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Supply Chain Risk Management Guideline

RATIONALE

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1. SCOPE:

Supply Chain Risk Management (SCRM), defined in this guideline, can be applied proactively for the protection of all procured products and services; both flying and non-flying through all levels of the supply chain.

The guideline focuses on Quality as a key risk assessment factor taking into account elements from all aspects of the business having a direct link to global quality management. This concept/model is shown in Figure 1.

While traditional “small q” Quality is a key element to be assessed, from a company business point of view, other elements play an important part in minimizing risk. This guideline defines such risk factors for consideration.

SCRM as a business protection tool will be most effective when used to identify, and reduce risks when generating new business with new and existing suppliers. However, the tools and techniques described hereafter can also be applied to evaluate the existing supply chain network and determine the level of control required.

The SCRM can be applied by merging identified risk factors associated with procured products or services and the supplier itself with the target for overall supplier quality risk management (see Section 6).

This guideline is recommended to be cascaded to sub-tier suppliers in the supply chain.

1.1 Purpose:

Aerospace businesses depend upon a complex network of suppliers, each one exposed to a different assortment of risks that could jeopardize supply businesses. Because supplier networks are becoming increasingly widespread as more suppliers across the world become available to the industry (some in countries that are not covered by recognized national and international aviation authorization), early identification and management of those supply chain risks that could affect product/service quality becomes increasingly necessary. The application of supply chain risk management provides business protection by ensuring the continued success of the customers supply base in delivering products/services in accordance with program and quality requirements.

Quality Risk Assessment Model

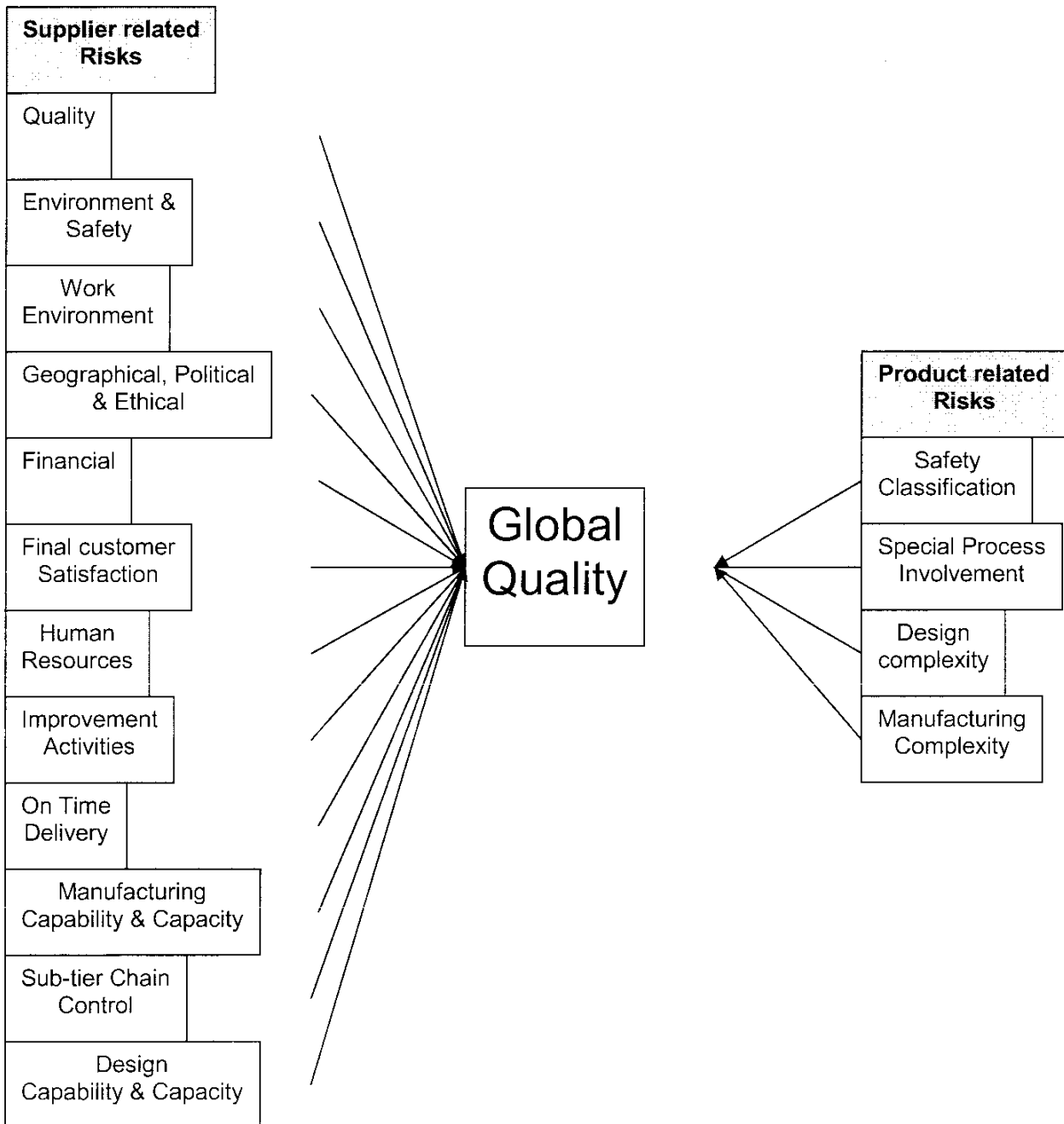


FIGURE 1 - Quality Risk Assessment Model

1.1 (Continued):

Supply chain risk awareness should be part of an integrated business culture.

This document may be used as an “aide memoire” to supplement the existing risk management philosophy of the user. As such, each user of the guideline is free to apply it to its own selected/categorized suppliers, and to select, according to their needs, the risk factors and associated elements to be assessed.

Documented risk factors and elements to be assessed are not exhaustive and may be enlarged by the respective risk factor owner.

The frequency of reassessment is the responsibility of each user of the guideline (e.g., 6 months; 12 months; 2 years, etc.).

1.2 Guideline of the Document:

Quality risk identification and recording is the responsibility of everybody associated with Customer procured products and services.

This may also include Purchasing, Contractual Logistics, Finance, Cost Estimating, Engineering (all design and manufacturing disciplines), Configuration Control, Project, Operations and Business Management, etc.

Having identified and recorded a risk that could affect quality, it is essential that the risk is managed effectively through a designated person/department.

As a means of managing the risk process it is recommended to use the “risk register form” (Appendix B) and the “risk assessment scoring chart” (Appendix A).

2. RISK FACTOR DEFINITION:

2.1 Supplier Risk:

The following table provides a list of factors, which if not met, lead to supplier related risks:

TABLE 1

Quality	Capability to deliver products and/or services to the Customers quality requirement
Environment & Safety	Capability to manage environmental, health and safety factors which may affect the project/program
Work Environment	Capability to manage work environment factors such as temperature, humidity, lighting, cleanliness, protection from electrostatic discharge. etc. according to JISQ;EN/AS 9100:2001 that may affect the conformity of the product
Geographical, Political & Ethical	Capability to manage social, geographical, political, economical and ethical factors which may affect the project/program
Financial	Capability to manage financial factors which may affect the project/program
Final Customer Satisfaction	Factors that affect customers expectations
Human Resources	Human resources factors which affect the quality and confidence of the customer
Improvement Activities	Capability for continuous improvement
On Time Delivery	Capability to deliver products and/or services to the Customers scheduled requirement
Manufacturing Capability and Capacity	Capability to provide manufacturing services in accordance with the contract requirements
Sub-tier Chain Control	Capability to manage and control all sub-tier suppliers in the supply chain
Design Capability and Capacity	Capability to provide design services in accordance with the contract requirements

2.2 Product Risk:

The following table provides a list of factors, which if not met, lead to product related risks:

TABLE 2

Safety Classification	In accordance with regulatory authority requirements
Special Process Involvement	Those processes where the parameters are directly influenced by component, geometry and/or the results cannot be confirmed by inspection
Design Complexity	Capability to design innovative solutions that meet customer requirements
Manufacturing Complexity	Capability to manufacture components to meet the design intent

3. PROCESS STEPS TO APPLY THE GUIDELINE:

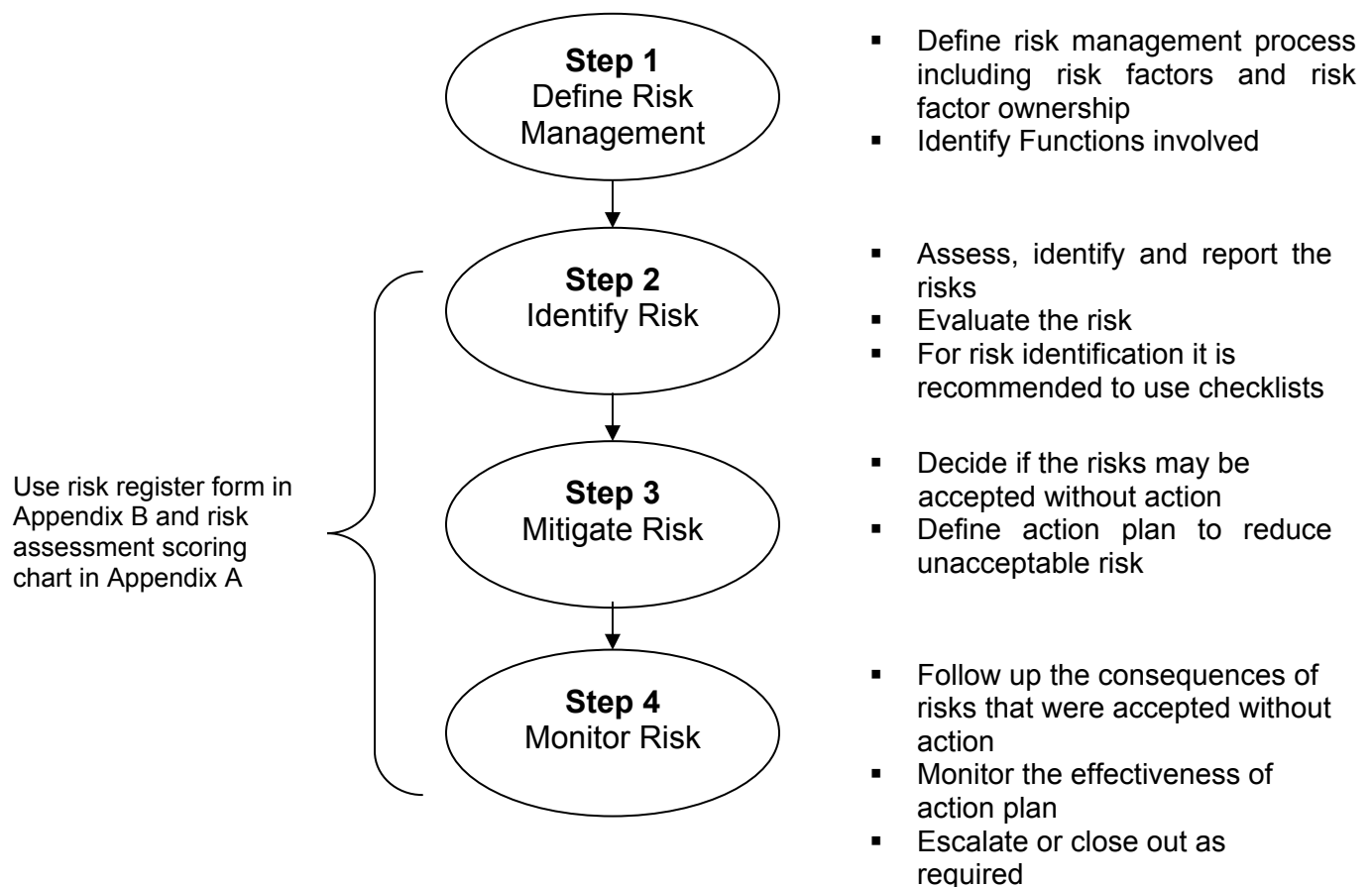


FIGURE 2

4. SUPPLIER RISK TABLES FOR GUIDANCE:

TABLE 3

Risk Factors	Element for Assessment	Risk Identification Tools	Risk Reduction Control Tools
Quality	- Quality System Approvals/certification ➤ Aerospace (JISQ, AS/EN9100 series, regulatory authority requirements etc.) ➤ Non Aerospace Customer - Special processes approval/certification (customers, NADCAP, etc.) - Previous supplier experiences on similar products to be identified - Current Aerospace Customers references - Contract review process - Quality performance indicators (e.g. scrap, concession rate, quality system scoring result, Customers audit results, etc.)	- Checklists covering elements to assess risk e.g. : ➤ Quality System assessment per SJAC, AS/EN9101 with scoring results ➤ Supplemental checklist for other elements	- Continuous Improvement plan agreed by suppliers with suppliers mandatory indicators and corrective action request - Quality Assurance Plan - Specific training on identified weaknesses and specific requirements - Selection of relevant parts - Increased products receiving inspection - Identify frozen process parameters - Assistance on site (including people on site for a limited time) - Mandatory FAI per SJAC, AS/EN 9102 - Management of process variation (SPC) - Unscheduled requirements delivery versus MRP - Dual source - Buffer stock

TABLE 3 (Continued)

Risk Factors	Element for Assessment	Risk Identification Tools	Risk Reduction Control Tools
Geographical, Political & Ethical	• Political regime • Restriction on government funded design and manufacturing technology transfer to specific nations • Government export and import restrictions • Export credits, support & guarantees government handling • Tax & customs rules • Government policy for counter trade and off set • Potential for natural disasters • Country economical aspects (inflation, gross national product per inhabitant, average wages, economical growth, export level, import level, external debt, interest rate, Energy cost, etc.) in relation to developed countries. • Visit of plant for ethic aspect in compliance with ILO 182 clauses (child employment)	• Specific checklist covering element to assess • Various web and government sources	• Mitigation plan • Dual source • Buffer Stock • On Site surveillance assistance • Translator for Prime's language • Specific clauses on the purchase contract for child care • Supplier stoppage with recovery plan (child care)