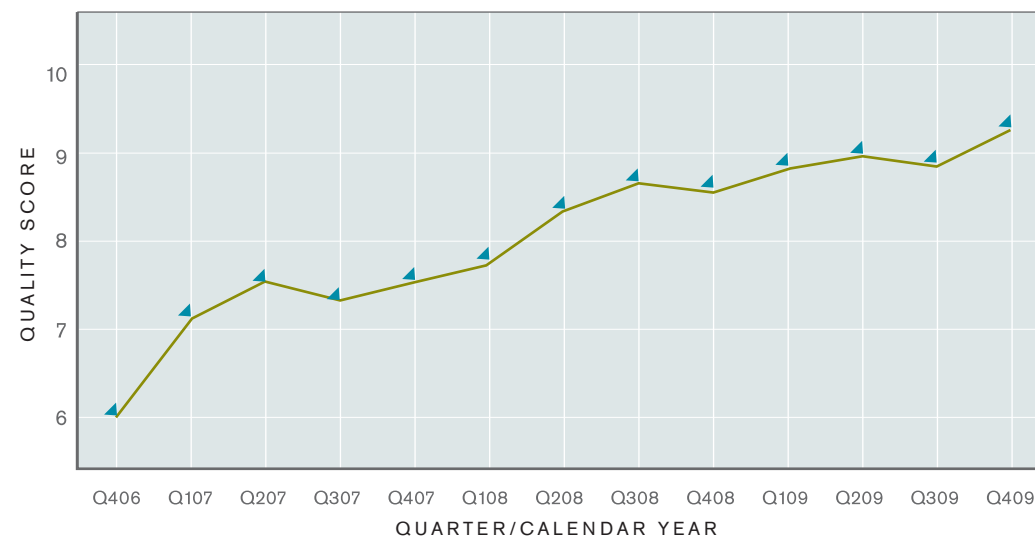
We have invested in new programs to identify root causes of common customer problems. Methods for deploying training and sharing best practices include design checklists, collaborative design reviews and product qualification techniques. To support this effort, we have launched a standardized process to provide customers with manufacturing corner material for more rigorous design validation and manufacturing qualification.

Customer scorecard data in 2009 revealed a steady increase in our quality ratings, with nearly half the participating companies experiencing a significant improvement in quality. While many scorecard respondents reported a failure rate of less than 10 PPM, fully half of our largest customers reported zero defects. We are especially proud of these truly superior results, which are a testament to the strength of our partnerships with customers and suppliers.

INCREASING CUSTOMER SATISFACTION & QUALITY AWARDS

ANRITSU
TOP SUPPLIER AWARD, 2009
BROCADE
QUALITY EXCELLENCE AWARD, 2009
DATANG MOBILE
CORE PARTNER AWARD, 2008
GENERAL DYNAMICS
STRATEGIC SUPPLIER AWARD, 2008
HARMAN BECKER
TOP 10 PERCENT SEMICONDUCTOR SUPPLIER AWARD, 2008
HUAWEI
CORE PARTNER & MOST VALUED SUPPLIER AWARDS, 2008
GOLD SUPPLIER AWARD, 2009
MOTOROLA
PREFERRED SUPPLIER AWARD, 2009
SONY
QUALITY AWARD, 2008
SPIRENT
SUPPLIER OF THE YEAR, 2008
TELLABS
PERFECT 20/20 QUALITY SCORE, 2008
ZTE
BEST SUPPLIER AWARD, 2008-2009
BEST TECHNOLOGICAL COOPERATION AWARD, 2009

QUALITY SCORE vs. QUARTER/CALENDAR YEAR (Q406, Q107, Q207, Q307, Q407, Q108, Q208, Q308, Q408, Q109, Q209, Q309, Q409)

TAKE THE **NEXT STEP**
VISIT US ONLINE AT **WWW.XILINX.COM**

For more information on Xilinx and its
Targeted Design Platforms, visit:
www.xilinx.com/quality