

QUALITY MANUAL

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Dated 21st Aug 2013

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1.1 Purpose & Relevance

This document is a guide to the management system and expected to provide an overview of how Jordan Valley Semiconductors UK complies with the needs of its customers and stakeholders. A controlled copy of this manual is available for viewing on the Company Extranet - <http://extra.bede.co.uk>

Beneath this document are the other levels of the management system which include; Policy Documents, Work Procedures, Instructions, Forms etc. They complete the lists of all processes and procedures that can be viewed on the Extranet and are controlled by the Quality Department.

It is a means to:

- Communicate the vision, values, mission policies and objectives.
- Show how the system has been constructed.
- Show links between processes.
- Show who does what (overview).
- Show information to aid in training of new people.
- Show the way to identify potential improvements.
- Demonstrate compliance with external standards and regulations.

The "Process Management" approach has been adopted by the company using the ISO9001: 2008 Standard as the model for its implementation. See page 13.

Copies of this manual may be distributed to customers and others at the discretion of Managers on the understanding that such copies are uncontrolled and will not be updated.

1.2 Scope

Aware of the responsibility the company has to both customers and stakeholders, it has taken all feasible steps to safeguard the quality and high reliability of the services it provides.

This manual describes the Quality Management System which is based on the "Process Management" approach.

All activities and functions in the company, including the personnel engaged in them, are absolutely linked with the attainment of quality and therefore wholly involved in its quality assurance.

Total fulfillment of all our internal and external customer requirements, is the key objective in all of our activities and quality management enables us to achieve this goal.

2.1 General

ISO9001:2008 Scope:

“Design, development, manufacturing, service and support of non-destructive X-ray metrology equipment for the semiconductor industry, including the design and development of associated control and analysis software.”

Quote Scope of Certification

Jordan Valley Semiconductors UK Ltd is a wholly owned subsidiary of:

**Jordan Valley Semiconductors Ltd,
Zone #6 Ramat Gavriel
Industrial Zone
Migdal Ha'Emek 23100
Israel**

Accreditation

- ISO 9001:2008 accredited

Registration to ISO 9001:2008:

**Jordan Valley Semiconductors UK Limited
Belmont Business Park
Durham
DH1 1TW**

Company Reg. **06558876**

Jordan Valley Semiconductors UK Ltd is based within Belmont, Durham, England and housed in part of a high-tech custom built building that was opened in December 2001.

The company's products are utilised by their customers to measure the important properties of advanced materials by X-ray metrology. The information the customer gathers from these measurements enables them to qualify the quality of the advanced materials during manufacture and then provides the information for researching and developing subsequent products by adding value, improving efficiency and reducing waste.

Further information can be found on the company's website.

2.2 Interested Parties

The company will continually make every effort to satisfy the criteria required by persons or groups having an interest in the performance and success of the company. These include but are not limited to the following:

- **Our Customers**, by the quality of products and services.
- **The Owners**, by the long-term value of the group.
- **Our employees**, by job satisfaction, salary and contract conditions, working environment, training and quality of leadership.
- **The Community**, by contribution to the community - jobs, support for other traders.
- **Our Suppliers**, in terms of mutual trading.
- **The Government**, by our compliance with legislation – statutory and regulatory.
- **JV Investors**, by long-term value of the group

Our management system/organisational effectiveness is carried out in a manner that leads to the continued satisfaction of all parties.

2.3 Product Context

The group's main products use X-rays to characterize advanced materials such as semiconductors used in optical, wireless telecommunications and microprocessor devices.

- Automated X-ray tools for high volume manufacturing and process development within the silicon semiconductor markets.
- -ray metrology tools for the compound semiconductor and research and development markets.

By providing customers with information about their materials we are able to help them research and develop new devices and subsequently assess their quality during manufacture, thereby reducing wastage and improving yields.

2.4 The Market

- Semiconductor Industries
- Research & Development Groups (e.g. Universities, research institutes etc.)

2.5 Mission Statement

Our Mission is to be a supplier of high quality metrology goods and services to semiconductor markets

2.6 Vision - Statement

Our Vision is to be who our existing and potential customers turn to first for high quality products and responsive support services.

2.7 Values - Statement

The Values we hold when working with colleagues, customers and suppliers are:

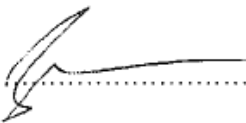
- ✓ **Teamwork**
- ✓ **Respect**
- ✓ **Integrity**
- ✓ **Commitment**
- ✓ **Ethical approach**

2.8 Quality Policy

The Quality Policy Of Jordan Valley Semiconductors UK

- **We will provide total support to our Quality Management System and always undertake to maintain its effectiveness.**
- **We will always develop our systems and procedures to enable our employees to create value and allow continual improvement.**
- **By combining our systems, processes and performance monitoring, with our knowledge and experience, we will develop improved solutions to achieve our Vision and Mission.**

Signed



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Dated *27 July 2012*

3.1 Function Descriptions

Jordan Valley Semiconductors (Israel)

Responsible for the overall company direction and setting of strategic objectives.

- Global Finance,
- Global Sales,
- Global Service Management,
- Global IT Management (UK based).

Corporate VP and UK Site Manager

Responsible to ensure:

- Management of production resources & materials to meet demands highlighted through the Sales & Operational Planning meetings
- Management of Purchasing, the Supply Chain & Logistics activities.
- Control of Cost, Quality and Delivery of manufactured products.
- Control of change control, nonconformity corrective and preventive action within the company.
- Ensuring that all operations/office procedures are maintained through the QMS.
- Maintenance of the QMS to meet the company's strategic Quality needs.
- Delivering of Company Objectives

Director of Technology

Responsible for:

- Directing and developing the technology direction of the business.
- Responsible for the technology roadmap.
- Supporting the Sales process with technological input.
- Directing Product management for new product lines.
- Control of Engineering, Design & Development
- Control of the B.O.M. information.
- Control of build & development project management.

3.2 Product Managers

Responsible to the management team for:

- Market penetration plan. Target applications, type of customers etc.
- Products positioning
- Maintain Product Specification data base including pricing data base, configuration, etc

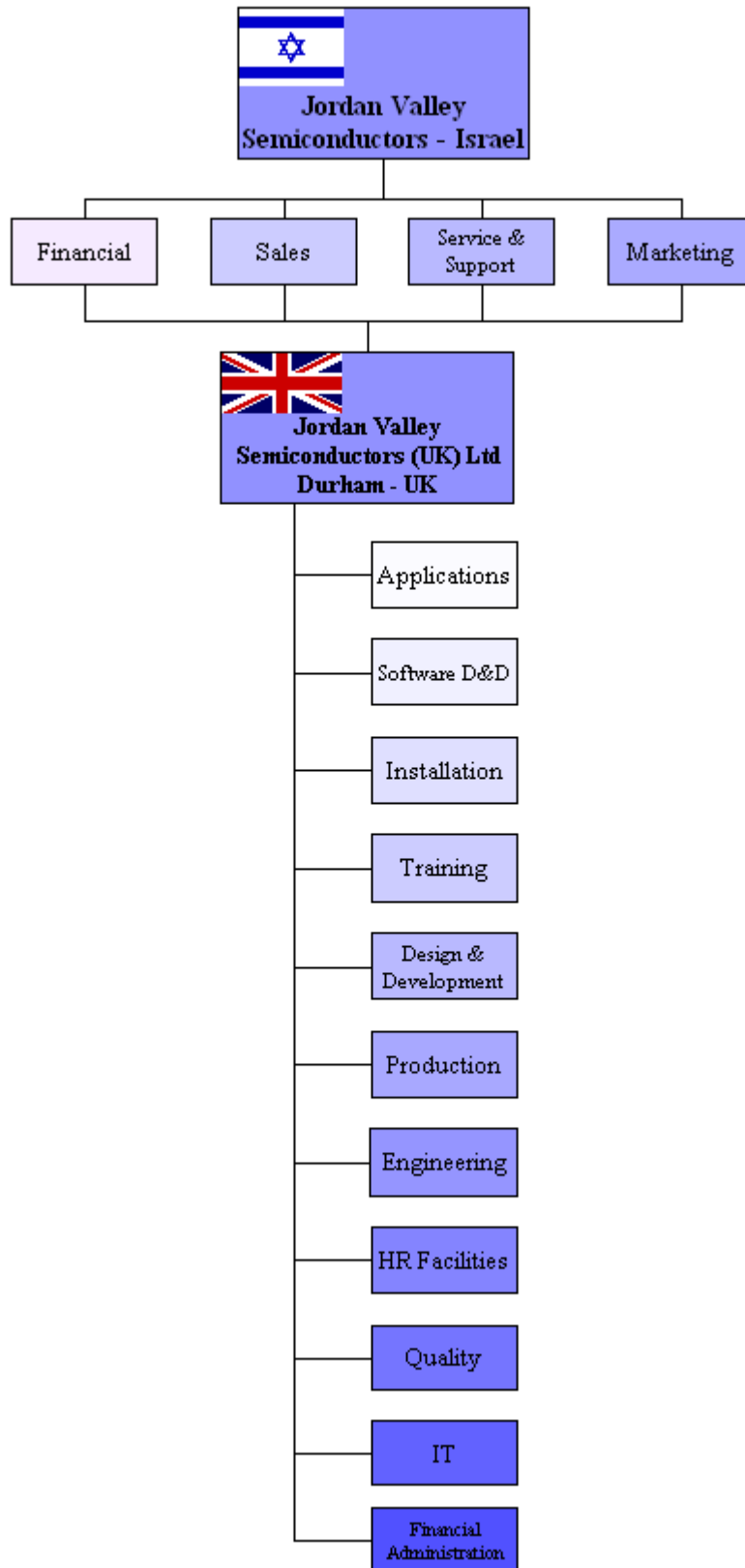
- Road map follow- up with Engineering and Marketing: New product definition, SW releases, new generations etc
- Continual improvement plan process follow-up together with service
- Collecting data on competitive product
- Support marketing of the product: Brochures, Web content, Shows etc..
- Supports sales activity in frequently asked question and attending sales visits as necessary.

3.3 Organisation Structure

**For Organisation Structure
Refer To**

55.0108.466

3.4 Scope Of Activity



3.5 Departmental Roles & Responsibilities

Applications R&D Manager:

- ✓ Management of the Applications function to meet customer needs.
- ✓ Planning of available resources to meet Application's department needs
- ✓ Performing customer demos

Applications Scientists:

- ✓ Development of Applications
- ✓ Keeping in-house tools up and used
- ✓ Performing customer demos

Applications Engineers:

- ✓ Qualification of customer tools at internally and externally
- ✓ Aiding customer development in utilisation of tools
- ✓ Performing customer demos

Technologists / Product Managers:

- ✓ Development of new tools and applications internally
- ✓ Ensuring instruments meet and exceed the needs of industry
- ✓ Identify possible new markets
- ✓ Performing customer demos

Department

- ✓ Contract Review Meeting attendance.
- ✓ Gather customer information/satisfaction feedback

Engineering Engineering Manager

- ✓ Management of company design and software engineering functions
- ✓ Provide support for service and production departments
- ✓ Responsible for Engineering Change Process
- ✓ Responsible for design process

Production Engineering

- ✓ Creation of Manufacturing Structures/Routers within the company's ERP system.
- ✓ Management and administration of the company's Engineering Change Process.
- ✓ Administration of the company's Copy Exact process.
- ✓ Provide support to the Service Department.
- ✓ Provide support to the Production Department.

**Engineering
(cont)**

Design Engineering

- ✓ Creation of mechanical and electronic designs within the New Product Introduction process.
- ✓ Manage the design review process.
- ✓ Investigate new design technologies.
- ✓ Provide design documentation to communicate design information and specification to internal & external stakeholders.
- ✓ Develop & test products to in-house & external requirements.
- ✓ Ensure design compliance with regulatory requirements.
- ✓ Create design changes through the Engineering Change Request process.
- ✓ Investigate issues that are raised with products during in house testing or the field.
- ✓ Analyse and dis/approve concessions to specification requested by Production or Quality departments

Automation Software Group

- ✓ Development and maintenance of automation software.

Department

Contract Review Meeting attendance.

**Human
Resources**

HR / Office Manager

- ✓ Recruitment and retention
- ✓ Providing support and advice to managers/employees on employment matters
- ✓ Deliver training on HR topics
- ✓ Identify training needs, solutions and source any funding
- ✓ Co-ordination of company health & safety
- ✓ Ensure employment legal compliance
- ✓ Co-ordination of building facilities / landlord communication
- ✓ Administrates the Performance & Objectives Process

Production

Production Manager

- ✓ Through a production planning function, plan material & manpower requirements to meet demand.
- ✓ Request concessions for any deviations to the design standard encountered.
- ✓ Manage the production facility area to meet cleanliness requirements.
- ✓ Contract Review Meeting attendance.

Product Specialist / Instrument Technician

- ✓ Build product as defined in the Sales & Operational Planning process.
- ✓ Build product that meets in house quality standards
- ✓ Test products, in association with Applications & Software, to ensure compliance with in house and customer standards.
- ✓ Create appropriate build instructions.
- ✓ Pack the product prior to shipping.

Supply Chain & Logistics Management

Senior Buyer

- ✓ Purchasing of all materials coming into JVSUK
- ✓ Supplier audits, scorecard reviews
- ✓ Expediting goods, Non conformances, deliveries from suppliers.
- ✓ Control of costs, negotiation on new products and existing products.
- ✓ Supplier sourcing, supplier communication and flow re all aspects
- ✓ Ensuring supplier has all up to date drawings and information.
- ✓ Ensuring copy exact is adhered to by the suppliers
- ✓ Quality auditor

Storekeeper

- ✓ Processing of material into JVSUK and to internal customers
- ✓ Control of material in stores
- ✓ NCR processing.
- ✓ All shipments to customers and suppliers.

Quality

Systems & Process Quality Engineer

- ✓ Document management: Internal Process, Document Control – Creation – Alteration – Approve – Review
- ✓ Auditing: Internal Processing & External Verification
- ✓ Non-conformance control
- ✓ Correction Prevention Action control.
- ✓ Supplier Quality Assessments
- ✓ Instrument Final Finish
- ✓ Packing Inspection
- ✓ Concession Control
- ✓ Concession Documentation and Process Control
- ✓ Aesthetic Concession Approval

IT

Global IT Manager

- ✓ Creates all IT policies throughout the group
- ✓ Recommends and implements IT and communications solutions
- ✓ Data Protection Officer
- ✓ Quality Auditor

Finance

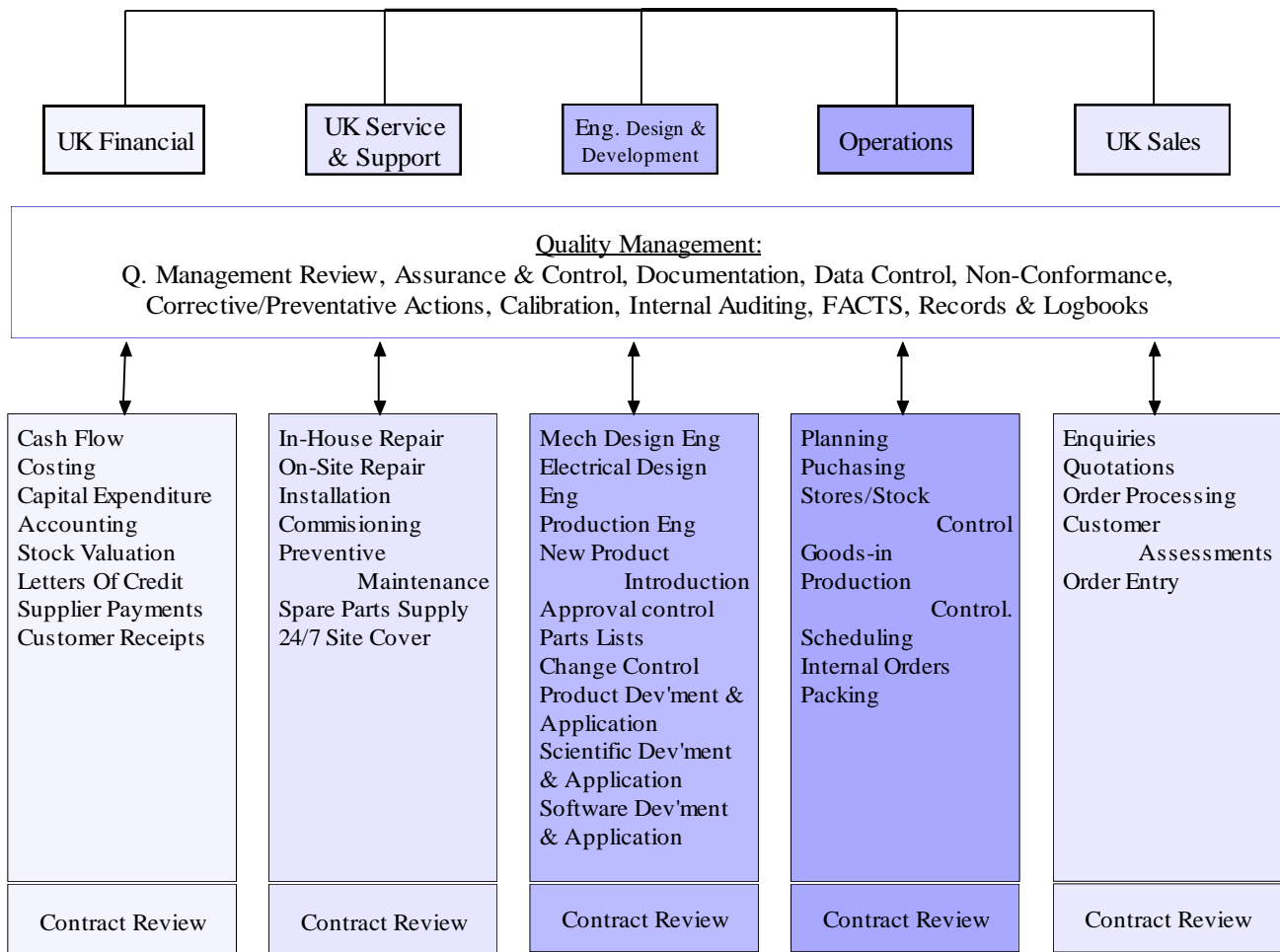
Finance Supervisor

- ✓ Manages company cash flow
- ✓ Manages all payments to suppliers and from customers
- ✓ Responsible for VAT reclaim

Finance Assistant

- ✓ Performs payroll
- ✓ Pension scheme administration
- ✓ Other finance duties

4.1 System Model



4.2 Management Review

A quarterly Quality Management meeting supplemented by a monthly Israel/UK CIP meeting & weekly FACTS meeting will evaluate the Quality Management System for the continual effectiveness and performance of processes to ensure all objectives are being achieved and will cover but are not be limited to the following areas: -

Inputs

- Quality and process audit results evaluation.
- Customer Feedback (Dissatisfaction and Satisfaction)
- NCR, FACTS and ACAN 's will be evaluated to establish the cause and enable corrective actions.
- Status of Preventive and Corrective actions
- Follow-up action required from previous Management Reviews
- Changes that could affect the QMS
- Any recommendations for Improvement
- Supplier Performance

Outputs

- Corrective, Preventive actions to prevent future recurrence where required
- Process performance data to establish whether process objectives are being achieved. Current performances will be compared with the quality objectives set for processes.
- Improvement opportunities will be evaluated.

4.3 Business Planning Process

The Business Plan is produced for the Jordan Valley group on an annual basis by the group Board of Directors through considering a number of factors which include, but are not limited to, the following:

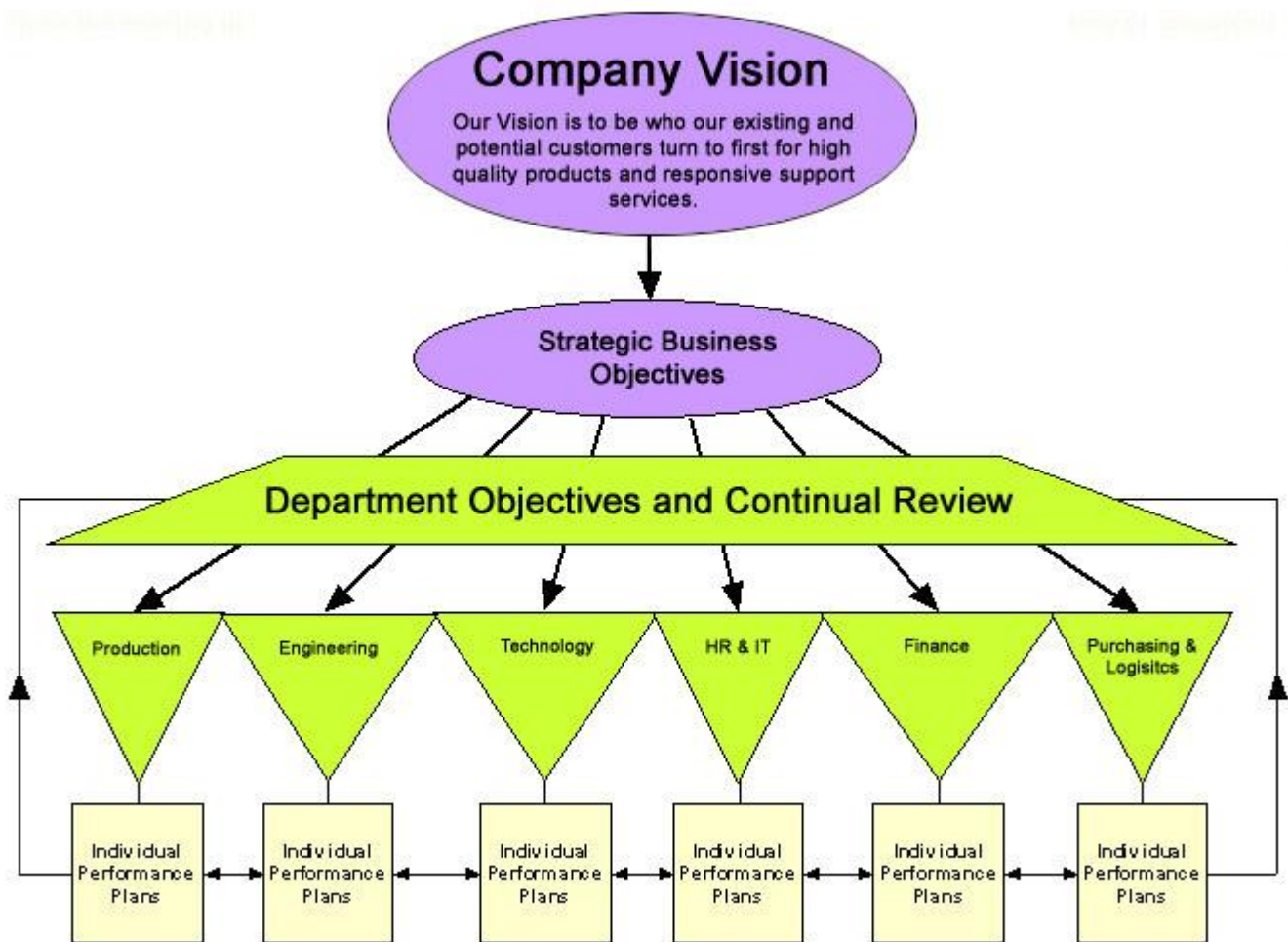
- Company Vision and Values
- Owner expectations
- Industry trends
- Macro economic issues
- Technology Roadmap progress
- Market intelligence (e.g. Served Available Market / Cap-Ex forecasts)
- Customer expectations
- Order backlog
- Product lifecycles
- New Product launch
- Cashflow
- Profitability

A financial model (Annual Operating Plan) is produced by Jordan Valley Semiconductors Ltd in collaboration with the UK management team, alongside a set of strategic business objectives for the year ahead. Each manager then produces a set of departmental objectives, aligned to the strategic business objectives, which are reviewed and agreed by the Executive team to ensure alignment:

- with the strategic business objectives
- across the organisation to minimise areas of conflict, duplication between departments

Once the Jordan Valley Semiconductors Ltd have reviewed and agreed the Business Plan, this is communicated to employees via the Performance Planning System and individual performance objectives are cascaded to employees to ensure alignment of direction & focus throughout the organisation.

4.4 Vision Objectives Cascade



4.5 Marketing Process

Marketing is carried out by Jordan Valley Semiconductors Israel / USA, with technical input from the UK team.

4.6 Product / Service Process

We have procedures that are documented to control the preparation, manufacture and installation of all our products and services. These include documentation to control overall processes, and build/test/service instruction to control individual operations as appropriate.

5.1 Continual Improvement

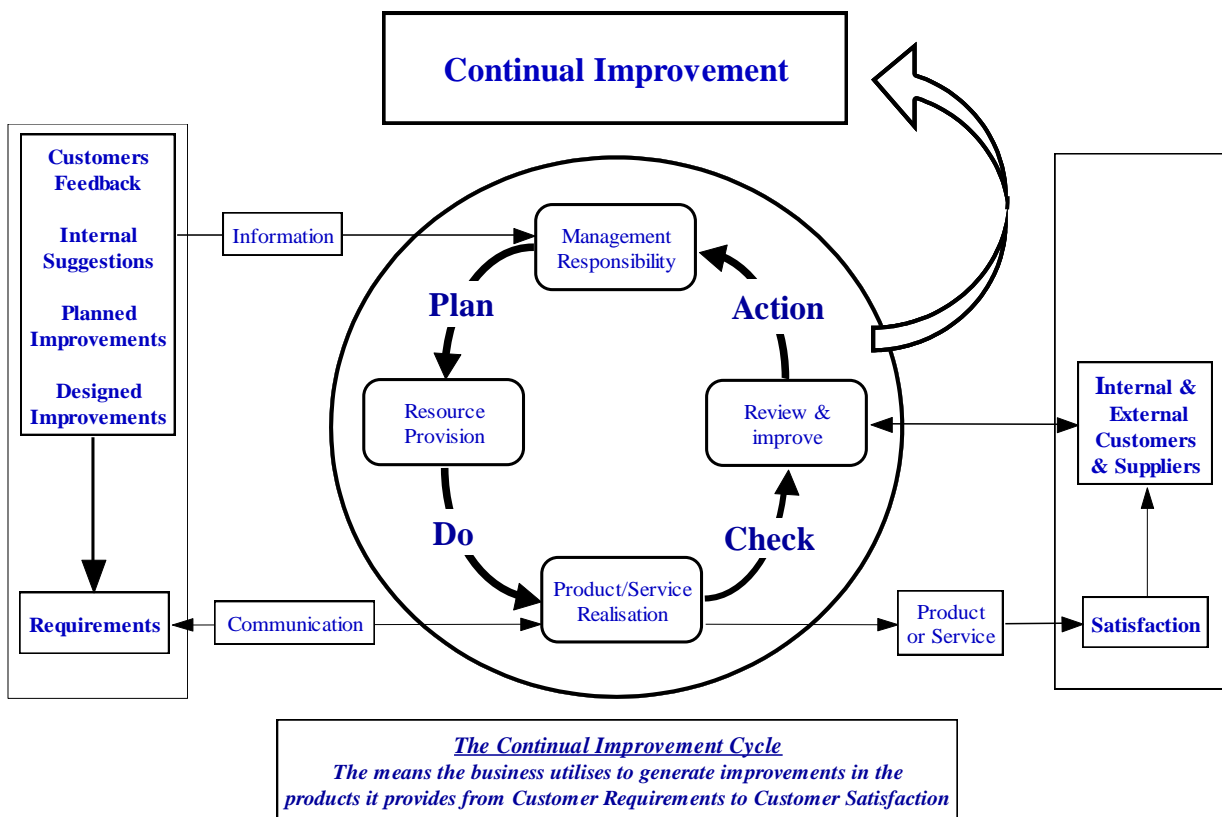
JVSUK is a provider of unique products with a continually developing product base. The company has strong links with customers who have specific needs in the field of non-destructive X-ray metrology. This ensures that the product continually improves during development.

To complement this we operate the following projects and programs:

- New Product Introduction.
- Design & Business Software Introduction.
- Engineering Change Request/Note.
- Document Change.
- Employee Performance Planning.
- Open Door & Staff Briefing Communications.
- Customer Questionnaires. (Supplementary / Advisory)
- Customer comments and feedback passed through the regular, senior management meetings for discussion.

The means by which all customer needs are identified, separated into actionable parts and linked to internal measured processes to align the business emphasis with all customer needs and values.

5.2 Continual Improvement Cycle



6.1 Questions

Q. What process do we use to register a fault?

85.0302.1016 Fault Analysis & Correction Tracking System Process

This procedure describes the activities that:

- Record a fault that is directly linked to an instrument.
- Follows-up with Corrective Actions.
- Continues with Preventative Actions.
- Closes-out a fault by mutual agreement utilizing a cross-functional team.

The process has 3 specific targets:

- To involve senior assistance in the removal of a faults root-cause.
- To record all product related faults that can be then analysed for improvement.
- To provide world-wide access through the JVSUK Intranet to enter and log a fault.

Q. What process do we use to return a faulted component?

83.0302.165 Non Conforming Product Process

This procedure describes the activities that:

- Controls non –conforming product
- Monitors and analyses the concerns related
- Prevents unintended use.
- Seeks in all cases deemed to be Supplier responsible: Root Cause, Corrective & Preventive Actions

The process has 2 specific targets:

- Eliminate weak links in the manufacturing chain.
- Remove wasteful rework.

Q. What process do we use to alter the design and Specification of a part?

73.1002.352 Engineering Change Procedure

This procedure describes the activities that:

- Provide access for everyone to request a change to either improve or correct product.
- Follows-up with investigation of implication to products, safety and BOM's.
- Completes any stock reconciliations.
- Closes-out a fault by mutual agreement utilizing a cross-functional team.

Q. What process do we use to alter or create a document?

42.0302.414 - Create, Change, Review Approve Controlled Documents.

This procedure describes the activities that:

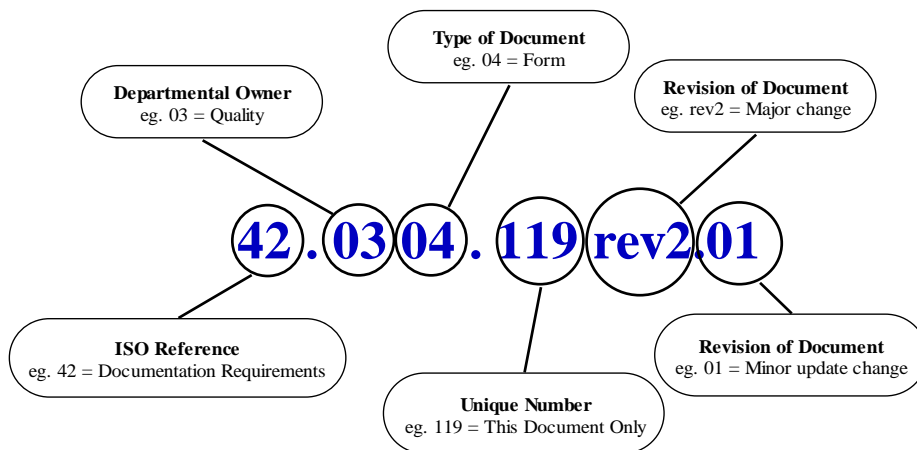
- Provide access for everyone to request a change to either improve or correct documents.
- Controls correctional changes while reviewing to approval ensuring only current documents are available.
- Closes-out a documented fault by mutual agreement as needed.

Q. Have the numbers on the documents a reference meaning?

42.0304.119 – Document Number Management Form.

This form describes the references that:

- Allow document searches using the number as a reference per department, owner, type and ISO ref.
- Provide a unique number that will not be duplicated.
- Carry a revision reference to determine which documentations are current.



1- Decide which DQS 2000 category	2 - Decide which Department within the CATEGORY	3- Decide which type	4 - Allocate Unique ID Number	5 - Allocate Status
CATEGORY	DEPARTMENT	TYPE	SERIAL #	Revision
XX	XX	XX	XX X	X XX
Document CATEGORY No.	Owner	Common Characteristic	User Ref.	ISSUE REV.
4 - Quality Management System	91 - CEO Directors	91 - Standard Operating procedure - SOP	Specific Unique Number allocated in Database 0001,004,000,000 etc E.g. 001,002	1 00=Orig
4.1 General Requirements	92 - Accounts	92 - Work Procedure - WP		2 01=1st
4.2 Documentation Requirements	93 - Quality Management	93 - General Instruction - GI		3 02=2nd
5 - Management Responsibility	94 - Innovation & New Business I&NB	94 - Controlled Form - CF		4 03=3rd
5.1 Management Commitment	95 - Human Resources & Facilities	95 - Controlled File Format - CFF		5 04=4th
5.2 Customer Focus	96 - Sales	96 - Template - T		6 05=5th
5.3 Quality Policy	97 - Applications	97 - Build Instruction - BI		7 06=6th
5.4 Planning	98 - Service & Support	98 - Company Policy Document - CPD		8 07=7th
5.5 Responsibility, Authority and Communication	99 - Production	99 - Document - DOC		9 08=8th
5.6 Management Review	10 - Engineering	10 - Health & Safety Instruction - HSI		09 09=9th
8 - Resource Management	11 - Technology	11 - Manual - M		
6.1 Provision of Resources	12 - R&D Inc.	12 - Publication - PUB		
6.2 Human Resources	13 - Sales	13 - Quality Document - QD		
6.3 Infrastructure	14 - Asia	14 - Reports - REP		
6.4 Work Environment	15 - Marketing	15 - Specification - S		
7 - Product Realization (Operations)	16 - Software	16 - Service Instruction - SI		
7.1 Planning of Production	17 - Purchasing	17 - Signs - S		
7.2 Customer Related Process	18 -	18 - Test Instruction - TI		
7.3 Design & Development	19 -	19 - Test Specification - TS		
7.4 Purchasing	20 -			
7.5 Production & Service Provision	21 -			
7.6 Control of Monitoring and Measuring Devices	22 -			

7 SPECIFIC ISO PROCEDURAL REQUIREMENTS

7.1 Documented Procedures Required To ISO9001:2008

ISO Ref	Title	JVSUK Ref	Title
4.2.3	Control of Documents	42.0302.414	Create, Change Review Approve Controlled Documents
4.2.4	Control of Records	42.0302.454	Records Procedure
8.2.2	Internal Audit	82.0302.531	Internal Auditing procedure
8.3	Control of Non-Conforming Product	83.0302.165	Non-Conforming Product Process
8.5.2	Corrective Action	85.0302.434	Corrective Preventive Action
8.5.3	Preventive Action	85.0302.434	Corrective Preventive Action