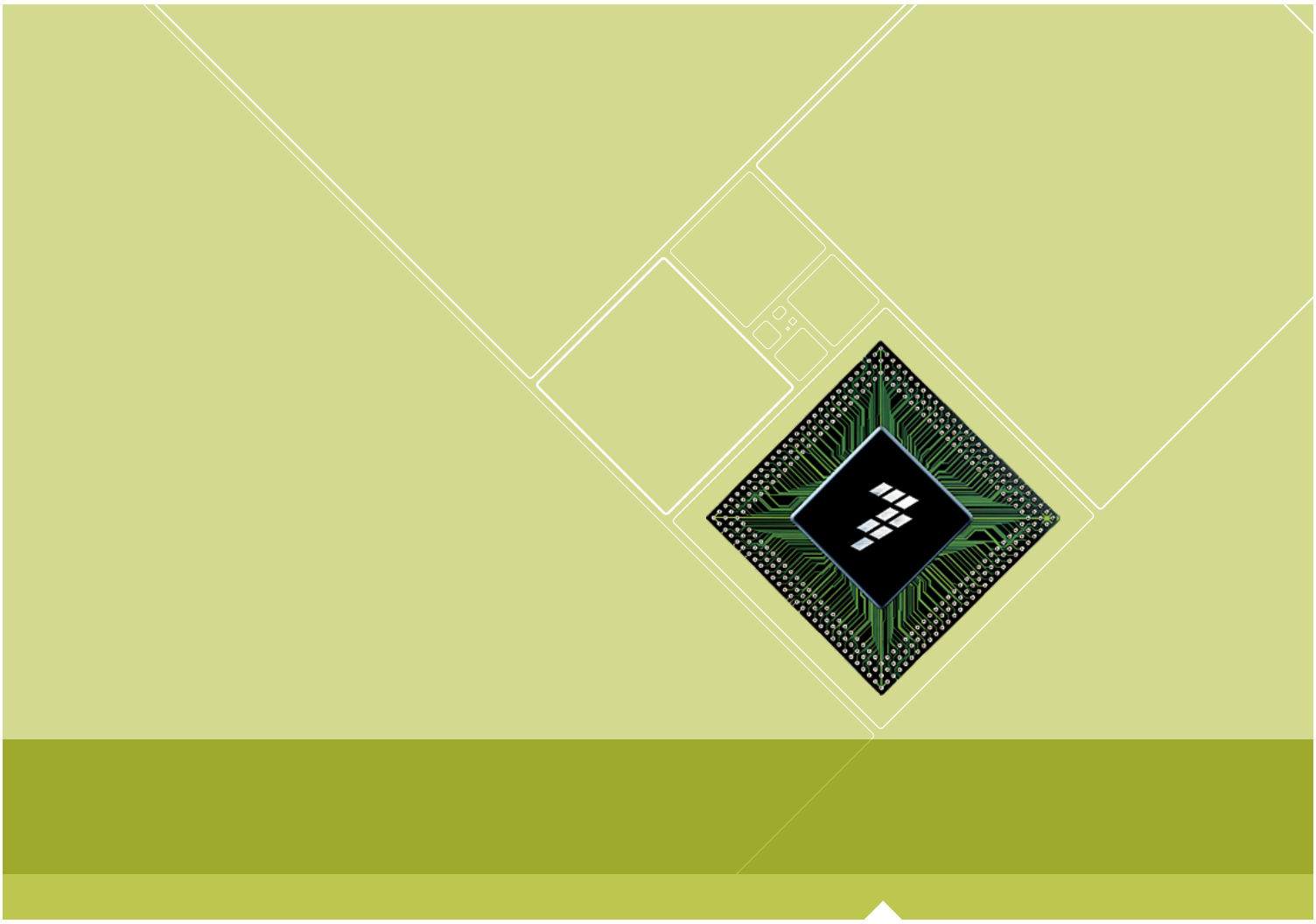

Quality by Design

Billions of Freescale products power and connect lives across the globe. From product concept to customer ship, our quality system helps ensure that every solution is safe, cost-effective and reliable.

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Quality Policy

At Freescale we are committed to be the finest semiconductor company in the world by providing the highest levels of product quality, delivery and service, as viewed through the eyes of our customers. Freescale is passionate in our relentless pursuit of total customer loyalty by instilling a global high quality culture that results in manufacturing excellence and flawless new products.

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Quality Pledge

Quality by Design

Freescale's pledge is to be the benchmark in product quality for our customers.

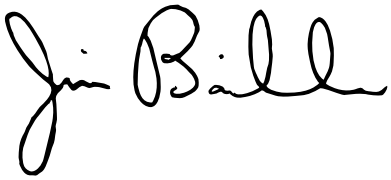
We work closely with customers to understand and comply with their specific quality requirements. Customer and our own quality requirements are introduced at the concept phase of each new technology and product introduction. **Zero Defect** and **Design for Quality** processes, practices and methodologies are embedded in each development and manufacturing phase of the new product introduction to ensure our quality standards and goals are met. We ensure that all parts of the organization deliver the quality pledge through clear processes, metrics and attention to detail.

You may experience a rare quality problem, in which case we promise prompt, professional resolution through our customer returns and quality incident solution programs.

Our goal is to ensure customers trust us and want to work with us because of our commitment to product quality and customer satisfaction.

We have been creating high-quality products for 50 years and will continue to build our brand based upon our quality pledge.

Sincerely,



Jim Baillie

Vice President, Quality

Quality Management, Organization, Responsibilities and Information Systems

1. Quality Management

Quality management is focused on customer expectations to drive satisfaction in every aspect of our relationship with them. Strategic quality planning is performed by the corporate quality staff, which defines quality strategy, quality goals, improvement approaches and initiatives. These are reviewed by the corporate leadership team for validation and resource commitment. Executive quality review is chaired by the CEO with the participation of his direct reporting staff, and led by the VP of Quality. Meetings are held every month to review key quality results, the status of quality initiatives and new improvement opportunities.

2. Quality Organization

Freescale is organized in a matrix structure with solutions groups/divisions, supply chain organization, corporate sales organized by regions and corporate support functions. The quality organization is centralized under corporate business operations and led by the VP of Freescale Quality. Quality organization structure is a matrix that includes the following:

- Global group/division quality focused on product quality and quality interface with customers. This includes customer quality, field quality, new product introduction (NPI) quality and software quality.
- Die manufacturing and technology quality focused on quality of manufactured products and quality of new technologies and packages
- Quality labs comprised of product analysis labs, reliability labs and calibration labs
- Supplier Quality
- Quality Systems that include quality standards and bodies

There are three regional teams that provide Freescale worldwide coverage.

3. Quality Responsibilities

Responsibilities for the core quality functions include:

- Customer Quality: Drive identification of root cause of quality issues and execution of product quality improvements through preventive or corrective actions.
- External Quality: Interface with final manufacturing subcontractors and foundries for quality-related tasks, audits and incidents. This is the primary interface for outsourced quality items.
- Failure Analysis Lab: Perform electrical and physical product analysis to support new product development, customer issue resolution and manufacturing effectiveness improvements. Provide an expert voice in new product development teams.
- Field Quality: Interface with customers for quality-related tasks, audits and incidents. This is the primary interface for customer quality items, and collects and summarizes customer quality data to drive improvement within Freescale.
- Manufacturing Quality: Provide support and voice of customer for internal manufacturing sites regarding change management, discrepant material and product qualifications. Overview and perform quality audit activities, provide expert knowledge with quality tools and methods and ensure quality of manufactured products.
- NPI Quality: Drive quality into product development activities and ensure that new product releases meet customer and standards requirements. These activities ensure the quality and reliability of new products, qualifies new materials and new products and performs reliability engineering for all NPI qualification definitions and new product qualifications.
- Quality Standards and Bodies: Voice Freescale's position and interests within industry standard bodies. Communicate within Freescale industry standard trends and changes (planned or actual).
- Quality Systems: Manage Freescale quality rules, process structure and documents. Coordinate internal and certification audits. Lead continuous improvement activities. Ensure that customer-specific requirements are available and understood.
- Reliability Lab: Operating life and environmental stress labs used to validate long-term reliability of Freescale products.
- Software Quality: Drive quality into software development activities and ensure that new software releases meet customer and standards requirements.
- Supplier Quality: Drive supplier quality improvements and handle supplier audits, data collection and analysis and quality related items, including issues and changes.

4. Quality Information Systems

A suite of quality information systems have been developed over time to allow effective and efficient operation of Freescale quality processes. These tools are now becoming global and support has been centralized under the information technology team. These tools are used by quality associates and all users of quality processes within the corporation. A multi-year program was launched in late 2006 to develop integration of these systems and enhance data reporting and data mining capabilities. Systems integration will improve data integrity by accessing data from a unique corporate repository. The main focus of the quality information systems improvements initiative is on easy access from a quality portal, user friendliness, simplified and more flexible workflows, easy access to data through specific dashboards, certified reports, easily accessible ad hoc reporting, data mining and fast response times. These improvements are led by quality client champions driving global user teams and supported by IT business analysts. A process is also in place to define and implement small enhancements in support of continuous improvement.

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Quality Certifications

Raising the Standards

System certifications are important to our business. We have a long history of quality system improvement and verify the effectiveness and health of our system on a regular basis against global standards. We're proud of our certifications, developed by the International Organization for Standardization (ISO), whose standards contribute to improving the development, manufacturing and supply of products and services worldwide. By adopting and adhering to these standards, we raise the levels of quality, safety, reliability, efficiency and adaptability in our products.

A Global Impact

Freescale's manufacturing operations and automotive business units are certified to ISO/TS 16949. This technical specification aligns existing U.S., German, French and Italian automotive quality system standards within the global automotive industry. These operations also are certified to ISO 9001.

In our commitment to leading the industry in environmental, health and safety issues, and in accordance with ISO 14001, we conducted an environmental aspect and impact assessment. Our ISO 14001 Management Systems are designed to meet and exceed regulatory requirements, with certified manufacturing operations in the United States, Scotland, France, Japan, China and Malaysia.

Freescale ISO 9001 and ISO/TS 16949 certificates can be viewed here.

For more information about Freescale ISO 14000 certificates, click here.

Process Reliability

Employing a Process Certification Strategy

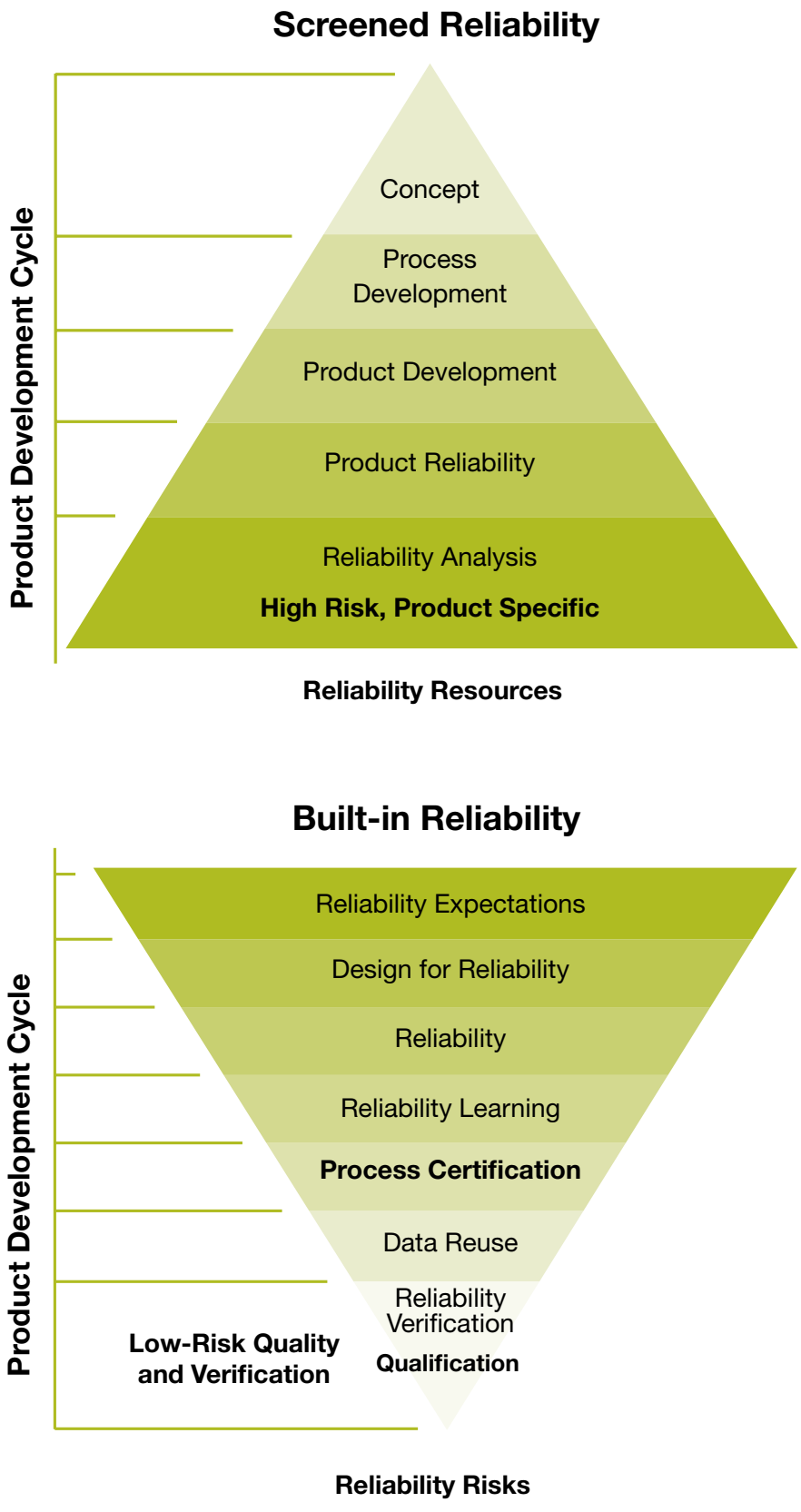
Freescale considers our customers' needs for reliability, cost and schedule a top priority. That's why we use a process certification strategy to build reliability throughout our product development cycle. Our process certification process directly aligns with our new product introduction process so that quality can be assessed and assured in each stage of our development cycle.

Product reliability can either be screened-in after a product has been manufactured or be built-in from the beginning. A screened approach is not desired since there is little reliability input in the early concept and design phases of the product development cycle. With this approach, reliability resources must be focused on the reliability characterization just before the product shipment and any reliability issues can only be addressed with additional burn-in or other screens at the end of the product development cycle.

Freescale has found that building in reliability reduces reliability risks and resources. Reliability expectations are defined during the product concept phase and are used to drive reliability in the design phase of the product development cycle. Reliability testing is focused on early learning to identify important failure modes and to drive reliability improvements during the product development cycle. Using this approach, product qualification becomes low risk and requires fewer resources to verify the reliability that has already been built-in. By building in reliability, we have a clear understanding of reliability risks before products are introduced to customers, and we can better address customer reliability needs and concerns.

Integrating Reliability into New Products

Freescale uses a phased process to manage new technology introduction. Technical and business goals are assessed before moving to a new phase in development. These phase gates also include specific and detailed reliability criteria. The reliability risks for technology implementation are reduced as the technology progresses through the development cycle. Thus, the reliability risks for a new product can be assessed from the maturity of the underlying technologies. These are real measurements of risk characterized throughout the development cycle and applied to specific product applications.



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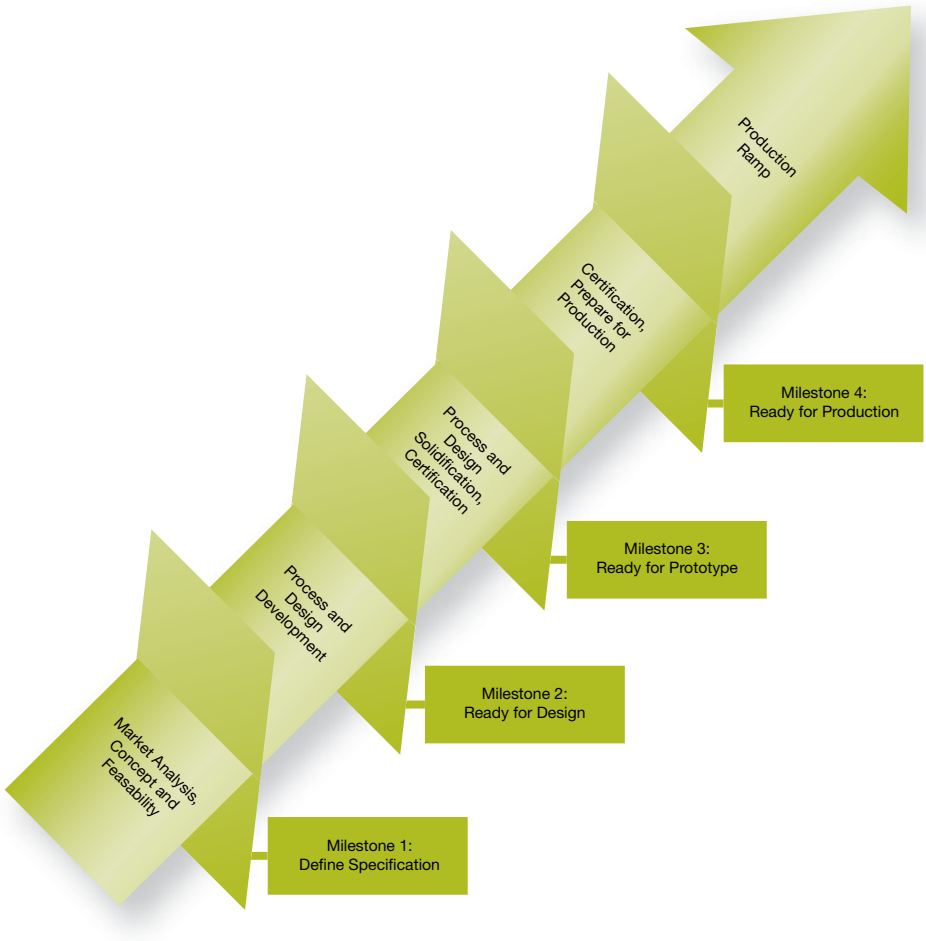
Reliability First and Foremost

Reliability certification is used to demonstrate the reliability of a technology even before the first product is built. Before a product enters the design phase, we use test vehicles to try out critical library elements and bit cell designs. Reliability stresses are performed on these test vehicles, and failures are fully analyzed using the same criteria as actual product. This allows us to gather information and to identify key reliability issues that must be addressed for product qualification. Pre-certification uses a subset of full reliability stresses to assess risks even earlier in the technology development cycle.

We also employ models—based on technology maturity and product parameters—to determine the manufacturing, test and burn-in conditions that will be required to meet reliability requirements for a specific product. By using rigorous criteria for process certification, and aligning design and manufacturing maturity, we ensure that our reliability learning applies directly to our customers' product reliability.

Building in reliability allows us to better understand reliability expectations and to appropriately define test vehicles and stress criteria for process certification.



Low Risk, Big Gains

Building in reliability also creates a substantial database of findings that can be applied to many products. After product qualification, test results are fed back into our reliability models to refine them. Each subsequent qualification then builds upon the learning of previous certifications and qualifications. We continually update our reliability processes and techniques to more accurately quantify reliability risks and improve product reliability early in development.

The end result is a reliability verification that is simpler, more cost effective and better focused on customer satisfaction.

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Product Qualification

Performance for the Long Term

Reliability is the probability that a product (e.g., semiconductor device) will perform its specified function in a given environment for a specified period of time. We must not only be concerned about quality as our products leave our doors, but also be concerned about product reliability as our products are used in specific environments over time.

Tiered Qualification

In order to appropriately assess product reliability over a range of product applications, we use reliability tiers set according to operating conditions (such as application, speed, power, temperature, lifetime and duty cycle) and reliability (such as early failure rate, failures in time and wear out) during product qualification. Standard tiers are defined for the commercial, industrial and automotive markets, based on the standards set by the Joint Electron Device Engineering Council (JEDEC) and other industry standards.

Requirements for performance and reliability are balanced for both commercial/consumer and industrial markets; automotive tier products also must meet the requirements set by the Automotive Electronics Council. In response to specific customer requests, custom reliability requirements may also be considered.

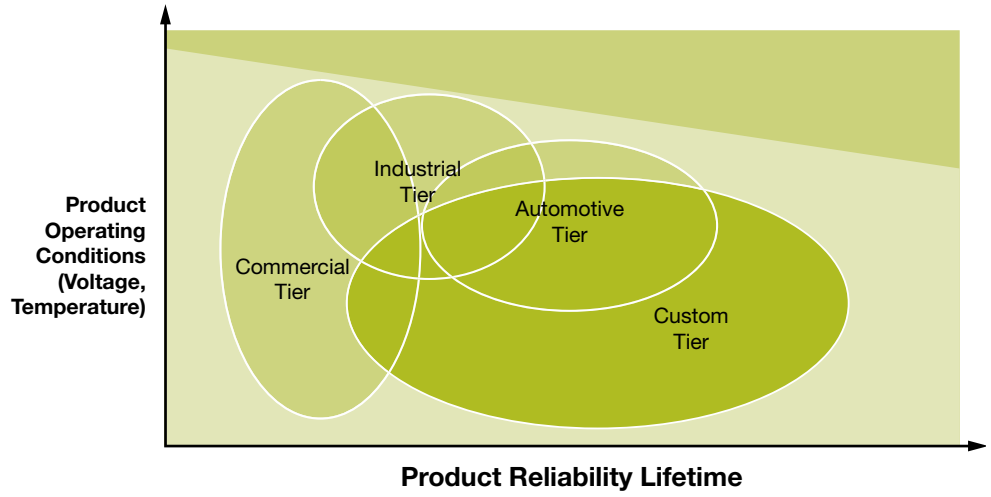
Put to the Test

Semiconductor failure rate is known to follow a "bathtub curve" with an initially decreasing failure rate followed by a long, low-level failure rate and then eventual wear out. We perform stresses to characterize each part of this curve. Test and burn-in are used to screen infant mortality (or early product failures), and thus, reduce the early failure rate. Extended life tests are performed to verify the intrinsic limits of devices that result in wear out.

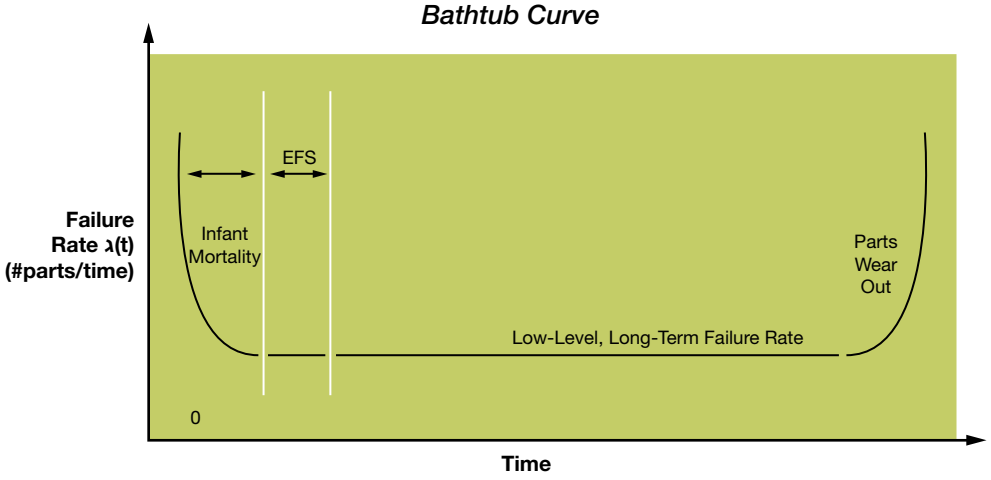
Because the failure rate of semiconductor devices is inherently low, the industry uses accelerated testing to assess semiconductor reliability. During accelerated tests (such as those described in JEP122, a JEDEC standards publication), elevated stress conditions (voltage, temperature) are used to produce, in a shorter period of time, the same failure mechanisms as would be observed under normal use conditions. The objective is to identify failure mechanisms and eliminate them as a cause of failure during the useful lifetime of a product.

Freescale product reliability rests on a strong foundation of proven validation principles. Our prequalification efforts—including designing, modeling, testing and test vehicle investigations—drive low-risk manufacturing processes. We use industry standard testing to ensure our customers have reliable products appropriate for their specific application.

Typical Freescale accelerated stress tests performed during product qualification are shown in the tables to the left and are based on JEDEC standard JESD22 methods specified in JESD47, another JEDEC standards publication.



Product Failure Behavior
Bathtub Curve



Freescale Stress Tests

Accelerated Stress Test	Industry Standard Method	General Notes	Qualification Readpoint		
			Commercial Tier	Industrial Tier	Automotive Tier (AEC-Q100)
High-Temperature Operating Life Test (HTOL)	JESD22-A108	Acceleration factors are determined per JEP122; typically performed at 125˚C	5-year equivalent use time	10-year equivalent use time	1008 Hours (125˚C) or 408 Hours (150˚C)
Electrostatic Discharge (ESD)					
Human Body Model (HBM)	JESD22-A114	Typically characterized at various voltages	+/-2000V (or Classification)	+/-2000V (or Classification)	+/-2000V or MM (or Classification)
Machine Model (MM)	JESD22-A115		Optional Test +/-200V (or Classification)	Optional Test +/-200V (or Classification)	+/-200V or HBM (or Classification)
Charged Device Model (CDM)	JESD22-C101		Optional Test +/-500V (or Classification)	Optional Test +/-500V (or Classification)	+/-750V corner pins, +/-500V other pins, (or Classification)
Latch-up (LU)	JESD78	Class I for Comm/Ind, Class II for Auto	+/-100 mA (or Classification)	+/-200 mA (or Classification)	+/-100 mA (Class II)
Preconditioning (PC)	J-STD-020	For surface mount plastic packages only	Performed prior to THB, HAST, T/C and AC		
Temp and Humidity Bias (THB)	JESD22-A101	For surface mount plastic packages only; PC is performed prior to this test; HAST is an alternate to THB	504 Hours (or Biased HAST)	1008 Hours (or Biased HAST)	1008 Hours (or Biased HAST)
Highly Accelerated Stress Testing (HAST)	JESD22-A110		48 Hours (or THB)	96 Hours (or THB)	96 Hours (or THB)
Temperature Cycling (T/C)	JESD22-A104	If PC is required, PC is performed prior to this test	200 Cycles (-65˚C to 150˚C) or equivalent cycles at other temperatures per JESD94	500 Cycles (-65˚C to 150˚C) or equivalent cycles at other temperatures per JESD94	500 Cycles (-65˚C to 150˚C) or 1000 Cycles (-50˚C to 125˚C)
Autoclave (AC)	JESD22-A102	For surface mount plastic packages only; PC is performed prior to this test	Optional Test 48 Hours	Optional Test 96 Hours	96 Hours (or 96 Hours Unbiased HAST)
High-Temp Bake (HTB)	JESD22-A103	No bias	Optional Test 504 Hours (150˚C) or 240 Hours (175˚C)	Optional Test 1008 Hours (150˚C) or 504 Hours (175˚C)	1008 Hours (150˚C) or 504 Hours (175˚C)
Data Retention Bake	JESD22-A117	Non-volatile memory only	504 Hours (150˚C) or 240 Hours (175˚C)	1008 Hours (150˚C) or 504 Hours (175˚C)	1008 Hours (150˚C) or 504 Hours (175˚C)
Write/Erase Cycling	JESD22-A117		Qualification readpoint determined per data sheet requirement		

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Product Analysis

Detectives in a Nanotech World

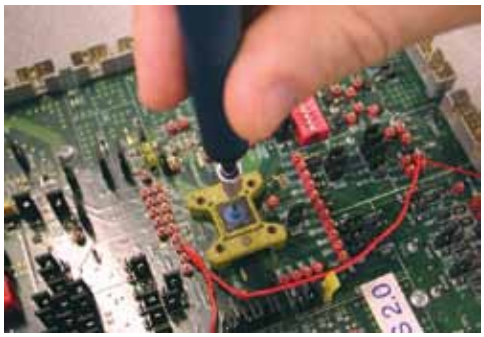
Zero Defects. That's Freescale's goal. But Zero Defects is a journey, and the Product Analysis Labs provide the navigation to that final destination. These same labs also help Freescale develop cutting-edge products with continually improving quality to exceed your needs and those of your customers.

The Product Analysis Labs utilize industry standard techniques and internally developed tools, enabling Freescale to locate sub-micron sized defects among hundreds of millions of transistors on a silicon IC. This process is critical to providing the necessary information for Freescale to improve its products.

Our Product Analysis professionals throughout the world are dedicated to helping Freescale find the root cause of any potential product defect. Our goal is an accurate understanding of the defect, regardless of the cause, to enable rapid corrective action and problem resolution. The Product Analysis flow employs the following five steps:

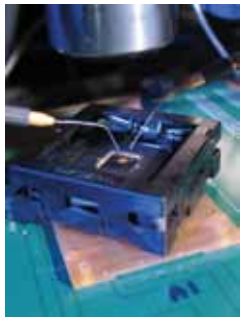
Reproducing the Failure

Reproducing the IC's failure mode in a laboratory environment is one of the first steps required to determine the root cause.



Locating the Defect

Isolating the defect within the millions of transistors on the IC requires advanced analytical techniques. Here, microprobes are used to measure electrical signals on sub-micron wires within the IC. Part of the plastic package has been carefully removed to expose the silicon die within.



Advanced Circuit Analysis

Advanced software tools enable Product Analysts to use a variety of clues—electrical, optical and physical—to find the faulty circuit element.

Physical Analysis

Advanced microscopy techniques are often used to locate, image and characterize the defect. Here, a scanning electron microscope (SEM) is used to inspect a silicon IC.

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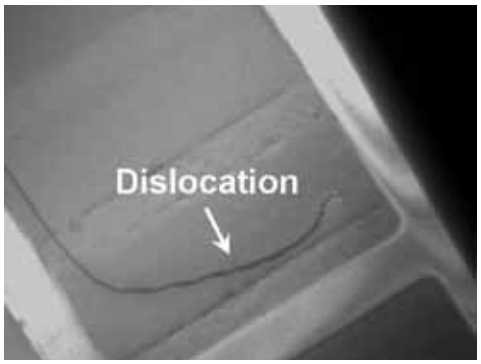
Identifying the Root Cause

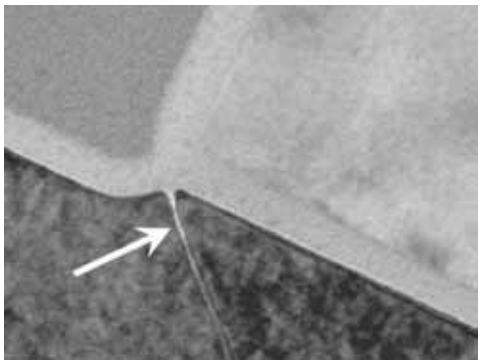
Identifying the root cause of a failing IC enables rapid corrective action and problem resolution.

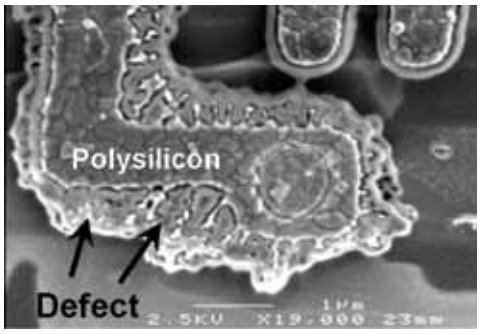
Preparing for Your Future

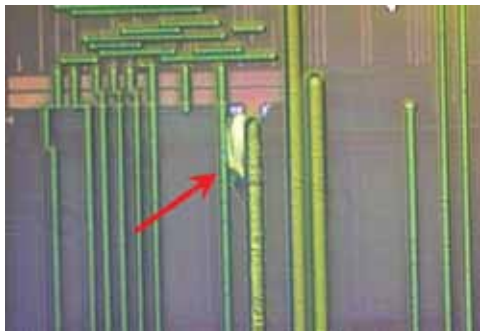
The Product Analysis Labs are busy working with Freescale's R&D teams to develop the next generation of products to meet your needs. By identifying potential problems early in the product development phase, these labs accelerate the availability of new products to you, while also improving product quality.

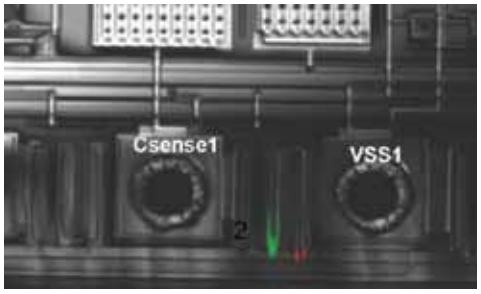
And as IC technology evolves, the Product Analysis Labs maintain the capabilities to analyze the most advanced semiconductor technology in the world.

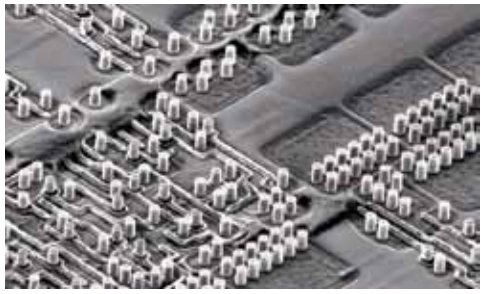


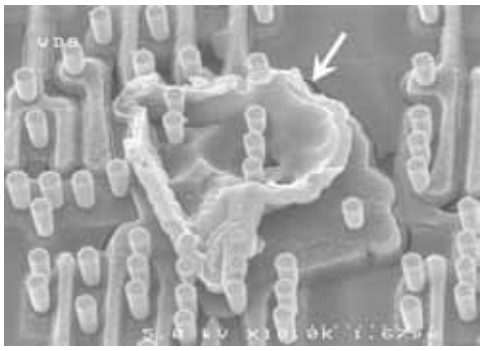


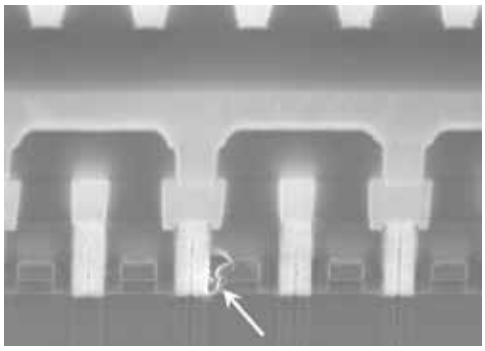


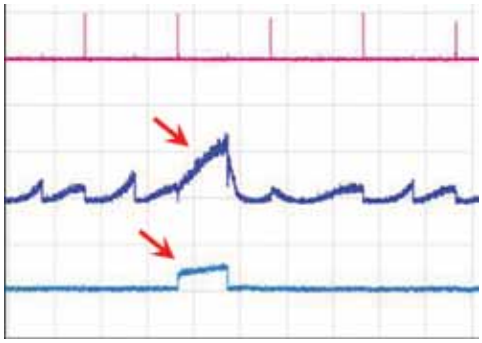


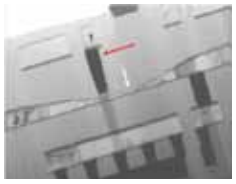












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Continuous Improvement

Continuous improvement is part of what we do every day at Freescale. Be it a large project with vast amounts of detailed data analysis or an employee realizing that their particular production tool is not running as it should, continuous improvement is part of our culture and everyone's responsibility.

Continuous improvement means constantly adapting. It starts by getting data, analyzing this data to derive information and making decisions to implement changes. Finally, the changes are evaluated to make sure they were effective.

At a minimum, continuous improvement requires:

- Measurements and analysis of our results (i.e. effectiveness and efficiency of our processes)
- Good information on our environment from a variety of sources, internally and externally
- The ability at all levels to review the information and issues involved, come up with ideas, evaluate them and carry them out
- Systematic ways to measure our progress and the outcomes of changes

Freescale employs various tools in its continuous improvement process. These include:

- 5S
- Business Process Re-Engineering
- Lean Production
- Six Sigma
- Total Productive Maintenance (TPM)
- Kaizen
- Statistical Process Control
- Zero Defects Program

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Zero Defects

Building Better Products from Start to Ship

The Zero Defects methodology provides an elevated level of excellence, enabling the highest quality required by Freescale customers. In using it, we ensure that products receive optimum attention to detail in every phase of production, including design, wafer fabrication, assembly and test.

As demonstrated in the graphic below, our Zero Defects methodology comprises a balanced set of quality processes.

Manufacturing Continuous Improvement

Part Average Testing and Statistical Bin Limits

Statistical methods applied at Unit Probe and at Final Test. Part Average Testing (PAT) is a die level screen. PAT establishes the typical limits of a historical distribution of some of the electrical measures contributing to unit probe and/or Final Test. Any die that is measured with an electrical measure outside of a PAT limit is inked out (defined as an outlier). Statistical Bin Limits (SBL) is a wafer level screen. SBL is a statistical method to determine the typical fallout level of each bin at unit probe.

Outlier Detection

Along with PAT and SBL, there are other screening methods applied at unit probe in our processes. The good die in bad cluster (GDBC) methodology identifies a working/passing die that may be surrounded by failing die. These good die are then eliminated as a precaution. Wafer fabrication and die final manufacturing statistical process control (SPC) limits identify processes that are out of control. Specification limits are used as the gauge to determine if the product is fit for use. A new method to establish the typical limits of inline processes at median +/- 6 Sigma is being implemented to identify typical product. Capability (CpK) studies are regularly performed on various inline processes and class probe (electrical) parameters.

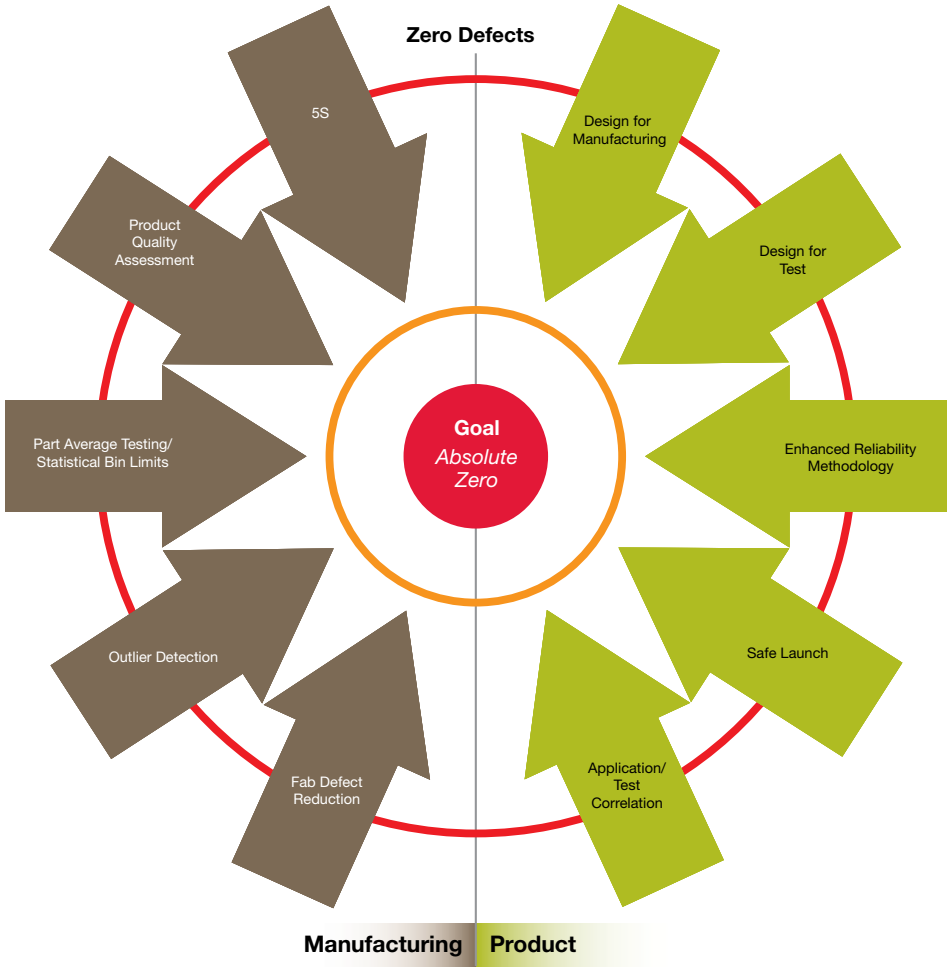
Product Improvement

Design for Manufacturing

This is a design methodology with the aim of optimizing process operating windows in our manufacturing processes and incorporating many modules that address potential manufacturing marginalities. It helps to ensure optimum quality, reliability, cost, time to market and customer satisfaction. Design for Manufacturing (DFM) builds-in quality and incorporates it into the technology Freescale is known for.

Application/Test Correlation

This is a systematic effort and methodology to identify, classify and eliminate issues due to application or product test differences. The correlation effort is an iterative process. It involves collaborating with our customers to share application schematics and methods for Freescale to then implement testing that mirrors the customer application.



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Electronic Business Process Management (eBPM)

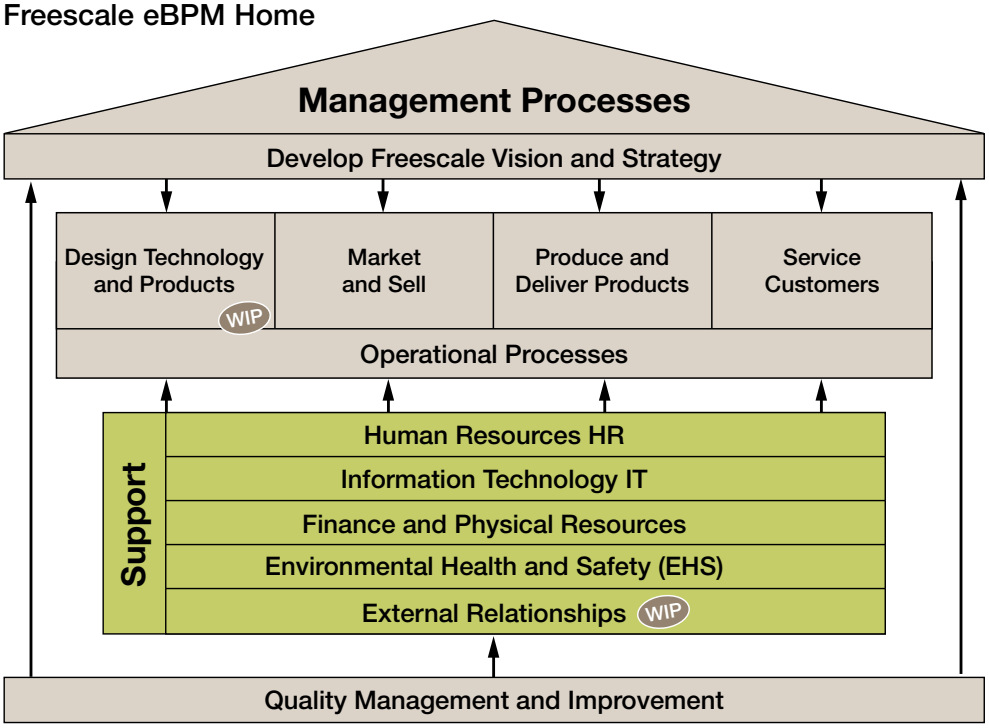
What is eBPM?

eBPM is the process approach that has been adopted and deployed within Freescale.

The eBPM Web portal is a Freescale intranet site and the official repository for Freescale processes. Information accessible from this portal corresponds to the first layer of management system documentation.

The eBPM Web portal has been designed to give all Freescale employees access to the processes of the company, as well as to their attributes (applicable documents, requirements, tools, data), in a user friendly way.

Freescale eBPM Home



Freescale Process Framework					
Freescale processes have been classified in the following 11 categories					
FAMILY	CATEGORY				
MANAGEMENT	Vision, Strategy and Goals	Quality Management and Improvement			
OPERATIONAL	Design Technology and Products	Market and Sell	Produce and Deliver Products	Service Customers	
SUPPORT	Human Resources (HR)	Information Technology (IT)	Finance and Physical	Environmental, Health & Safety (EHS)	External Relationships

The process framework has been designed with three levels of processes.

The process category is considered to be Level 1 information (as show above in the diagram).

You can drill down into each category (i.e. Level 1) and find one or more Level 2 processes. Subsequently, within Level 2 you can find one or more Level 3 processes.

- Level 2 processes are the primary main/key processes, involving high-level management processes within Freescale
- Level 3 processes are the sub-processes that belong to the Level 2 process

For keeping system simple and manageable, no more levels are available.

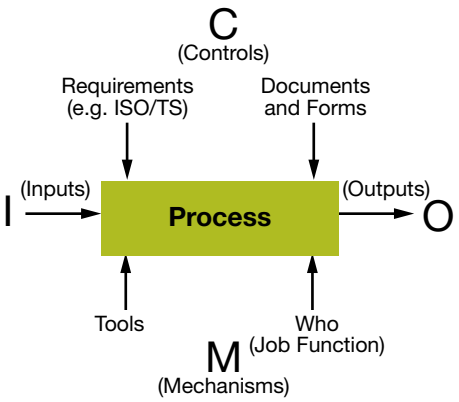
By convention, the attributes of a Level 2 process are the sum of the attributes of the Level 3 processes that belong to Level 2.

For instance, all applicable ISO requirements to a Level 2 process are the sum of all applicable requirements to the Level 3s that belong to this Level 2. The same rule applies to documents (SOPs, 12Ms).

Process Description

All processes are described by mappings that are using the “ICOM” concept (See figure below).

The different arrows have hyperlink capability, which allows linking to the right information or data (assuming hyperlink URL has been provided and coded).



For instance, clicking on the “Documents and Forms” arrow will provide a screen with all the global documents that are applicable to the process.

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Users' Screens

Process maps are accessible from the eBPM menu "Process Categories and ICOM Maps."

Click on a process category to get the relationship ICOM map of the Level 2 processes that belong to this category.

If you click on a Level 2 process, you get the relationship ICOM map of the Level 3 processes that belong to this Level 2.

Change Control

Employees can request a change to eBPM content by submitting an eBPM Change Request using the electronic form that is available on the Web portal menu.

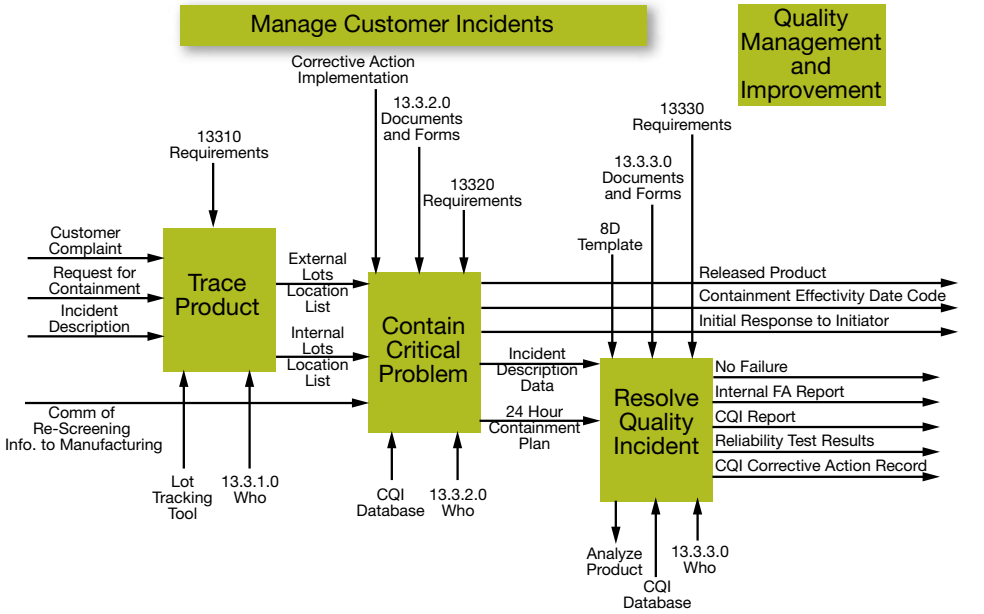
The request will then be reviewed by eBPM team and, if approved, the change will be implemented.

All change requests are archived into the eBPM system.

Other Functionalities

The eBPM menu also provides a "Got Lost?" menu, that includes interesting information to help users find their way into the system, such as tables that cross-reference documents and processes, documents and job functions.

Example: Level 2 Process "Manage Customer Incidents"



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Change Management and Customer Communication

Freescale operates a global change management system incorporating all business and manufacturing areas. This process is governed by a company-wide specification which drives compliance and control.

Each change is considered individually and the risks associated with its adoption are carefully considered. Formal review and acceptance of the risk analysis, the plans for mitigation of the risks, and the criteria proposed as a successful evaluation outcome are required by a board composed of senior engineers and managers before any material is committed to evaluation.

After formal acceptance of the evaluation plans, limited engineering material is used to evaluate the effects of the change and ensure identified risks did not occur. Only if all success criteria are met will the change be taken to an implementation phase.

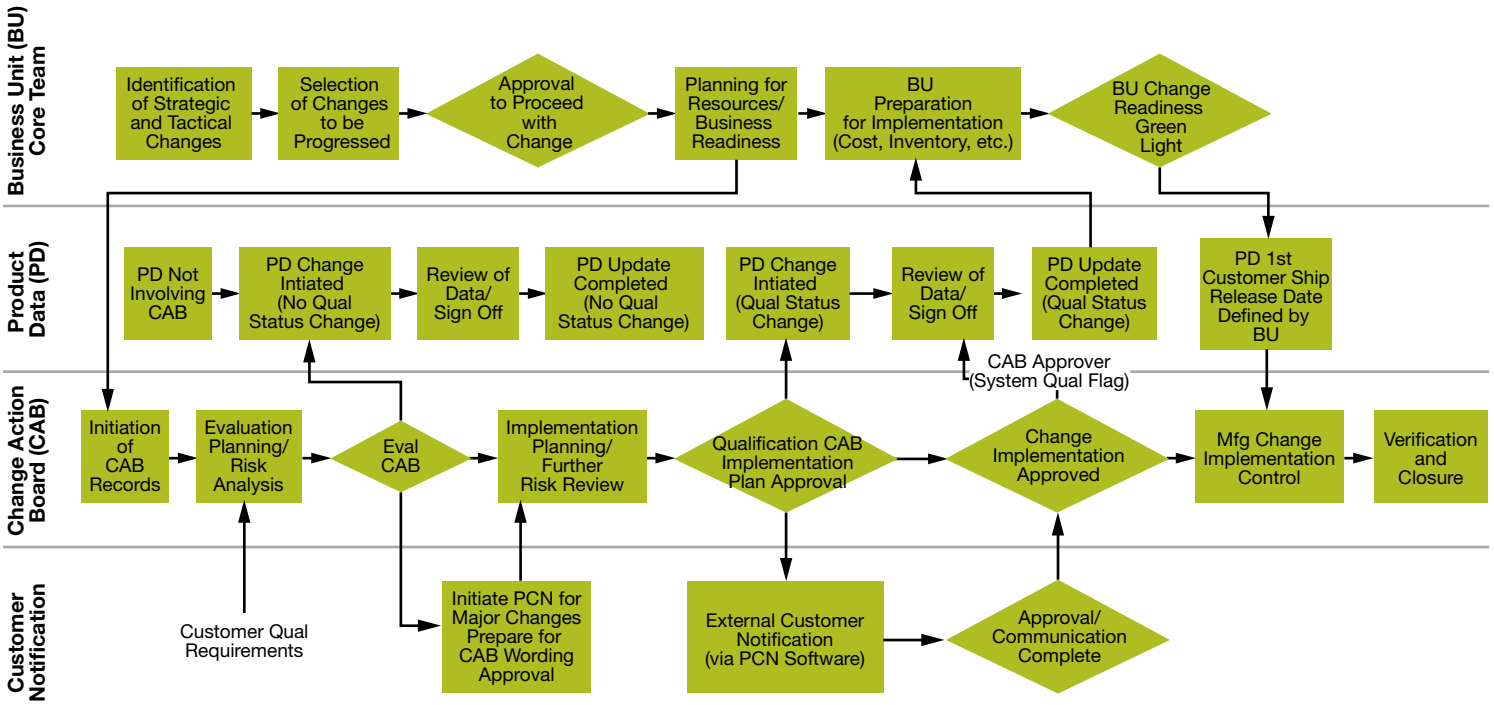
A final review of the results associated with implementation of the change are then undertaken and approved by the evaluation board.

Final completion of all notifications and implementation of the change is followed by a verification step to ensure no difference to the expected outputs is noted in the first production material before the change is formally closed.

Freescale commits to communicate to customers changes which may affect the fit, form, function or reliability of a product through our product change notices (PCNs) 90 days prior to implementation. Our notification e-mails contain a summary of the change and a Web link to access the complete notification and another Web link to submit a service request which may be used to acquire further information, order samples or object to PCN. We require that this feedback be made within 30 days. Access to the full notification is done at a secure site and requires a USERid and password for login.

Product Obsolescence Policy: We are also committed to providing notification of Product Obsolescence and offer a Life Time Buy (LTB) opportunity. We allow up to twelve months for an order to be placed from the date of notification and an additional twelve months to delivery of the ordered product.

Change Management Process Flow



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Problem Resolution Process

Quality Incident Handling

Freescale has deployed a global infrastructure to support customer problem resolution, including Field Quality Engineering, Field Quality Laboratories, Customer Quality Engineering and Product Centers of Excellence in all regions. This infrastructure provides technical support close to the customer location to achieve rapid resolution of problems, and specialist expertise centers where required.

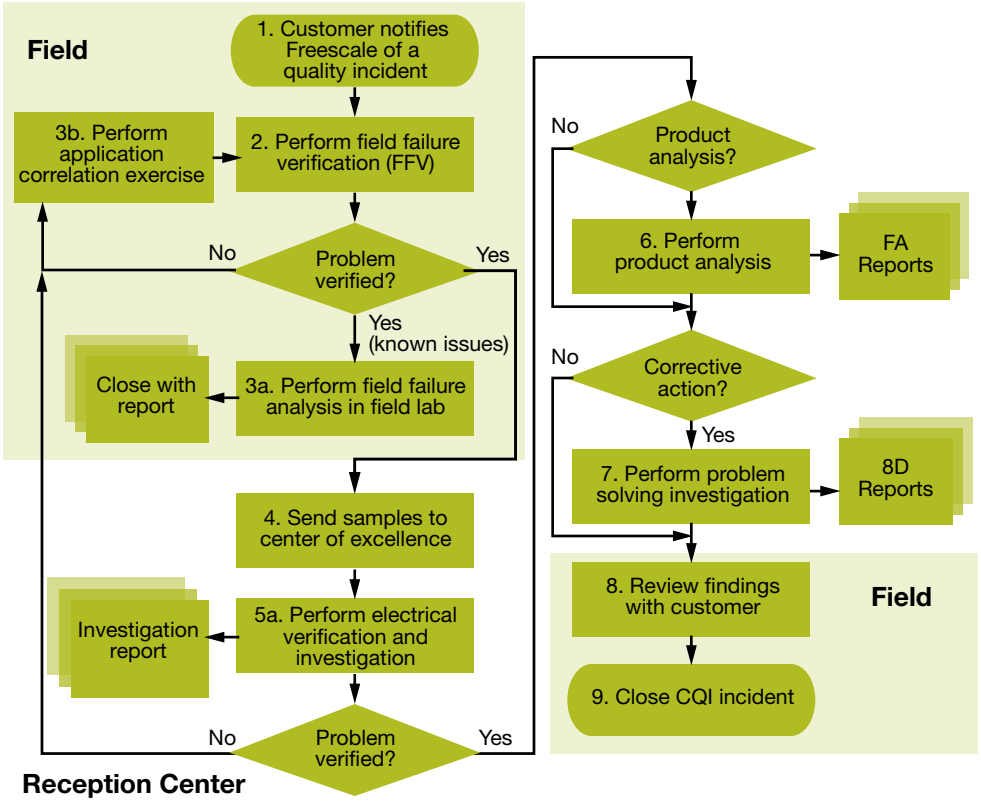
Freescale uses systematic problem solving methods to investigate and provide a detailed response (including corrective action), for customer product returns and complaints. The problem resolution process is supported by the Customer Quality Incident (CQI) management system, which provides incident status tracking and reporting throughout the overall process flow. The system also provides a complete record of the investigation, including failure analysis, corrective action reports and incident cycle-time.

Freescale also takes advantage of the capability of the CQI system and its built-in data mining capabilities to provide failure rate reports and to drive continuous product quality improvement.

Some key features of the CQI system include:

- Single worldwide database where all customer product returns or complaints are entered
- Web-based tool using pull-down menus, shortcuts and more
- Tracking through eight distinct phases that incident flows through (depending on nature of the incident)
- Event tracking showing status of the incident in the process
- Stores and facilitates e-mail reporting of investigation progress
- Stores corrective action (in 8D format) and failure analysis reports
- Data mining capabilities for analysis and reporting

Customer Returns (CQI) Process Map



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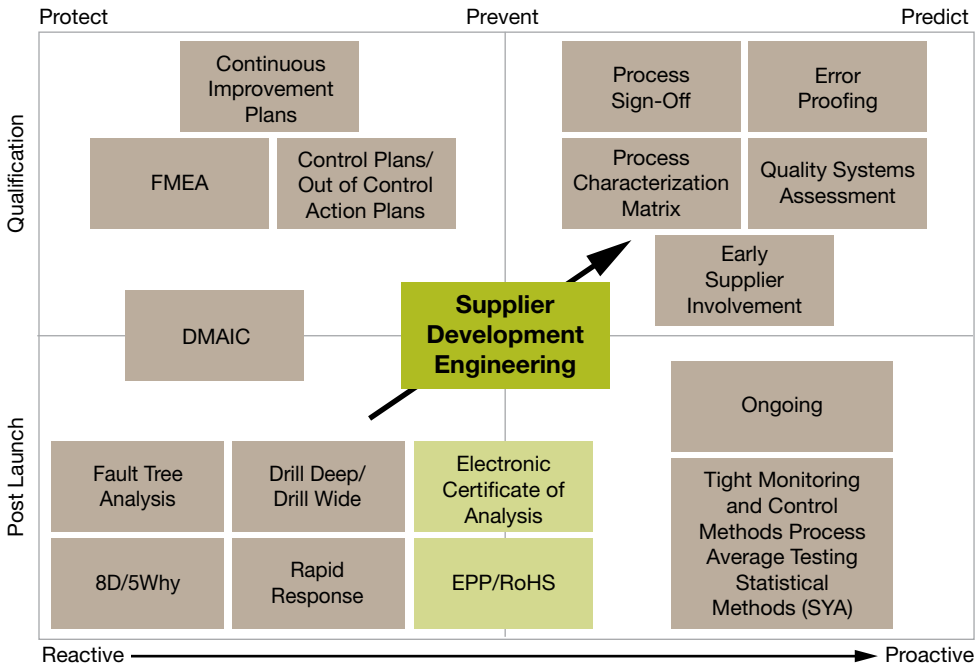
Supplier Quality Support

As a critical part of the supply chain, material suppliers play a vital role in helping Freescale achieve customer Zero Defects quality expectations. The Supply Chain Operations Materials (SCOM) Quality team contains Supplier Development Engineers and Supplier Quality Engineers deployed globally. The team is chartered with managing over 480 supplier locations around the world and driving them proactively to meet Freescale quality requirements. In partnership with Global Procurement, Freescale's SCOM Quality team works closely with material suppliers to drive systematic and ongoing product and process capability improvements to ensure the supply of robust raw materials that enable Freescale to manufacture products with consistent performance while meeting customer application requirements. Utilizing process sign off audits and quality systems assessments, Freescale deploys a rigorous supplier assessment process to understand supplier capability and drive continuous improvement.

Supplier Quality Diagram



At a minimum, Freescale requires the following from our material suppliers:

- ISO9001-2000 Quality Systems Certification or higher
- Absolute conformance to Freescale specification requirements
- Zero interruptions to supply
- Minimize changes and obtain Freescale approval prior to implementation of all changes per specification 12MRM70491A
- Rapid response to all quality incidents with 24 hours containment and 10 days 8D final report
- Thorough root cause analysis utilizing 5Why, 8D, FTA and drill deep/drill wide methodologies
- Commitment from senior leadership to build a Zero Defects culture in the organization
- Comply with Freescale EPP requirements per 12MWS00047B specification

Freescale is currently deploying a supply quality management (SQM) tool which includes a “ship to control” module. SQM enables the utilization of statistical process control (SPC) methodologies to automatically monitor material suppliers' Certificate of Analysis parameters electronically (eCofA).

Freescale’s relentless drive towards Zero Defects is built around a model of Predict, Prevent, Protect which enables a proactive problem solving approach to supplier-quality development and management.

Software Quality

Meeting Customer Expectations

Freescale software quality is a systematic set of activities that enables us to build quality directly into our software. Our goal is to guarantee that every system, component or process meets specified requirements and customer expectations.

We consistently employ software quality assurance activities to maintain high quality in our software-related work items. By reviewing the product throughout the development life cycle, we're able to eliminate software defects at critical points in the process.

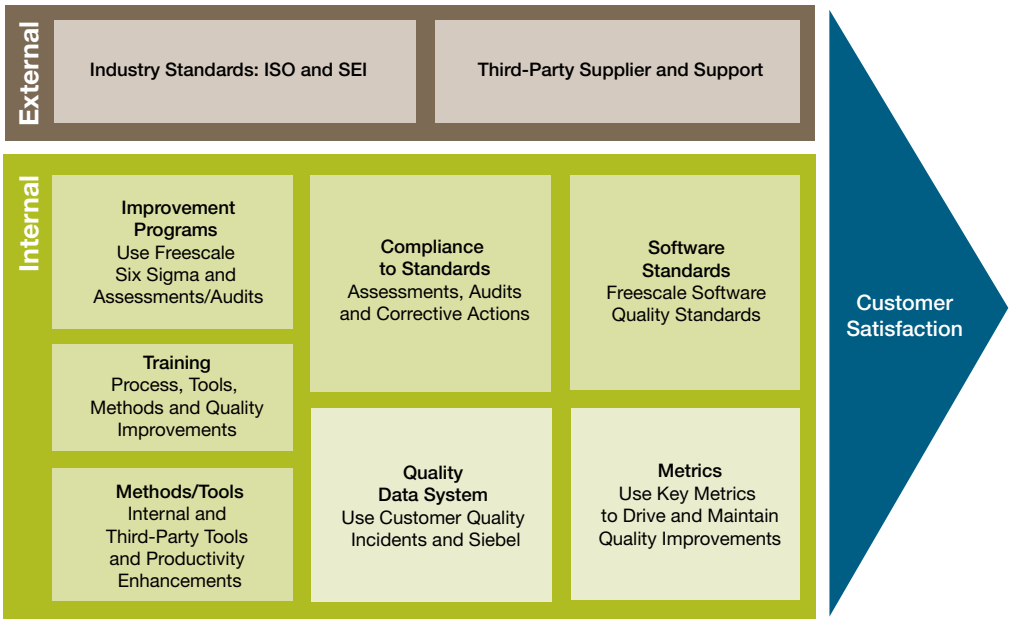
During quality control activities, we rigorously test the product to detect defects before shipping to customers. Quality management provides continuous process improvement to the software product development lifecycle and defect prevention to the process itself.

Team-Driven and Supported

The Software Quality Team offers support and guidance to Freescale's business units in the areas of:

- Software Standards: Freescale Software Quality Standards drive our organizations to consistently meet the industry standards of the International Organization of Standardization (ISO) and the Software Engineering Institute (SEI) as well as our own quality standards.
- Compliance to Standards: To maintain software quality, we perform consistent internal quality assurance audits/capability gap assessments of our business units and external process performance audits/assessments of our third-party software suppliers. The metrics and audit report results are promptly communicated to management.
- Improvement Programs: Led and facilitated by the Software Quality Team, these programs use Freescale Six Sigma and assessments/audits throughout the company.
- Training: Freescale business units are educated in software techniques and models, tool usage and quality engineering best practices. We help each business unit establish worldwide training programs on how to use and implement quality processes, and provide on-going training for new engineers.
- Methods/Tools: The Software Quality Team provides assistance to Freescale's Software Development organizations in evaluating and analyzing internal and third-party tools for productivity enhancement and use in product development.
- Software Change Action Board: Co-chaired by the Software Quality Team, the board reviews production software releases that will be used to test qualified products before shipment to customers. These include probe, burn-in and final test software programs.
- Customer Interface: The Software Quality Team interfaces with external customers to resolve released software issues and to discuss software process improvement.

Software Quality Support Model



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Environmentally Preferred Products

Protecting the World Around Us

Freescale is proactively driving the implementation of environmentally friendly materials in our products. The Environmentally Preferred Products (EPP) program incorporates environmentally favored materials and design features, such as low toxicity and greater recyclability.

The program helps ensure we meet both customer and legislative requirements, while helping to protect and preserve the environment.

EPP activities include lead (Pb)-free product offerings and content data, in support of our customers' needs for compliance with global environmental directives. These include:

- Waste of Electrical and Electronic Equipment (WEEE): Encourages and sets criteria for the collection, treatment, recycling and recovery of electrical and electronic waste.
- Restriction of Hazardous Substances (RoHS): Aims to protect human health and the environment by restricting the use of certain hazardous substances—lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers—in new equipment and to complement the WEEE directive.
- End of Life Vehicle (ELV): Applicable to the automotive industry, it bans the same materials as RoHS, but specifically exempts lead in solders for automotive electronics.

Engineered for Responsibility

Freescale is determined to conduct all business activities in a responsible manner—free from recognized hazards. To help guarantee success, our Environmental, Health & Safety (EHS) professionals serve as consultants to Freescale design and manufacturing engineers. Together, the teams develop innovative and flexible solutions designed to clear the way for superior technological advancements.

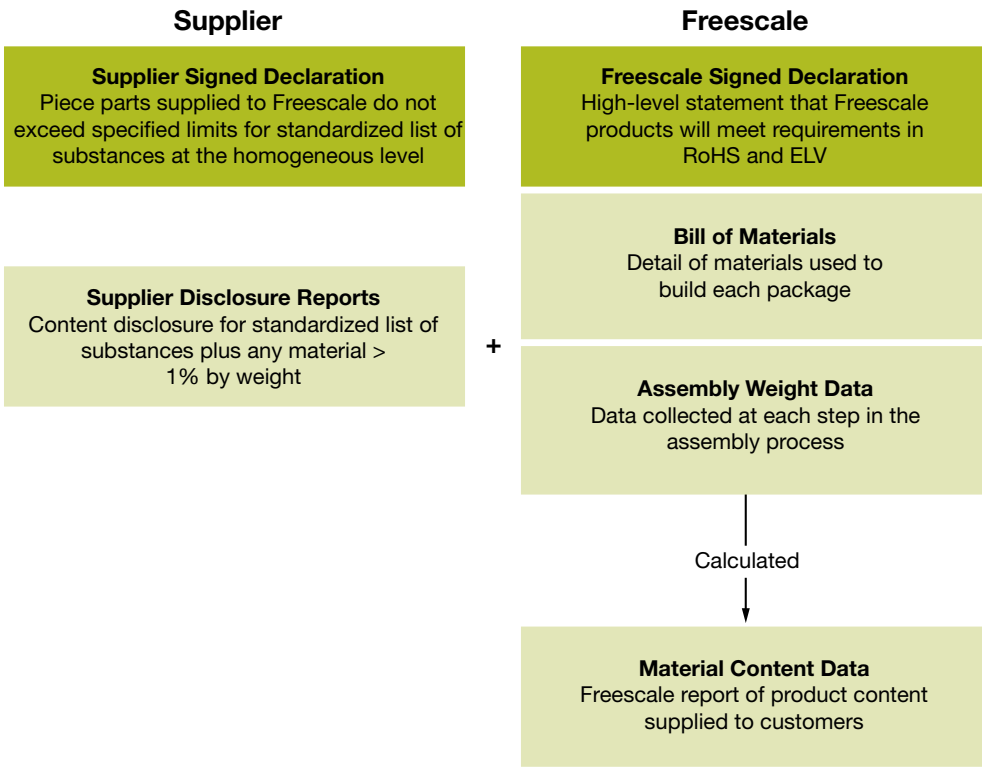
Partnered for Customer Success

Freescale partners with suppliers to collect and report product content information and verify RoHS compliance. These partnerships support our drive for EHS excellence, with the ultimate mission to create success for our customers.

ROHS Changes

	Leadframe-Based Packages	Ball Grid Array Packages
Technology	Post-Plating: Pure Sn (Matte)	Tin-Silver-Copper (SnAgCu) spheres
Qualification and Manufacturing Logistics	• New mold compounds, die attach and leadframes for some packaging types • Plating material change • Addition of one hour, post-plate bake for tin whisker mitigation	• New substrates for some package types • Sphere material change
Customer Board Assembly	• Higher solder process temperature • Full backward compatibility with existing lead-based soldering processes	• Higher solder process temperature • Not fully backward compatible with existing lead-based soldering processes

Environmental Compliance Process



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