Nokia Siemens Networks

Quality Manual

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1. Introduction

The purpose of this manual is to provide a broad overview of the main principles and processes applied within Nokia Siemens Networks, for all personnel.

More detailed information is available on the Nokia Siemens Networks' Intranet Pages, and in the relevant guidance documents. References to the intranet are hyperlinks within this document, and when printed are shown underlined.

The reference material is company confidential and available to all Nokia Siemens Networks personnel, but is not distributed outside of the company unless permission is granted. On request (e.g. for tenders or by terms of contract) it may be given or shown to customers.

2. Nokia Siemens Networks

Nokia Siemens Networks is a leading global enabler of communications services, providing a complete, well-balanced product portfolio of mobile and fixed network infrastructure solutions, whilst also addressing the growing demand for services throughout the technological lifecycle of those products and solutions.

Nokia Siemens Networks combines Nokia’s Networks Business Group and the carrier related businesses of Siemens Communications with operations in some 150 countries supporting 600 customers. Over 1 billion people connect through Nokia Siemens Networks switches!

The organization’s vision, strategic direction and key business measures are defined and communicated during the yearly strategy process.
3. Mode of Operation

The Nokia Siemens Networks Mode of Operation, which is derived from market needs and dynamics, alongside the product portfolio, brand and culture define how the organization works and lay out the key design principles, process areas, organizational set-up and key accountabilities and governance to be followed.

The key design principles determine how the organization is managed and have been developed from the brand values of pioneering, passionate and pragmatic, enabling us to provide customers with:

- new ways of working – from product vendor to solutions partner
- new ways of thinking, based on the insights into the market, technology and consumers, and
- new efficiencies, through solutions that make the best use of customers' existing assets

Creating the company culture of Nokia Siemens Networks will take time, is the responsibility of everyone and involves the integration of many aspects of the business including processes, customer relationships, the brand, the code of conduct, recruitment operations etc.

Six target values, (supported by eight sets of individual commitments) have emerged from the earlier cultural direction statements and surrounding discussions:

- We win together
- We innovate solutions
- We focus on customer success
- We communicate openly
- We inspire
- We build communities

In addition, the highest standard of ethical behaviour must always be a deeply embedded part of the organization's culture, as defined in the code of conduct which elaborates on our respect for:

- Ethics and the Law
- Human Rights
- Equitable workplace practices
- An environmentally sustainable business that extends to our supply chains
- Our commitment to work against bribery and corruption
4.  Organisation

Nokia Siemens Networks consists of two main organizations, **Customer and Market Operations** and **Communication Technology and Operations**, as shown in figure 1 below.

Supporting these are the key functions of, **Finance**, **Human Resources**, **Business Excellence**, **Strategy & Business Development**, **Corporate Affairs**, **Legal** and **Communications**.

![Figure 1 – Nokia Siemens Networks Organization as at 1 April 2007](image)

4.1  Customer and Market Operations

Customer engagement within Nokia Siemens Networks is driven by the **Customer and Market Operations** organization, which steers global marketing and sales operations and is responsible for operations directly addressing the customer.

Customer and Market Operations consists of:

- Customer Teams are the key entities in serving our customers and are responsible for the complete business and customer relationship with a specific customer. In the case of a larger customer group, the Customer Teams are managed by **Customer Business Teams** (CBTs) or by **Regions**, which cover a specific geographical area.
• **Solution Sales Management** supports the execution of the Business Units sales strategies through the account team structure, including product and solution marketing.

• **Marketing** is responsible for branding and for marketing and customer communications, as well as for the respective marketing channels.

• **Services Business Unit** consists of four global Business Lines, supporting customers over the whole technological lifecycle and covering the full range of carrier network technologies. The four business lines are: Care, Consulting and Systems Integration, Managed Services and Network Implementation.

4.2 Communication Technology and Operations

The **Communication Technology and Operations** organization globally executes research, designs and manufactures products, and manages the Nokia Siemens Networks product portfolio.

The four overarching design principles of, customer-focus, end-to-end optimization, performance and simplicity define the structure of Communication Technology and Operations and the main responsibility is defined as to deliver superior products, system and solutions, provide best-in-class service levels and ensure a low cost base – for both the company and its customers.

Communication Technology and Operations consists of:

• **Research Technology & Platforms** support all of the business units to ensure that as a company, NSN have world leading technology capabilities and optimum synergies across the business units.

• **Operations** are responsible for manufacturing, materials, supply planning, direct sourcing & procurement and logistics.

And five product business units:

• **Radio Access** has three Product Management Units of GSM & WCDMA, Long Term Evolution and Broadband Wireless, thus supporting all the key radio access technologies and enabling customers to maximize profits with leading multiradio solutions.

• **Broadband Access** provides complete solutions to enable operators to increase their efficiency and build higher capacity in a market driven by an increasing bandwidth demand to support Next Generation IP Networks.

• **Service Core & Applications** focuses on the customer’s demand for new revenue-generating services whilst simultaneously ensuring existing business profitability, through a portfolio that ranges from multimedia applications to optimized voice solutions for a converged world of different access methods – fixed and mobile.
• **IP Transport** has a comprehensive product and system portfolio, divided into four areas, in order that network operators can increase their revenues by improving time to market and optimizing life cycle costs for their service offerings.

• **Operations & Business Software** is made up of four key businesses, providing interoperable software to automate operations and business processes, thus reducing complexity and improving business performance within our customers’ organizations.

5. **Processes**

Nokia Siemens Networks Mode of Operation defines the four key fundamental process areas within the business, i.e. common process definitions for an efficient and effective organization with common ways of working across the globe.

![Figure 2 - Nokia Siemens Networks Process Architecture](image)
5.1 Customer Process Area

The Customer Process:

- defines Nokia Siemens Networks offering/customer solution based on customer understanding
- creates and captures demand for Nokia Siemens Networks’ brand and products
- sells all products (platforms, hardware, software, systems, services and solutions), and
- manages customer interaction throughout the relationship lifecycle

The Customer Process consists of three process areas; Marketing Process, Sales Process and Marketing and Sales Management Process, as shown below:

![Figure 3 – Nokia Siemens Networks Customer Process](image)

The Marketing Process aims to define the way of working in marketing organizations in order to assess market attractiveness, develop Nokia Siemens Networks value proposition and support the sales force in delivering superior value to customers.

![Figure 4 - Nokia Siemens Networks Marketing Process](image)
The Sales Process ensures pro-active opportunity development and solution development together with the customer. The process provides a structure for sales opportunity management and decision making and the definition includes the key phases and decision milestones, tasks and activities, key roles and responsibilities, and tools and templates.

![Figure 5 – Nokia Siemens Networks Sales Process](image)

The Marketing and Sales Management Process consists of three subprocesses:

- Pricing Strategy Definition – pricing guidelines and pricing structure at a global level
- Global Sales and Marketing Planning – long term planning (LRP) and short term planning (both STP and LE)
- Customer Business Development – strategy and planning, customer selection and new country entry process

5.2 Product Process Area

The main objectives of the Product Process are to:

- create value for customers by developing innovative products
- optimize product offerings to match with chosen strategies
- use R&D investment efficiently and effectively, and eliminate waste
- enable flexible and agile product development
- ensure high product quality

The Product Process consists of five major process and support and enabling processes defining how products are developed and how product development and management is carried out.
The Architecture Management Process defines how the definition, creation and management of Architecture strategy and assets are carried out at all levels, including managing compatibility and ensuring interoperability of products. It aims to optimize the technical competitiveness of products and Research and Development efficiency.

The purpose of the Portfolio Management Process is to optimize product offerings to ensure execution of the Nokia Networks Siemens strategy and to maximize the return of investment for the business.

The scope of both the Architecture and Portfolio Management Processes is the whole Nokia Siemens Networks product offering while the rest of the processes focus on individual products.

The Product Management Process defines how individual products, releases and features are managed from initiation to ramp-down, and maximizes the product business throughout the lifecycle. The key driver is to use the investment for the product as efficiently and effectively as possible by leveraging value based decision making through all decision levels (Product, Release, Feature).

The Program Management Process defines how product programs are managed and provides an effective and efficient framework for program and project management in product development.

The Release Creation Process, defines how products are developed, tested and piloted and also defines how the capabilities for delivery, services, support, marketing and sales are created.

5.3 Delivery Process Area

The Delivery Process consists of two sub-processes, Demand-Supply Planning and Demand Fulfillment and six delivery models, Product, Software, Project, Care, Managed Services and Consulting.

The sub-processes describe the key tasks, roles and IT systems and their relations across Nokia Siemens Networks functions, and the delivery models describe how the joint processes are applied for different Nokia Siemens Networks businesses.

![Figure 7 – Nokia Siemens Networks Delivery Process](image)

5.4 Management and Support Process Area

The purpose of the Management and Support Process Area is to:

- define strategy, business portfolio and business models
- ensure implementation through common planning and follow-up processes in all levels of management.
- deliver expert services and support for business and management processes.
The purpose of the Management Process is to ensure optimal strategy, business portfolio, business and operational models through common planning, implementation and follow-up processes in all levels of management. The process is broken down into three areas:

- Strategic Planning and Review
- Financial Planning and Control
- People Management

The support processes ensure effective and efficient delivery of expert services and support for the core business processes, and cover the areas of:

- Purchasing
- Quality Management
- Environment, Health and Safety
- Process and Information Management
- HR Support
- Real Estate Management
- Intellectual Capital Management
- Enterprise Content Management
- Financial Management

6. Quality Management

The quality management system is the part of the management system that focuses on the achievement of outputs (results), in relation to the quality objectives, to satisfy the needs, expectations and requirements of interested parties. The quality objectives complement other objectives such as those related to growth, funding, profitability, the environment and occupational health and safety.

The various parts of Nokia Siemens Networks management system are integrated, together with the quality management system, into a single management system as defined by the Mode of Operation, using common elements, including planning, allocation of resources, definition of complementary objectives and evaluation of the overall effectiveness of the organization.

Nokia Siemens Networks and its organizational units issue documented policies and strategies on many business related topics, access to which is via the Nokia Siemens Networks Intranet. Those related to quality are shown below.

Quality at Nokia Siemens Networks is about meeting and exceeding our customer expectations, and is hence embedded in business strategies, daily decisions, actions and our normal way of working, to ensure that we all deliver value to our customers to ensure their continuing loyalty.
The Quality Strategy for Nokia Siemens Networks is:

‘Customer Loyalty Leadership with Competitive Costs’

and encompasses the following:

- the use of Nokia Siemens Networks quality elements across the organization
- systematically managing customer loyalty
- managing non-conformance costs and eliminating waste
- proactively improving supplier quality

The quality elements are minimum requirements to ensure that we:

- work in an appropriate and systematic way
- have a basic infrastructure in place to ensure quality management
- constantly implement improvements,

and can be seen in the Nokia Siemens Networks quality framework shown below.

Figure 8 – Nokia Siemens Networks Quality Framework
The five elements are:

- **Customer Focus** – Nokia Siemens Networks looks to develop a deep customer insight in order to understand their wants and needs, and aims to meet these with the products, services and solutions offered, whilst continuously striving to exceed their expectations. To achieve this, the organization, processes, thinking and acting towards the customer must be aligned.

- **Fact Based Management** – decisions within Nokia Siemens Networks are based on the analysis of data and information. Business driven metrics and Key Performance Indicators are developed and employed to enable and support this, and cover for example, customer satisfaction, product testing, process monitoring, supplier performance, service level achievement etc.

- **Preventive Quality Management** - careful planning and realistic target setting within our activities, along with preventive methodologies, ensures faults and the associated costs are avoided. Analysis of root causes enables avoidance of similar issues in the future.

- **Continuous Improvement** - Nokia Siemens Networks strives to continuously improve performance in all activities in order to steadily improve customer satisfaction and to increase profitability. A portfolio of methods and tools are available to support and enable such activities. Good practices are systematically collected and transferred across the organization as appropriate, and lessons are learnt from customers, suppliers, competitors and colleagues. **Focused, prioritized, strategic change projects**, set by the Nokia Siemens Networks Executive Board, are also run to deliver breakthrough results leading to improved productivity and bottom line results.

- **Leadership** – the leadership style within Nokia Siemens Networks motivates and inspires the organization, with the leaders acting as role models, providing direction and empowerment to enable everyone to contribute towards the effectiveness and success of Nokia Siemens Networks.

### 6.1 Management Responsibility

Quality Management is an essential and integral part of all employees’ day-to-day work. Each employee is responsible for the quality, environmental compatibility and safety of products, processes and services within his/her own particular field.

Management defines and documents the various objectives within the respective areas of responsibility. Quality and environmental factors are an integral part of this. Target attainment is regularly checked by management, for example through product / project monitoring, management reviews, audits and assessments.
All managers act as role models in order to create a quality-orientated culture. They are responsible for ensuring that the objectives, are broken down within their respective organizational unit, communicated as being mandatory, and put into effect. As part of their organizational and supervisory duties, they furthermore make sure that employees comply with all legal requirements and corporate guidelines.

The Quality Management organization supports managers and employees in reaching quality and customer loyalty targets, e.g. by coaching, monitoring, information provision, evaluation and advice. The head of Global Business Excellence Quality Management is the management representative responsible for the evolution of the quality management part of the Mode of Operation.

6.2 Management Reviews

The review of quality matters is an item for discussion within every Nokia Siemens Networks management team. Hence such reviews are normally carried out as an integral part of regular management team meetings, and as a minimum on a quarterly basis.

The review of the quality status includes:

- review of business metrics
- review of relevant quality reports
- follow-up of agreed actions
- decisions on actions to be taken

Meeting minutes are maintained.

The Mode of Operation, and hence its constituent management systems, is reviewed annually or more frequently by Senior Management. At such reviews the long term suitability, appropriateness and effectiveness of the Mode of Operation are assessed.

Inputs to such reviews include:

- Process performance and product conformity
- Customer and employee feedback
- Audit results
- Status of preventive and corrective measures taken
- Planned changes which may impact the Mode of Operation
- Follow up of actions taken as a result of previous management reviews
• Recommendations for improvement

Findings of the management review are recorded.

6.3 Internal Audits

Auditing is a universal management tool for systematically and independently evaluating processes in order to verify that activities are implemented as stated and that they are effective in providing expected results.

Internal audits within Nokia Siemens Networks are carried out in accordance with the Nokia Siemens Networks Internal Audit Process in order to:

• find opportunities to improve the quality and efficiency of processes, products and management
• identify best practices that could be transferred
• verify that operations follow established procedures and guidelines
• assure compliance to relevant management system references (e.g. ISO 9001, ISO 14001, TL9000, OHSAS 18001)
• identify risks to be able to potentially take avoidance action
• identify areas of non-conformance and highlight opportunities for potential reductions in non-conformance costs

Audits of Nokia Siemens Networks by Customers are also carried out at the request of customers and within the scope of the customers’ contract with Nokia Siemens Networks. Audit timing and schedules are mutually agreed between the Nokia Siemens Networks and the Customer.

Supplier assessments are carried out, either as part of a selection process or as an ongoing evaluation of the supplier’s performance. In either instance the relevant supplier management organization has responsibility for the organization of such assessments.

6.4 Customer Feedback

The Nokia Siemens Networks Customer Satisfaction Survey delivers feedback and analysis on the main customer satisfaction and loyalty issues, in order to:

• understand customers’ expectations with regard to our processes, products, services, marketing etc.,
• identify any strengths and weaknesses in comparison with the competition, and
• provide a sound basis for management decisions from the customers’ point of view
Survey implementation is conducted by third party vendors, twice yearly, following the short-term planning process and is either through face-to-face interview or web / telephone surveys, covering all of the main process areas and hence providing feedback for the entire organization.

The Customer Loyalty Leadership Program, a key strategic initiative within Nokia Siemens Networks, is targeted to ensure effective loyalty leadership by 2010. The program will focus on the Nokia Siemens Networks strategy phases of Consolidate, Leverage and Transform by initiating actions for Customer Retention, Customer Satisfaction and Customer Delight respectively. Only by delighting customers will loyalty be created.

The Customer Team Manager coordinates the relevant activities to enable resolution of customer complaints (technical problems are addressed by the relevant Fault Management Process). The Customer Complaint Handling Process utilizes a network of quality professionals across the organization to endeavour to resolve complaints within the timescales required by the customer.

All information within the different systems is analyzed, reported on and used as the basis for process improvement.
7. Specific Management Topics

7.1 Documentation Management

7.1.1 Information Security

Information Security is an integral part of Corporate Security to ensure confidentiality, integrity, availability and accountability of confidential business information and sensitive business processes.

The mission of Information Security at Nokia Siemens Networks is two-fold:

- Protect and Safeguard our sensitive information and business processes
- Enable and Enhance the security features of our solutions provided to the market.

Each person in the company is responsible for observing the rules of Information Security.

7.1.2 Internal Document Management

The Document Management and Archiving function is responsible for creating, managing and delivering Nokia Siemens Networks’ wide document management and archiving solutions and services to support Nokia Siemens Networks business.

ShareNet-IMS is the information and document management system and global knowledge sharing network for Nokia Siemens Networks.

Records are documents stating results achieved or providing evidence of activities performed. Process owners are responsible for defining records and their management.

The Document Retention Policy of Nokia Siemens Networks provides guidelines for use by all employees covering general principles regarding document creation, retention and disposal and specific retention schedules for specified documents or document categories.
7.2 Management System Standards and Certification

Nokia Siemens Networks is committed to ISO 9001 and ISO 14001 compliance.

An accredited third party ISO 9001 certificate is held covering all Nokia Siemens Networks activities globally. The document, Correspondence between ISO 9001:2000 and Nokia Siemens Networks Management System clarifies how the requirements of ISO 9001 are fulfilled in Nokia Siemens Networks.

Nokia Siemens Networks production units also maintain an Environmental Management Systems Certificate to the standard ISO 14001.

TL 9000 registration is maintained for certain product categories / areas of the business.

Nokia Siemens Networks Information Security practices are designed to ensure secure working practices and use the standards ISO 17799:2005 and ISO 27001:2005 as the framework. Although not a corporate objective for Nokia Siemens Networks to seek global certification to these standards, individual areas of the business, processing Nokia Siemens Networks’ customer information may seek accredited third party certification.

Nokia Siemens Networks Health and Safety practices comply with the legislation in force in the countries where Nokia Siemens Networks operates, however, OHSAS 18001 registration is not a corporate objective.

Full Quality Assurance System, Annex V, as referred to in Article 10 of EC Directive 1999/5/EC (R&TTE) is maintained and certified by a notified body for certain product categories / areas of the business.

7.3 Corporate Social Responsibility

Corporate Social Responsibility reflects the way in which companies impact on the world around them, economically, socially and environmentally, thus resulting in responsibilities not only to shareholders and customers but to all stakeholders, including employees, business partners and the environment.

The Nokia Siemens Networks Code of Conduct is a major element of the comprehensive compliance program, designed to ensure and safeguard ethics and integrity across the business and beyond, (including suppliers and other key partners), and focusing on following sustainable business practices.

Caring for the environment is another cornerstone of the Nokia Siemens Networks approach to corporate responsibility and it is the organization intention to turn environmental performance into a value-adding asset to customers’ business, thus going beyond merely meeting mandatory requirements.

Being a responsible and respected corporate citizen also means that the organization must contribute to globalization in a fair and humane way,
therefore, Nokia Siemens Networks supports the United Nations’ Global Compact, the world’s largest voluntary corporate responsibility initiative.

7.4 Occupational Health & Safety

The health and safety of everyone working for or with Nokia Siemens Networks is a guiding principle for all Nokia Siemens Networks’ operations worldwide.

Occupational health and safety practices and established labour conditions support the efforts to protect and promote the health, safety and well being of all employees as well as reflect our responsibility as a corporate citizen, striving to make a fitting contribution to the communities in which we live and work.

Occupational health and safety, and labour conditions management is part of the overall Nokia Siemens Networks Corporate Responsibility framework. The guiding principles of the occupational health and safety and labour conditions approach are based on the Nokia Siemens Networks Code of Conduct and employment policies and practices.

7.5 Environmental Management

Nokia Siemens Networks’ environmentally sustainable business approach is based on product life cycle thinking, an end-to-end approach that factors in environmental considerations for our network products and solutions. Sustainable business can be looked at from three perspectives:

- **Customer Benefits** – through the focus areas of: materials, design for environment, supplier network management and take back and recycling, Nokia Siemens Networks strives to be an enabler to turning rising environmental interest into financially rewarding business opportunities for operators.

- **Environmentally Sound Solutions** – eco-efficiency of network solutions is one of Nokia Siemens Networks competitive assets and differentiating factors and comprises a wide range of sustainable business elements, from individual products to network system level design, including intelligent system features e.g. best-in-class energy efficiency.

- **Product Life Cycle Thinking** – in order to ensure the best solutions in the sustainable business offerings, the entire product life cycle, including materials, R&D, production, usage and recycling is considered with specific objectives and measures.
7.6 Risk Management

Inherent to its strategy, Nokia Siemens Networks takes risks to achieve growth, gain competitive advantage and deliver superior shareholder returns. Managing those risks is an important part of fact based management, and a core management capability to support the organization in achieving its targets. This is not a separate process or action but a continuous business and management practice which is the responsibility of all management and individuals within Nokia Siemens Networks.

7.7 Product Safety, Security and Liability Management

Product safety is of prime importance to Nokia Siemens Networks:

- as a means to reduce hazards and minimize risks for third parties, our customers and the company
- as a minimum criterion for product quality
- as an objective in the entire value-added process
- to fulfill legal requirements and customer needs.

Irrespective of the responsibility of the Managing Board of Nokia Siemens Networks, product safety concerns every individual company employee.

It is the task of management and all employees to ensure compliance with the current versions of all relevant operating processes, procedures and regulations (external and internal).

Product safety is not only intended to prevent liability risks, it is also a fundamental principle of conduct in our organization (see NSN Circular 02/2007).

8. Terms and Definitions

The Nokia Siemens Networks Management Glossary provides the standard definitions of key management terms and concepts used within the businesses of Nokia Siemens Networks. The information architecture and thus also the business processes and applications to support business processes are aligned to these definitions.

Quality management related terms are defined in ISO 9000.