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## PROCESS AND PROCEDURES FOR THE ACQUISITION OF ARMAMENTS WITHIN THE DEPARTMENT OF DEFENCE

- Reference A: MODD/Acq/1/2004 - Acquisition Of Armaments in the DOD  
 B: DODI/Acq/5/2003 (Edition 2) - Acquisition Of Armaments in the DOD  
 C: RSA-MIL-STD-004 Acquisition Glossary  
 D: Armaments Corporation of South Africa Ltd. Act, Act No 51 of 2003  
 E: White Paper on SA Defence Related Industries  
 F: DODI/Pol & Plan/5/2000 Policy and Process on Disposal and Alienation of DOD Movable Assets  
 G: DODI/CFO/1/2002 Risk Management in the DOD  
 H: Preferential Procurement Policy Framework Act, Act No 5 of 2000  
 I: DODI/SG/2/99 Policy on Defence against Chemical and Biological Weapons  
 J: Defence Special Account Act, Act No 6 of 1974, as amended  
 K: DODI/FIN/00011/2000 Policy on Budget Preparation in the DOD  
 L: DODI/FIN/00002/1999 Budget Control within the DOD  
 M: DODI/FIN/00014/2000 Policy & Procedure for the Reporting & Management of Losses, Damages & Claims within the DOD  
 N: Military Discipline Supplementary Measure Act, Act No 16 of 1999  
 O: Occupational Health and Safety Act, Act No 85 of 1993, as amended  
 P: DODI/Pol and Plan/64/2000 Policy on the Procedures for the Management of Cabinet Memoranda in the DOD  
 Q: Public Finance Management Act, Act No 1 of 1999 as amended

- Appendix A: Systems Hierarchy  
 B: System Life Cycle  
 C: Approval Forums  
 D: SANDF Approval Forums  
 E: AAC Constitution  
 F: AASB Constitution  
 G: AACB Constitution  
 H: Acquisition Approval Levels  
 I: Annual Budgeting Process  
 J: Adjustment Budget Process  
 K: Systems Hierarchy Integration Process  
 L: Process Flow Diagram  
 M: Technology Management Structure  
 N: Guidelines for Project Officers  
 O: List of Abbreviations

### GOVERNING PUBLICATIONS

1. See MODD/Acq/00001/2004 (Reference A) and DODI/Acq/00005/2003 (Edition 2) (Reference B).

### BACKGROUND

2. The acquisition of armaments systems is managed by means of acquisition projects. Per definition, a project is a complex activity consisting of a planned undertaking of a unique nature over a limited timeframe that has a specifically described beginning and ending, to achieve a specific objective. In the case of armaments projects, the aim is to supply a complete armaments system that will satisfy a specific operational requirement as specified

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by a user. The execution of a project involves the co-ordinated co-operation of a number of organisations, disciplines and people within the widely accepted management triangle of the DOD, Armscor and the industry.

3. This publication specifically orientates the user with regard to the overall acquisition process and prescribes the process and procedures to be followed in the acquisition of armaments in the DOD.

### AIM

4. The aim of this publication is to prescribe the process and procedure for the acquisition of armaments in the DOD.

### TERMINOLOGY

5. See RSA-MIL-STD-004 Acquisition Glossary (Reference C) and Appendix O for terminology and abbreviations.

### POLICY STATEMENT

6. This policy is applicable to the acquisition of all armaments that has as aim the improvement of the battle preparedness of the Defence Force bmo the addition of new main equipment or by upgrading existing main equipment. The provisions of this policy will apply to all personnel or organisations, who are charged with armaments acquisition responsibilities. It therefore implies that it is not the tender board involved, whether it be Armscor, the State Tender Board or SITA, that determines whether this policy applies to the acquiring activity, but whether it is the acquisition of Category 1 matériel or not. It needs to be noted that this policy in principle addresses only a that part of the life cycle of Category 1 Matériel from the origin of a requirement as documented in a Required Operational Capability (ROC) up to and including the final closure of the project as documented in the Project Closure Report. It thus covers all aspects from the Concept phase to the Commissioning Phase, which includes Introduction into Service. In exceptional cases, the Planning- and Operational phases are referred to, but the aim of this is to ensure liaison and integration with preceding and successive phases. This instruction is not applicable to Technology Acquisition (refer Technology Acquisition Policy, when completed), leasing, stockpiling, Requisitions, the acquisition of captured equipment or direct purchasing funded by the operating budget bmo State Tender Board procedures.

**NOTE:** Acquisition includes all those actions required to satisfy the requirement for a product such as requirement statement, design, development, upgrading, manufacturing and acceptance.

**NOTE:** Matériel is divided into two categories to make provision for the identification of the acquisition process involved, as well as the manner of financing. Category 1 Matériel consists of military equipment and associated parts, not commercially available, required exclusively for military use/purposes. It is acquired by means of the expenditure of capital and operating funds as budgeted for on the Financial Management System (FMS) folio 02 : Special Defence Account (SDA). Category 2 Matériel consists of commercial equipment, components, parts and supplies available on the open market that can be used by the SANDF without any alteration to or adaptation of the manufacturer's specification, his industrial process or normal standards of quality. It is acquired by means of the expenditure of operating funds as budgeted for on the FMS folio 01 : General Defence Account (GDA).

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## AUDITABLE OUTCOMES

6. The policy outcomes, ie DODI and JDP developed in terms of the Policy Directive (Reference A) shall comply with the following outcomes:

- a. Establish the Departmental Acquisition and Procurement Division (DAPD) as the nodal point with relevant organisations pertaining to all armaments acquisition activities.
- b. Provide direction for the management of the total spectrum of acquisition activities to be carried out by the participating organisations to meet the armament requirements of the DOD.
- c. Reflect the principles of transparency and accountability in the DOD and in Armscor.
- d. Ensure that armament acquisition activities are executed within national objectives, policies and constraints.
- e. Provide an audit trail to enable the Secretary for Defence to fully exercise his responsibility as Accounting Officer.
- f. Ensure the integrity and traceability of the decisions in the decision-making and approval process by means of baseline management.
- g. Ensure that armaments acquisition is executed by means of the systems engineering process that could be tailored for the uniqueness of a specific acquisition project.
- h. Ensure that the entire acquisition process will be based on seeking best value for money and minimum risk to the DOD.
- i. Create the flexibility needed to manage design development as inter-related with technology development, industrial development, and production during the process of armaments acquisition.
- j. Establish the mandate for the training of acquisition staff.

## SECTION 1

## CHAPTER 1: ACQUISITION POLICY CONTEXT

## INTRODUCTION

1. For the SANDF to carry out its functions, the availability of appropriate armaments is essential. Armaments are obtained through a process of armament acquisition. This policy will direct the DOD armaments acquisition process. Procurement and Technology Management in the DOD will be governed by separate DOD policies.
2. Where there may be any conflict between the contents of this document and that of any of the above-mentioned references, then the contents of the referenced documents shall take precedence over the stipulations of this policy.

## SCOPE

3. This instruction identifies the most important activities and responsibilities related to the acquisition of Category 1 matériel. Instructions from other Sec Def staff divisions pertaining to Category 1 matériel are, however, referred to and form part of this instruction. Given that the instruction is the highest acquisition document within the DOD, subservient components are to compile their own internal acquisition policies within the framework of this instruction.

## ACCOUNTABILITY AND RESPONSIBILITY

4. Parliamentary Committees. The mandate of the parliamentary committees on defence is to provide an oversight function to direct the DOD in its acquisition programmes. This oversight function will include guidance to the DOD with respect to relevant facets of the acquisition process, specifically with respect to Cardinal Programmes (See Section 1, Chapter 5, par 10).
5. Cabinet Committees. The DOD is a member of three government clusters, namely the Justice, Crime Prevention and Security (JCPS) cluster, the International Relations, Peace and Security (IRPS) cluster and the Governance and Administration (G&A) cluster. Acquisition strategy must not only make provision to meet its own objectives, but also where applicable contribute towards the achievement of the objectives of these clusters.
6. Minister of Defence. The ultimate political authority and responsibility for the acquisition function is vested in the Minister of Defence. The Minister of Defence is responsible for the execution of the defence function of Government.
7. Secretary for Defence. The Secretary for Defence, as Accounting Officer of the DOD, will perform such duties and functions as detailed in the PFMA, Section 38 (a-c).
8. Chief of the SANDF. With respect to acquisition, the Chief of the SANDF states and specifies the capabilities required in terms of equipment, facilities and services to fulfil the SANDF's specified obligations, roles, functions and tasks. The Services participate in these need statements and also participate in the various acquisition planning and approval forums in order to execute their task of preparing and providing forces to Chief of Joint Operations.

9. Chiefs of Services and Divisions. With respect to acquisition, the Chief of Joint Operations and the Service Chiefs are responsible for :

- a. Stating of the acquisition requirements and providing adequate and appropriate resources (manpower, facilities, material and finances) for execution by Departmental Acquisition and Procurement Division (DAPD).
- b. Staffing of approved DAPD structures in consultation with and for approval by Chief of Acquisition and Procurement.
- c. Participating in the formulation of the Required Operational Capabilities (ROC).
- d. Formulating the Staff Target (ST) and initiating its approval process.
- e. Validating the Staff Requirement (SR) and User Requirement Statements (URS).
- f. Initiating Staff Target (ST) amendments, for facilitation of authorisation by DAPD.
- g. Recommending candidates for staffing, staffing project teams and providing the required resources law the SLA between DAPD and the SANDF components. This is done in consultation with the Chief of Acquisition and Procurement.
- h. Participating in option and final selection in terms of military preference against an approved military value system.
- i. Participating in acquisition approval forums.
- j. Monitoring acquisition progress in terms of compliance with user requirements.
- k. Participating in Operational Test and Evaluation (OT&E).
- l. Participating in qualification and certification processes and certifying the system as being fit for use.
- m. Participating in the handover process.
- n. Accepting systems into service.
- o. Identifying and preparing individuals groomed in the military culture and corps/squadron/flotilla specialisation for formal training and application as project officers.
- p. Ensuring sufficient budgeting for project/programme auditing by the IG DOD.

10. Chief of Acquisition and Procurement. The Chief of Acquisition and Procurement is responsible for directing and co-ordinating all acquisition and procurement activities between the services and Armscor. The DAPD serves as a single nodal point between the DOD and

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Armscor. The Chief of Acquisition and Procurement is the process owner for acquisition and procurement of Category 1 (Defence) and Category 2 (Commercial) items within the DOD. The Chief of Acquisition and Procurement is also the chief policy adviser to the Secretary for Defence as the Accounting Officer. The Chief of Acquisition and Procurement is furthermore responsible to

- a. provide the DOD with an ability to manage the acquisition of matériel and services in the most cost effective manner;
- b. direct and co-ordinate the overall acquisition process;
- c. fulfil the role of tasking authority for DOD acquisition services;
- d. participate in the Strategic Direction Process;
- e. act as nodal point from the DOD to Armscor for all Acquisition issues;
- f. be the custodian of the SANDF Capital Acquisition Master Plan (SCAMP) and technology master plans;
- g. participate in the formulation of DOD requirements by the clients;
- h. manage the acquisition documentation approval process;
- i. manage the Defence Technology and Operational Research (OR) requirements base;
- j. establish and manage project teams in conjunction with Armscor as required;
- k. generate relevant policy for and participate in the tender evaluation and contracting processes for Category 1 matériel, technology and services, in conjunction with Armscor, focussing on performance and budgeting issues;
- l. oversee and participate in the evaluation and contracting processes for Category 2 matériel and services which are managed by Armscor, and manage the tender and contracting processes for Category 2 matériel and services which are not executed by Armscor;
- m. liaise with other government departments and interest groups with regard to acquisition matters;
- n. liaise with foreign Ministries of Defence (MOD's) with regard to acquisition matters;
- o. execute acquisition financial management including Financial Authority (FA) authorisation;
- p. provide acquisition management information;
- q. manage DAPD allocated human resources (HR);
- r. manage the acquisition business plan;

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- s. report to the Head of Department with regard to the acquisition process performance;
- t. participate in government-to-government agreements;
- u. direct and oversee the execution of Defence Industrial Participation (DIP) and compliance obligations and facilitate the implementation of corrective measures with respect to deviations in the execution of National Industrial Participation programmes;
- v. manage the Alternative Service Delivery Centre (ASDC);
- w. establish policies and procedures, with the co-ordination of the Chief of Joint Support (HR Support Centre), for the effective management of the acquisition work force within the DOD, including accession, education, training and career development; and
- x. implement risk management.

11. Armaments Corporation of South Africa Ltd. Armscor is the primary acquisition agent of the DOD, created to satisfy SANDF requirements for Category 1 Matériel in accordance with formal acquisition plans. Armscor is fully and solely accountable and responsible for professional program management and the contracting of industry on behalf of DAPD during the execution of armaments acquisition programmes (Reference D). This is to ensure that the technical, financial and legal integrity in project management is in accordance with DAPD technical, financial and timescale requirements. The DOD and Armscor will jointly oversee industrial development of the industry in order to support DOD acquisition programmes. During acquisition, agreements will be reached regarding which phases, and to what extent, these phases of a project need to be executed. Phases are then completed stepwise until the final agreement is reached, as specified in the Acquisition Plan (AP).

12. Management Interaction. The DOD, Armscor and the industry are inseparable partners in the entire acquisition process. These parties are continuously involved in the process, but each fulfils separate functions at various levels of the system hierarchy (Appendix A) in accordance with management responsibilities for that level. Responsible management interaction at each level is a prerequisite for effective project management. A Memorandum of Understanding (MOU), supported by a Programme Master Plan, is jointly compiled to ensure healthy management interaction between the DOD and Armscor. Although the content may comprise primarily standard procedures, this practice will provide for unique circumstances of the project. The underlying rules for successful joint management of a particular project with its accompanying unique character/management requirements, are thus agreed. The MOU should also spell out the applicability of specific DOD and Armscor policies and practices to be adhered to by joint project teams.

13. Contract Administration. Armscor, as the acquisition authority, negotiates contracts in response to requirements stated by DAPD to satisfy SANDF requirements. The SANDF/DAPD may not, within the context of this policy, liaise directly with a potential or existing contractor, whether local or overseas, with the intent to negotiate or amend a contract, unless such right has been agreed upon. If the SANDF/DAPD has to liaise with a contractor during any phase of the life cycle with the intent to reach or amend any agreement, Armscor is to be involved. On the other hand, Armscor may not negotiate a contract on behalf of DAPD that does not meet SANDF requirements, or amend a contract

that alters performance, budget or timescales without DAPD agreement, as the SANDFs operational requirement may not be met or DAPDs financial scheduling may be negatively effected. The extent of interaction between the respective parties on any specific programme will be formalised by means of agreement in the MOU.

14. Contract Amendments. Revision of acquisition activities remains the prerogative of the DOD. The Chief of the SANDF may at times review priorities which may lead to delays, or in certain cases, cessation of acquisition activities. Such revision should only be considered in exceptional cases, and, when necessary, be done in a co-ordinated fashion between the DOD and Armscor. Furthermore, it is to be ensured that the full implications of the revision are considered during decision making and that the SANDF accepts full responsibility for any fruitless expenditure that may arise as a result of the implementation of such reviews. Nevertheless, Armscor is responsible to ensure that the AP is at all time practically feasible.

15. Armscor is furthermore responsible to

- a. provide technical consultancy, technical assurance and technical baseline management;
- b. execute risk management;
- c. execute quality management;
- d. execute reliability, availability and maintainability management;
- e. establish and manage project teams and provide required resources in conjunction with DAPD;
- f. manage and execute tender and contracting processes with an appropriate database;
- g. direct and oversee the drafting and application of value systems;
- h. ensure compliance with national procurement legislation;
- i. adjudicate tenders, focussing on commercial and technical aspects in conjunction with DAPD;
- j. liaise with other government departments with respect to acquisition issues;
- k. participate in government-to-government agreements;
- l. facilitate industry-to-industry liaison;
- m. manage compliance obligations;
- n. render marketing support to industry;
- o. manage and execute contract placement and administration to ensure the technical, financial and legal integrity during contracting and execution. This includes an independent quality assurance function;

- p. report on contractual deviations to Chief of Acquisition and Procurement;
- q. render administration, programme management and support during contract execution, namely:
  - i. Project Team support during foreign acquisition activities.
  - ii. Invoice administration and settlements.
  - iii. Custodianship of technical documentation during the acquisition and/or operational phases as required.
  - iv. Configuration management of project related documentation generated during contract execution (normally part of the Master Record Index (MRI) of documentation).
  - v. DOD asset register management for equipment loaned to the industry.
  - vi. Specialist import and export services during acquisition.
  - vii. Technical baseline and quality acceptance of deliverables.
- r. oversee the maintenance of an appropriate industrial base, including technology support as contracted by DAPD;
- s. manage applicable strategic centres of expertise (eg Test and Evaluation facilities, research establishments, etc);
- t. manage DIP issues.

16. Defence Related Industry. The services of an efficient domestic defence related industry are required to address the maintenance, upgrading and where necessary, the replacement of weapons and equipment to enable the SANDF to meet its constitutional obligations. The industry will permit the cost-effective purchase of certain products and systems, ensure life cycle maintenance and support of such systems, and perform refurbishment and upgrades of existing equipment. Although the DOD/Armscor will endeavour to contract local industry as far as is practicable, the defence equipment required by the SANDF cannot and should not be procured exclusively from the local industry. Many complex systems can however not be produced domestically and will have to be imported with joint participation of the local industry (Reference E).

#### PARLIAMENTARY OVERSIGHT

17. The Joint Standing Committee on Defence (JSCD) will have an oversight function to provide guidance to the DOD with respect to relevant facets of its acquisition programmes. This oversight function will include guidance to the DOD with respect to timing of tenders, counter trade obligations, and acquisition prioritisation. The DOD will submit bi-annual and ad hoc reports to the JSCD on all acquisition activities. The DOD will keep the JSCD abreast of developments in all its cardinal acquisition programmes, and will inform the JSCD at all relevant stages of such acquisition.

## CHAPTER 2: ARMAMENTS ACQUISITION SYSTEM LIFE CYCLE: STRATEGIC DIRECTION

### MANDATE OF THE DEPARTMENT OF DEFENCE

1. The Constitution, the Defence Act, the White Paper on Defence and the Defence Review mandate the DOD. These laws and policies both direct and guide the execution of the defence function of the DOD and the SANDF. All departmental policies and plans (including acquisition policy) are drawn up and executed in accordance with these and other relevant laws, policies and executive direction. The execution of the defence function is however not open ended, but specifically tied to a financial allocation in context of the relative importance of this function, compared to other governmental priorities and obligations.

### ALIGNMENT WITH CABINET PRIORITIES

2. The DOD is a member of three Government clusters, namely the JCPS Cluster, the IRPS Cluster and the G&A Cluster. The DOD's plans must therefore not only make provision to meet its own objectives, but also to contribute towards the achievement of the objectives of the clusters to which it belongs.

### STRATEGIC PROFILE

3. Overview. The DOD's vision, mission and aim which are derived from the mandate contained in the Constitution, are long-term in nature and are the basis for the SANDF Force Design required to produce the SANDF's Capabilities needed to execute the SANDF's mandate. The extremely high cost of modern weapons systems, the length of time required introducing the systems into service and the relatively long life spans of modern weapons systems require the DOD to make long-term (thirty year) capital Acquisition Programs. Similarly the high level of skills required by the personnel operating, supporting and maintaining the weapons systems require the development of long-term human relations and training plans. The strategic direction (SD) for the formulation of these plans is provided by the 1998 Defence Review.

4. Defence Capabilities. The Force Design and defence capabilities are designed primarily to protect the sovereignty of the RSA and to deter aggression. In peacetime it is essential that the Defence Force's capabilities be utilised to the country's best advantage. The Defence Strategic Plan therefore contains the objectives and outputs required to fulfil the DOD's mandate as well as the priorities set for Defence in the Government's Medium-Term Strategic and Expenditure Frameworks and the Cluster priorities approved by the Cabinet annually.

5. Strategic Focus. Over the next decade the DOD will focus on acquiring the optimal level of competencies, technology and organisational structure as allowed for by the Medium-Term Expenditure Framework (MTEF). Acquiring the correct mix to become a modern and balanced defence force on the one hand but affordable on the other hand is the underlying aim pursued by this policy.



## DEPARTMENTAL STRATEGY

6. Business and Military Strategy. In order to execute the DOD's mission, as derived from its mandate, an updated detailed departmental strategy, based on the Defence Review and White Paper on Defence, has been developed. The department's strategy consists of its business strategy and the military strategy. The business strategy informs the way in which the DOD will conduct its business as a State department whilst the military strategy indicates the way in which the DOD structures, prepares for and executes its mission.

## MILITARY STRATEGY

7. Background. The military strategy of the RSA is derived from the national security strategy, which in turn is formulated by Government based on the Constitution and the objectives of the Government. The reintegration of South Africa into the world and in particular African society, since 1994, has resulted in far-reaching changes to national security and therefore defence strategy. This has been guided by the ongoing human and cultural transformation of society and the Government's drive to improve the way in which it does its business. The DOD is therefore engaged in a process of reviewing and reformulating both its business and military strategy in order to ensure full alignment with the new realities.

## MILITARY STRATEGIC OBJECTIVES

8. The Military Strategic Objectives are the ends that are to be achieved by the SANDF. These objectives are not prioritised and cover the full range of military and other ordered commitments. The objectives are as follows:

- a. Defence Against Aggression. The provision of self-defence in accordance with international law against any external aggression which endangers the stability of South Africa.
- b. Promoting Security. Promoting Security means the provision of external deployment or support to enhance security in support of decisions by the executive.
- c. Supporting the People of South Africa. The supporting of the population of South Africa by means of operations other than war, during periods when the responsible state departments do not have the capacity to do so.

## MISSIONS

9. Missions are combinations of tasks that should be performed to achieve Military Strategic Objectives. The Employ Forces Strategy allow for Services and Divisions to expand on these missions by developing them into detailed objectives containing sufficient information for costing.

10. The missions have been prioritised in order to determine capability drivers. The capability drivers are the determinants for capability planning, prioritised to ensure that the focus is on the most relevant capabilities. The missions have been prioritised in terms of risk. This is explained as an exposure to danger owing to the impact of the onslaught on the security of South Africa, and the probability of the onslaught being encountered by South Africa. The prioritised missions can be found in the Military Strategy of the SANDF and is adapted from time to time as dictated by circumstances.

## MILITARY STRATEGIC CONCEPTS

11. The Military Strategic Concepts are the ways in which to achieve the Military Strategic Objectives of the SANDF. They are guidelines to the Military Command in the approach (ways) that is to be followed to implement the Military Strategy in order to meet the Military Strategic Objectives. At the strategic level, Military Strategic Concepts are intangible but become more substantial as lower levels of objectives/tasks are derived.

12. The SANDF will use the Mission Based Approach. This approach uses wartime and peacetime missions to direct the peacetime strategy for force preparation and to guide joint and multinational force preparation and force employment for incidences of conflict. The Mission Based Approach consists of the following strategic concepts:

- a. Mission Essential Training. The training of personnel in the essential knowledge and skills required to execute tasks necessary to accomplish missions.
- b. Mission Trained Force. A force prepared and supported to execute identified missions (within the parameters of the selective engagement concept).
- c. Selective Engagement. This concept of selective engagement indicates that the SANDF will execute all the prescribed missions, but will be selective in terms of the extent to which operations and tasks, emanating from these missions, will be executed. This concept implies that calculated risks will have to be taken.
- d. Strategic Positioning. This concept indicates that the SANDF is willing to proactively establish a sound security environment, supported by influencing political and military foreign relations actions, and the pre-placement of appropriate military capabilities.

## MILITARY STRATEGIC CAPABILITIES

13. Missions. The missions that will enable the SANDF to achieve the Military Strategic Objectives (ends) were prioritised and divided into three capability groupings. As these missions are considered to be capability drivers, each capability's contribution to the successful execution of each mission was considered, taking the priority of each mission into account. This constitutes the means of the Military Strategy.

14. Categories. There are four broad categories of joint strategic capabilities within a single force, which are as follows:

- a. C<sup>4</sup>I<sup>2</sup>RS (command, control, communications, computers, intelligence, information, infrastructure, reconnaissance and surveillance).

- b. Light Mobile.
- c. Conventional Warfare.
- d. Support.

### DEFENCE STRATEGIC OBJECTIVES

15. In order to ensure that the strategies described above are executed the DOD identified seven strategic objectives during the transformation process:

- a. The execution of Defence commitments as ordered.
- b. The provision of contingency ready and cost effective Defence capabilities as specified by approved policy.
- c. The administration of the DOD within the prescripts of the law and government policy.
- d. The assurance of sustainability, continuous improvement of output quality and the reduction of the cost of DOD processes as well as the accounting thereof.
- e. The assurance of the continuous quality improvement of people in the DOD.
- f. The assurance of quality command and management information in the DOD.
- g. The assurance of continuous quality improvement of SANDF equipment and facilities.

### PRIMARY SYSTEM LIFE CYCLE PHASES

16. The System Life Cycle is broken down into four primary phases, ie, Planning, Acquisition (encompassing activities such as mid life upgrades, life extensions and new acquisitions), Deployment and Disposal, as depicted in Appendix B.

#### PLANNING

17. Joint Requirements Planning: Flowing from the SANDF strategic objectives, a Force Structure Plan for the SANDF is compiled as an output of joint planning. This Force Structure Plan details the force design (the combat capability in terms of capabilities, main weapons systems and organisation) and sustainability planning within the defence budget constraints. This Force Structure Plan contains the essential defence capabilities, each of which inherently represent a certain priority in terms of the total defence capability. The contribution of each capability is assessed in order to determine the life cycle funding allocation for such a capability. Existing capabilities are always in various states of obsolescence from a technological or physical perspective, which in turn determines the urgency of upgrading or replacement thereof. With due consideration of this urgency, a set of development plans (DPs) for this force design and the rest of the infrastructure is compiled. The force DP may be regarded as the Systems Hierarchy (Appendix A) system level 8 concept phase of the SANDF's collective Category 1 matériel requirement. The Matériel -, Manpower, Facility and Technology Plans of the DPs thus contain the long-term force development requirements of the Services and Divisions expressed as Required

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Operational Capabilities (ROCs) that lead to the establishment of combat groupings at level 7 and user systems at level 6. From the DPs, requirement specification baselines for a combat grouping and/or a user system are established for each individual ROC. ROCs are primarily generated to satisfy requirements for new operational capabilities or for the expansion of existing operational capabilities. ROCs are also generated to satisfy a need for improvement of the existing operational capabilities through upgrading, modification or replacement. Approved operational capabilities are satisfied by means of the execution of armament acquisition projects. Given that joint planning does not form part of this policy, no further detail will be provided.

18. Prioritisation Responsibility: One of the cornerstones of transformation of the SANDF is the principle of jointness. Chief of Joint Operations, as the Capability Manager of the SANDF, carries the responsibility of prioritisation of requirements derived from the operational gap analysis, based on obsolescence and other considerations, subsequently expressed as ROCs. Approval by the Operations Staff Council (OSC) (who in exceptional cases may refer such to the Military Council (MC) for approval) of prioritised ROCs, is a prerequisite for the registration and subsequent authorisation of armament acquisition projects. This is done within the context that the MC has approved the first issue of the SCAMP and will approve subsequent issues thereof.

19. Scheduling Responsibility: Armaments acquisition is directed by the DOD Strategic Direction Process. The annual financial allocation and scheduling of armaments acquisition is contained in the SCAMP, from which annual business plans are derived and budgetary actions are taken. Chief Director Acquisition will be the co-ordinator of the SCAMP and annual business plans. Planning and execution of armaments acquisition is an iterative process. Updates to the SCAMP will be directed by the Strategic Direction Process, annual budget cycle and in-year revisions. The first issue of the SCAMP was approved by the MC in 1996. Subsequent issues of the SCAMP, reflecting reprioritisation (ie not rescheduling), are also approved by the MC and AAC. The Technology Development Master Plan is reviewed by the AASB and approved by the AAC.

#### ACQUISITION

20. Armaments Acquisition: The armaments acquisition function satisfies the need to provide armaments to the SANDF. Armaments acquisition entails all actions that have to be taken to satisfy the need for matériel, facilities or logistic services. It essentially consists of actions such as analysis of requirements, OR, option selection, contracting, design development, qualification, contract management, handover/commissioning, etc closely supported by technology acquisition and as detailed in Section 2.

21. Armaments Acquisition Management: The aim of armaments acquisition management is to acquire armaments effectively, efficiently and economically, taking into account the approved defence strategy and the required operational capabilities derived from the force structure. Armaments acquisition management includes iterative cycles comprising planning, budgeting, investment appraisal, authorisation, execution and acceptance of components of armament systems as contracted by acquisition projects and programmes. It consists of a structured decision-making and authorisation process by duly authorised instances, using baseline management principles in accordance with the systems engineering process and consequent phased contracting.

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22. Acquisition Responsibilities. The respective Services are responsible for promoting their weapons system acquisition needs by means of the registration of an operational requirement and submission of this need in the form of a ST. Subsequently, a SR will be developed by the user, which will contain a comprehensive Functional User Requirement Statement (FURS) and Logistic User Requirements Statement (LURS). Upon approval by the relevant approval forum, the SR will form the requirements basis between the relevant service and Chief of Acquisition and Procurement for execution in accordance with their SLA. Changes to the approved FURS and LURS can only be made by the user in conjunction with DAPD and with due cognisance of the impact on the execution of the project. DAPD is responsible for execution of the acquisition process in accordance with the policy, which includes obtaining authorisation of all prescribed milestone documentation prescribed herein. Armscor, on the other hand, is responsible for professional contracting and technical management of all associated acquisition requirements. The acquisition phase culminates in the handover of fully configured and supported products systems, which includes all associated logistics elements, to appointed user products system managers within the user environment for operational deployment as intended.

#### DEPLOYMENT

23. Deployment. The formal handing over by DAPD of the acquired systems and acceptance by the appointed User/Product System Manager depicts the commencement of the operational phase where the system is deployed as intended.

24. Responsibility. DAPD is responsible to deliver deployable and maintainable systems to the user in accordance with the provisions of the SR. Additional to the delivery of the products system and its associated logistics, this responsibility will include the delivery of transitional spares to verify the validity of the logistic concept prior to formal acceptance of the system by the user. This will enable the user to correctly adjust its budget for the maintenance support requirements of the newly deployed system. The user is responsible to budget for the maintenance and support cost requirements of the system which DAPD is entitled to verify before the start of the acquisition process.

#### PHASING OUT AUTHORISATION

25. Definition. Phasing out is the action taken to authorise the withdrawal from operational use of specific SANDF matériel.

26. Redundancy of Equipment. There are various reasons why equipment becomes redundant. The main reasons are reductions in force design levels, technological obsolescence, and physical ageing of systems to such an extent that maintenance and upkeep is not feasible or cost effective. All these reasons should lead to the authorisation of phasing out of such equipment.

- a. Force Design and Structure. The latest approved Force Design and Structure forms the basis from which the need for phasing out of any possible excess equipment is judged. The authorisation of a new Force Design and Structure by the Minister of Defence, the Secretary for Defence and the Chief of the SANDF is in itself an authorisation for "phasing out" and resultant reduction in quantities of force structure elements. These reductions are accommodated by means of disposal proposals under the management of CJ Support, normally addressing the total quantity involved, but occasionally also as partial actions. In cases where the force design and structure gives rise to excess

ment, the excess equipment is to be transferred to Armscor as soon as possible while awaiting, where applicable, directions from CJ Support regarding disposal thereof.

- b. Obsolete Technology and Physical Ageing. When matériel has become unsuitable for reuse and modification or upgrading thereof is considered to be neither feasible nor cost effective, phasing out of the equipment is initiated. Phasing out authorisation is the action taken to authorise that matériel may be declared redundant or unsuitable for all known DOD uses. Phasing out authorisation is however also required when existing force structure elements reach the end of their useful life and need to be replaced by new technology capabilities. This is normally done with the submission of a Project Study Report (PSR), requesting authorisation for new equipment as the best and most cost effective solution, thereby rendering the existing system obsolete. The approving authority of the mentioned PSR, by implication also approves the phasing out of the specific systems when the acquisition of the new equipment is approved.

27. Traceability. In order to maintain traceability regarding phasing out decisions, a phasing out target is submitted in which all the system levels to be phased out are defined. Once authorised, disposal proposals can be generated, in which the various options are spelt out with recommendations regarding the proposed best solution.

28. Process. The Product System Owner/User initiates the equipment phasing out process on the basis of one of the reasons as stated above. In order to obtain authority to phase out equipment, the Product System Owner/User has to follow a particular process. This process involves the tabling of such a phasing out proposal to the Ops Staff Council, MC and to DAPD for facilitation through the AACB, AASB and finally the AAC. This will ensure that the Secretary for Defence as the Accounting Officer of the DOD remains abreast of developments in this regard. The format of a Phase Out Target is similar to that of a Staff Target (Refer to Appendix N). Once this process has been completed and a "go ahead" has been given, authority to phase out equipment would have been duly obtained.

#### DISPOSAL

29. Definition. Disposal is the final step in the physical transfer of equipment or lower level items, including the ownership thereof, from the SANDF to an entity outside of the Department after prior authorisation for phasing out has been obtained.

30. Process. Once authority for the phasing out of equipment has been obtained, the Product System Owner/User has to inform the Logistics Division of the need to dispose of the equipment in question. In terms of the ruling policy on disposal (Reference F), the Product System Owner/User has to ensure that all administrative and service requirements that they are responsible for are met before the equipment is offered for disposal. It is also important that the Product System Owner/User makes an assessment of whether parts of the equipment to be disposed of could be used to support the remaining system or any other related system thereto. Once this assessment process has been finalised, the Product System Owner/User has to make available to the Logistics Divisions the schedule of all items to be disposed of. On the basis of this request to dispose of the equipment, the Logistics Division will initiate a disposal verification process on the equipment to be disposed of. On completion of this verification exercise, the equipment in question will be transferred through



DAPD (Procurement) to Armscor for alienation.

31. **Allocation of Income.** Unless specifically otherwise authorised, the proceeds from the sale of redundant weapons systems will become due to future projects aimed at the replacement or upgrade of such a capability. This supports the principle of sustainability. The system owner prepares the appropriate submission, requesting phasing out authorisation. This submission is routed to the OSC where the Capability Manager submits recommendations regarding the priority of allocation of such income generated. The System Owner may motivate own needs to be satisfied for consideration. These needs fall within the domains of weapons system acquisition, weapons system logistic acquisition, as well as technology acquisition. The OSC subsequently presents options and recommendations to the MC for sanctioning. Once approved by the MC, the Capability Manager makes a final presentation to the DSC for DOD approval. The Finance Management Division (Director Budget Control) will, on request, perform the administration for addition to the budget (normal budgeting process) or addition to the in-year budget (adjustment budget process). Note that income realised in a particular financial year, may presently only, in accordance with the process, be utilised in the following financial year.

32. **DAPD Responsibility.** The DAPD will be responsible for the following, during the disposal execution phase :

- a. Participate in Disposal Target approvals of weapons systems at the Armament Acquisition Steering Board (AASB) / Armament Acquisition Council (AAC) in order to effect the transfer of the associated matériel to the holding facility of Armscor (alienation phase) for eventual disposal.
- b. Participate in the alienation planning with the Corporate Logistics Functionary and Armscor once approval has been obtained at the AASB/AAC that the existing operationally deficient system is not technologically upgradeable and therefore needs to be replaced bmo the acquisition of a totally new system, thus declaring the existing system redundant.
- c. Act as nodal point between the Corporate Logistics Functionary and Armscor regarding the transfer and eventual disposal of the obsolete matériel to Armscor allocated stores.
- d. As approval authority of End User Certificates (EUCs) for equipment on behalf of the DOD, Chief Director Acquisition is to participate in the disposal of controlled items and substances.

33. **Armscor Responsibility.** Armscor will be responsible for the following during the alienation phase leading up to and including the disposal execution in accordance with DODI/Pol & Plan/5/2000 Policy and Process on Disposal and Alienation of DOD Movable Assets (Reference F) :

- a. To perform the stock accounting function for effective administrative control as well as maintaining the appropriate documentation.
- b. To arrange for the necessary facilities in or at which to receive, maintain, control, guard and issue the required matériel.
- c. To manage all facets coupled to the sales of alienated matériel in stock.

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- d. Subsequent to appropriate authorisation of such action, Armscor will be responsible to obtain maximum return to the State by selling redundant matériel to the highest bidder bmo a competitive bid process, provided that the bidder and/or country has been properly approved by the NCACC. In pursuit of such maximum return, "best interest" of the State is always paramount.
- e. Armscor acts as the custodian of all authorised EUCs of items to be controlled.

**NOTE:** It is to be noted that the user may not offer any system or item to any potential buyer, as this is the responsibility of Armscor after having been properly authorised and instructed to do so.

## SECONDARY SYSTEM ACQUISITION LIFE CYCLE PHASES

### SECONDARY PHASES AND ASSOCIATED MODELS

34. The System Life Cycle is broken down into seven secondary phases, ie, Technology Acquisition, Concept, Definition, Design Development, Industrialisation, Production and Commissioning Phases, as depicted in Appendix B.

35. **Phase Names.** Given that the names of phases form the core of the acquisition model, it is important to select the most practical name from all the options in use. The phase name is not always the optimum description to eliminate differences in interpretations but becomes appropriate after continual use. If the definition phase is taken as an example, "requirements" are defined during the concept, definition and design development phases, but this definition refers to different hierarchical levels within the system. In principle, the phase name thus refers to activities on the highest system level.

36. **Models Associated with Phases.** The purpose of modelling is to prove the feasibility and affectivity of specific aspects of those systems established for a specific phase in the acquisition process. For purpose of standardisation, the under-mentioned models are prescribed according to the purpose of each model. It is however imperative that the applications of the relevant model is carefully selected to achieve the specific objective of the project. Optimal use of mathematical and simulation modelling should, where practicable, be utilised with limited or no hardware development. Existing hardware that forms an integral part of the end product should be integrated, utilizing the hardware-in-the-loop methodology during the simulation activity to aid option selection and to validate the directions to be pursued.

### TECHNOLOGY ACQUISITION

37. During this phase, technologies that will support the future needs of the SANDF weapon systems, are identified on a long-term prediction basis. Technology management is regarded as the activity of strategic planning, OR, basic technology research (with no aim and not based on any existing knowledge), applied technology research (with specific aim and not based on existing knowledge), and experimental technology development (with specific aim and based on an existing knowledge base). The DOD technology acquisition is presently focussed on applied research and experimental development.

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**CONCEPT PHASE**

38. During this phase, the first high level concept of a system solution is defined.

**DEFINITION PHASE**

39. During this phase, the functional user requirements of the system are specified to such an extent that system design development or production can commence.

**DESIGN DEVELOPMENT PHASE**

40. Design Development comprises all actions that have to be taken to establish a suitable manufacturing data pack of drawings and specifications with which procurement of armament can commence. It involves in sequence; requirements planning, preliminary design, preliminary development, detail design and design qualification. This phase comprises the following sub-phases and models roughly associated with each phase :

- a. Preliminary Design Phase. The investigation of different concepts may be carried out through exploratory development models (XDM) in order to test the practicability of a concept.
- b. Preliminary Development Phase. During this phase, advanced development models (ADM) can be used. Such ADM are used to test the technical feasibility of a design to determine whether the performance parameters can be attained. More than one ADM can be used in succession.
- c. Detail Design Phase. The engineering development model (EDM) is a further development, based on the ADM and is aimed at demonstrating the form, fit, function and tactical capability of the product for military use in a real or simulated environment. Design qualification is done during this phase.

41. A process of incremental functionality development is encouraged in cases where the nature of the project lends itself to such a process. This process entails the initial fielding of systems with a basic functionality (as measured against the user requirement) for evaluation and feedback to the project. Thereafter systems are fielded with incremental enhancements in functionality with incorporation of the user feedback into the development process, but without allowing a creep in requirements during the process. Systems with incrementally enhanced functionality are developed and fielded until the final system that completely meets the user requirement is delivered.

**INDUSTRIALISATION PHASE**

42. During the industrialisation phase, the manufacturing processes of the industry are developed and qualified. The preproduction model (PPM) represents the final product and is aimed at proving the manufacturing processes and equipment effectiveness in order to supply acceptable products/products systems at the required rate of production and standards.

**PRODUCTION PHASE**

43. During the production phase, the authorised extent of production models (PM's) of the qualified weapons system is manufactured, accepted and delivered.

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**COMMISSIONING AND HANDOVER PHASE**

44. Commissioning and handover according to an approved plan is the responsibility of DAPD which will serve as the measure of success of armaments acquisition.

**EXECUTION**

45. Where models are involved, it is essential to identify such models in terms of the above types, the number and purpose of each, the timescales, costs as well as test and evaluation requirements in order to demonstrate that the objectives of that particular phase can be achieved.

**PLANS FOR SUCCESSIVE PHASES**

46. With the submission of milestone documentation, it is necessary to address plans for the subsequent phases with emphasis on the next phase. This presents the opportunity to request approval for specific requirements within the policy framework and, when required, to request deviations from prescribed policy due to unique project circumstances. Deviations from laid down levels of approval are included herein.

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## CHAPTER 3: ARMAMENT ACQUISITION SYSTEM ENGINEERING PROCESS: MANAGEMENT PRINCIPLES

### INTRODUCTION

1. System Engineering is the application of scientific and engineering efforts to:
  - a. Transform an operational need into a description of performance parameters and a system configuration through the use of an iterative process of definition, synthesis, analysis, design, test, and evaluation;
  - b. Integrate related technical parameters and ensure compatibility of all physical, functional and programme interfaces in a manner that optimises the total system definition and design;
  - c. Integrate reliability, maintainability, safety, survivability, human, and other factors into the total engineering effort to meet cost, schedule, and technical performance objectives.
2. The systems engineering process therefore in broad incorporates the following activities/concepts that eventually result in combat systems with reliable operational capabilities:
  - a. Systems Hierarchy.
  - b. Work Breakdown Structures.
  - c. Technical baseline management.
  - d. Specification Practices.
  - e. Risk management.
  - f. Quality management.
  - g. Configuration management.
  - h. Design and development.
  - i. Life cycle integrated logistic support (ILS).
  - j. Reliability and maintainability management.
  - k. Test, evaluation and technical performance.
3. In order to facilitate this translation of functional needs into system solutions, the DOD makes use of an armaments acquisition process that has been divided into two broad phases, the first being the design/development phase and the second being the production phase. These phases in turn are subdivided into a number of secondary phases for control purposes. The design/development phase, *inter alia*, consists of planning, concept design, definition, detail development and testing as applicable. The production phase, *inter alia*, consists of manufacturing, acceptance and commissioning.

4. The model used for structuring the armaments acquisition management process takes into account two fundamental parameters of all armaments, namely its life cycle and its level of complexity. This model allows for sequential execution of phases separated by formalised baselines that enhance effective and efficient management and risk abatement.

5. Industrial development is closely related to and in support of armament acquisition, but is not part of the overall acquisition process.

### THE SYSTEMS HIERARCHY

6. Definition. A system is a combination of mutually dependent items, assemblies, skills, techniques, doctrines, or anything that can play and/or support an operational role in the intended environment. A system is a composite of items, assemblies, skills, techniques, doctrines or anything that is capable of performing and/or supporting an operational role in an intended environment. A system hierarchy exists which is divided as follows:

- a. Level 8: Operational Force.
- b. Level 7: Combat Grouping.
- c. Level 6: User System.
- d. Level 5: Products System.
- e. Level 4: Product.
- f. Level 3: Product subsystem.
- g. Level 2: Components.
- h. Level 1: Materials/processes.

7. A typical systems hierarchy, using a specific weapons system as an example, is depicted in Appendix A.

8. User System. The SANDF, in general, deploys joint force design capabilities in the form of combat groupings. It is however not normal to acquire such extensive capabilities by means of singular acquisition projects. The form, in which needs are made visible to DAPD and other organisations by the SANDF, is that of a user system (ie level 6 on the system hierarchy). It is however imperative that level 7/8 requirements be defined and its impact on level 6 and lower be included in the tasking of DAPD. The management of the level 7/8 requirements however falls outside the scope of this policy. A user system contains the following basic dimensions, *viz*:

- a. Doctrine.
- b. Personnel.
- c. Facilities.
- d. Products systems and/or other matériel components.



- e. Logistic and other support systems.
- f. Elements of C<sup>4</sup>I<sup>2</sup>.

9. The difference between the user system (SANDF responsibility) and the product system (Armcor responsibility), lies primarily therein that the user system consists of a number of physically uncoupled (but system related) product systems, as well as aspects such as operating and support personnel, training (buildings, terrain, etc, as determined by the uniqueness of the equipment and not as derived from human factors) and comprehensive logistic support and doctrines, whilst a product system consists primarily of physically coupled products, equipment and associated integrated logistics.

10. The Project Team is responsible for the delivery of an enabled user system to the Services. The acquisition process must ensure that at least the operations, logistic, education, training and development, personnel, finance, intelligence, command and management information and/or other processes, as applicable, have been enabled for acceptance and sustainable application in the Prepare Forces environment, where full Level 6 integration will be implemented to achieve operational status of the user system. In enabling the user system, the project team will thus have to simulate integration of the contracted Level 5 product system into a Level 6 user system environment to ensure that full operational effectiveness of the system is achievable.

#### WORK BREAKDOWN STRUCTURES

11. Definition. Development of work breakdown structures is a result of the systems engineering process that defines the total system configuration. Conceptual studies establish the system hierarchy and constraints. During the design development phase, these are refined and a baseline system is evolved. This permits allocation of functions to elements of the system and development of the allocated baseline (ABL).

#### TECHNICAL BASELINE MANAGEMENT

12. Concept of a Baseline. A baseline represents the configuration of the system at a pre-determined contractual milestone. A baseline is established by means of consolidating and documenting the results of a preceding phase. This documented baseline will serve as the point of departure for the following phase.

13. Baseline Review. The adequate establishment of the baseline is confirmed through an audit report to verify adherence to the prescribed criteria, and approved by a Baseline Review Board.

14. Administrative and Technical Documentation. Baseline documentation can be broadly divided into administrative (or management) and technical (or engineering) documentation. Baseline documentation such as budgeting and financial documents, STs, SRs, PSRs, DPs, APs and employment doctrines (EDs) are classified as administrative documentation for purposes of this policy. Project documentation such as acquisition contracts, "A", "B", "C", "D", and "E" specifications, design reviews, simulation reports and so forth, are, however, classified as technical documentation. Accountability (ie the authority as well as the responsibility) for the compiling and handling (including configuration management) of administrative documentation rests with the user or DAPD. The compilation and configuration management of technical documentation, during the project phase, is the responsibility of Armcor and/or the contractor and is to be delivered upon achievement of baselines as contractually agreed upon.

15. Although technical documentation may have been compiled by a contractor, such documentation, after proper verification and acceptance by the user, now becomes a user document that forms part of the configuration identification baseline.

16. During contract negotiations the URS and the derived "A" specification will form the primary reference to performance specifications. The appropriate qualification standards will also be agreed to during the contract negotiation phase.

17. Participation in and approval of project baseline reviews are vested in the delegations of DOD and acquisition approval forums, DAPD delegations, Armcor delegations, and Service Type Formation/System Group/Fleet Command delegations.

18. Configuration Management of Administrative and Technical Baseline Documentation. Configuration Management of administrative and technical documents during the acquisition process will be mandatory. The configuration management responsibility for specific documentation will be formally assigned to the appropriate custodian.

19. Change Control. It is essential that change control be strictly applied by, inter alia, classifying changes to stated needs in Class 1 and Class 2 changes. Class 1 changes are the higher level changes that affect the configuration to such an extent that functional requirements are adjusted, and agreed financial limits exceeded. Such changes must be motivated by the project team and be submitted to DAPD and the Service for approval. Class 2 changes are changes that fall within the delegation and responsibility of the project team and thus do not affect higher-level functional requirements or exceed financial restrictions. It is to be noted that classes 1 and 2 changes also occur during production, for which a production deviation or waiver is normally required. For these changes (unless specifically otherwise delegated), approval is to be obtained from appropriate DAPD/Armcor approval authorities where functional requirements, financial baselines or timescales are compromised.

20. Approval Control. Initial submissions of the prescribed project milestone documents are approved at the forums as detailed in Appendix C. The ST, Project Study (PS) and AP of projects, are considered to be the more important milestone documents of a project and are thus approved at the higher approval forums. Furthermore, milestone documents of cardinal projects are in principle approved at higher levels within the organisation than those of non-cardinal projects. In order for the Minister of Defence to take cognisance of the inception of all projects (even when relatively insignificant) all STs are submitted to the AAC for approval. Once a specific milestone document has been approved by a specific forum, the revision of such milestone document is approved by the same forum in cases where class 1 changes are introduced or by the next lower forum when only class 2 changes are applicable.

21. Note that the above only applies to the governance approval forums covered by this policy. Approvals by military and Armcor related forums are essential but not prescribed by this policy, as these approvals are prescribed in the appropriate policies under control of those respective organisations.

## SPECIFICATION PRACTICES

22. Primary Specification Types. System engineering is executed by the methodology of sequential and progressively detailed specification of requirements. In the execution of this policy, extensive use is made of system type "A" specification, developmental Type "B" specification, as well as Production Type "C", process Type "D" and material Type "E" specifications. These specifications are completed upon establishment of specific baselines as depicted in the table hereunder :

BASELINE	Functional	Allocated	Production
SPECIFICATION	"A"	"B"	"C", "D", "E"

## RISK MANAGEMENT

23. Introduction. Project management, by its nature, entails a risk management / risk reduction process. If no significant risks to execute any activity are identified, it is indicative that the execution need not be managed by means of the programme/project process (see definition of a project). The following instructions need to be read in conjunction with DOD/CFO/1/2002 Risk Management in the DOD (Reference G).

24. Definition. Risk management is the foundation of good project management. It is an iterative process comprising steps, which, when undertaken in sequence, enable continual improvement in decision-making to ensure cost effectiveness and performance. Risk management is the term applied to a logical and systematic method of identifying, analysing, assessing, treating, monitoring and communicating risks associated with any activity, function or process in a way that will enable the project team to minimise losses and maximise opportunities in pursuance of cost effectiveness and performance.

25. Typical risks associated with projects. Although risks manifest in various forms, often not easily identifiable or foreseen, some typical risk areas are the following:

- a. Activities being executed that are not properly mandated or authorised;
- b. Inadequate/incomplete definition of requirements;
- c. Requirements exceed available resources (technology, capacity, capability, funding, time, etc);
- d. Incomplete interface definition (higher order systems, human constraints, Customer-furnished Equipment (CFE), other programmes, other life cycle phases, etc);
- e. Deviations from the normal acquisition process;
- f. Changes to political/social/economic etc environment;
- g. Changing relationships between stakeholders;

- h. Technological advances that negatively impact on the technological life of the project, or which may cause fruitless expenditure, should the project be continued.
  - i. Unforeseen changes to the operational environment within which the delivered product/system needs to operate.
  - j. Availability of adequately matured technology.
  - k. Inadequate Quality Assurance during incoming inspections.
  - l. Deficiencies in subsystems that could have a consequential cascading impact on higher system levels that is difficult to contain and of which the financial impact cannot be apportioned to the subcontractor.
  - m. Inadequate documentation and/or qualification of a milestone achieved.
  - n. Human factors.
  - o. Cost escalation.
26. Main Elements of the Process. The main elements of the risk management process are the following:
- a. Establish the context. This step establishes the strategic, organisational and risk management context within which the rest of the process will take place. Criteria against which risk will be assessed are established and the structure of the analysis is defined.
  - b. Identify risks. Identify what, why and how risk can arise as a basis for further analysis.
  - c. Analyse risks. Determine the existing control and analyse risks in terms of likelihood and consequence in the context of those control measures. The analysis should consider –
    - i. How likely an event is to happen; and
    - ii. What are the potential consequences and their magnitude.
  - iii. Combine these elements to produce an estimated level of risk.
  - d. Assess and prioritise risks. Compare estimated levels of risk against the pre-established criteria. Risks are then ranked to identify management priorities. If the levels of risk established are low, then risk may fall into an acceptable category and treatment may not be required.
  - e. Treat risks. Accept and monitor low priority risks. For other risks develop and implement a specific management plan which includes alternative actions to be taken.

- f. Monitor and Review. Monitor and review the performance of the risk management system and changes which might affect it.

27. Risk Management. The application of a formal risk management process, visibly documented, *inter alia*, in a risk management plan, is therefore a mandatory obligation for each weapons system acquisition project.

#### QUALITY MANAGEMENT

28. Approach. In order to ensure system integrity, all acquisition actions must be carried out in terms of the prescripts of RSA-MIL-PRAC-190 (Parts I and II) so as to provide assurance that a product or service will comply with certain contracted requirements. These actions include, *inter alia*, the ongoing monitoring and verification of the status of procedures, methods, conditions, processes, products and services, and the analysis of records to ensure that specified quality requirements are met. A quality management plan must be introduced on all armaments acquisition programmes.

29. Responsibilities. Chief of Acquisition and Procurement, on behalf of the DOD, is to ensure the integrity of acquired user systems and supporting logistic systems. For this purpose, existing infrastructure will be utilized to ensure that the required steps be taken to assure integrity prior to handover through a formal certification process. Chief of Acquisition and Procurement is responsible for carrying out the necessary monitoring actions for this purpose. Armscor undertakes, on behalf of Chief of Acquisition and Procurement, to ensure the integrity and quality of acquired systems for integration into user systems. Armscor will contract the Industry in accordance with existing quality policy and practices to meet the quality requirements of supplied products systems against contracted qualification specifications, and will carry out the necessary monitoring and audit actions to achieve this aim.

#### CONFIGURATION MANAGEMENT

30. Introduction. Configuration management is a precise application of technical and administrative practices intended to achieve the following :

- a. Identifying and documenting the approval status of project baselines.
- b. The identification and documentation of physical and functional characteristics of configuration items (CIs) during their life cycle.
- c. Controlling the changes in the above-mentioned characteristics.
- d. Recording, auditing and reporting the implementation status of approved changes to CIs in order to provide traceability and repeatability of changes during development and production.

31. Application. As each of the participating parties are permitted to utilize their own acceptable configuration management system, the principle of contracting at inter levels is prescribed to ensure a proper flow of information between systems which will ensure control of configuration. The project team is responsible for ensuring that configuration management and the application thereof for the products systems is carried out in accordance with current standards.

32. Responsibility. Configuration Management control is allocated to the control body specifically appointed for that purpose, so as to avoid unauthorised changes to or deviations from approved baselines. For project milestone documentation authorisation, the Chief Directorate, Acquisition, is responsible for configuration management control whereas the Integrated Project Team is responsible for the configuration control of project specifications. The Main Contractor will be responsible for maintaining configuration control over data packs for development and production of the weapons system to be acquired.

33. Planning. Configuration management plans are to be formulated early in the course of the project, no later than the freezing of the functional baseline (FBL), to serve as guidelines for configuration management activities during the project as well as configuration management during the manufacturing and operational phase of the system. At the identified baselines of the project, and during the operations phase, this plan is periodically reviewed, expanded if necessary, and formally sanctioned. This plan is to give clear guidelines of the approach to be followed, the system to be used, the pro forma documentation, the organisations involved, the responsibilities of participants as well as levels of responsibility for decision making with regard to the proposed changes and composition of change control bodies and technical committees.

#### 34. Verification

- a. Audits. Configuration audits are conducted to verify the physical and functional characteristics of a CI against the item's configuration identification.
- b. Reviews. The necessary documentation reviews must be done particularly in the definition and development phases. The definition phase is preceded by the system requirements reviews, while a critical design review is performed at the end of the design development phase. System design reviews and preliminary design reviews must be performed at opportune times between the aforementioned reviews and at project specific baselines, so as to ensure that the system design and development are compatible with the stated operational needs. The preliminary design review must however take place before commencement of the detail design.

35. Record Keeping. An audit trail of all activities linked to the acquisition process needs to be maintained and managed throughout by the authority responsible for the specific activity. Control over internal Armscor and DOD documentation also needs to be maintained in accordance with the procedures governing the control of classified information as set out by the counter-intelligence function of the DOD.

36. Configuration Documentation. During the acquisition phase, documents produced, are to be placed under change control.

#### INTEGRATED LOGISTIC LIFE CYCLE SUPPORT

37. Integrated logistic life cycle support is a disciplined scientific approach to integrate continuously, by means of management and technical activities, all logistic elements of a user system, and incorporate them into the total system to ensure effective and economic support throughout the life cycle of such system(s). These systems must of necessity be integrated in the Prepared Forces environment to minimise costs. Integrated logistic life cycle support planning must also address the disposal of the system.



38. Budgeting Basis. Integrated Logistic Support (ILS) elements form part of projects and may therefore be budgeted as part of the expenditure of a project. It is to be noted that logistics consumed during the life cycle of the equipment, eg consumables such as ammunition, fuel as well as normal maintenance are in principle specifically excluded from project funds. As such, the spares associated with normal maintenance as well as defect repairs form part of ILS, whereas the maintenance activity itself does not form part thereof. In exceptional cases, a deviation from this approach is allowed, where operational equipment destined for an upgrade via an acquisition project, requires specific maintenance by a contractor in preparation for the upgrade. As the user may incur fruitless expenditure as a result of the maintaining of the wrong subsystem or at the wrong time during the process, the main contractor could be best suited to carry out this maintenance in the most cost effective manner. The merits of the available options should be investigated on a case-by-case basis.

39. In practice, it is however difficult to establish a smooth transition from capital budget funding via projects to normal operating budget funding via the running budget. In order to prevent inadequate support during this transition phase, a project is allowed to purchase bridging integrated logistics for a period not exceeding 18 months from date of delivery for operational use of the first batch of main equipment. This approach allows some field experience in terms of logistics usage to be gained and hence utilised to refine the operating budget requirements. As it is not possible to draw a clinical differential between the project and the operating environment responsibility for these logistics, the final decision regarding acceptability of the extent of ILS provision by the project will rest with DAPD.

40. ILS Management. ILS is to be managed in accordance with Log 9 & 10, Pamphlet 1, Part 8; RSA-MIL-STD-177 (once approved). MIL-STD-1388-2B may be used as a basis to determine logistic support analysis (LSA) record requirements and MIL-STD-1390 may be used to determine the Level of Repair Analysis (LORA) requirements.

41. Application. ILS must be able to impact on system design to ensure optimum application of technologies and materials for cost-effective utilisation of a system, in order to meet the logistic support requirements and life cycle cost (LCC) objectives. The following list details the elements, normally associated with ILS:

- a. Logistics Engineering.
- b. Reliability and Maintainability Engineering.
- c. Maintenance Planning.
- d. Supply Support (Sparing).
- e. Support and Test Equipment.
- f. Personnel.
- g. Technical Manuals.
- h. Training and Training Equipment.
- i. Packaging, Handling, Storage and Transportability (PHS&T).
- j. Facilities.

42. Control of ILS. As a result of the nature, extent and complexity of ILS, taking into account the high savings potential as well as the risk of fruitless expenditure, it is essential that the client makes available expert (preferably ILS-qualified) personnel to handle ILS within the user responsibility. Furthermore, user personnel, in co-operation with Armscor, are responsible for ensuring that the system developer and/or supplier has the proven knowledge and experience to carry out the ILS responsibility as contracted, either through the use of own sources or sources contracted in.

#### SUPPORTING PRINCIPLES

43. Tailoring. The acquisition process should be tailored in accordance with the extent and nature of the specific project without in any way compromising the integrity of the acquisition process and while maintaining all mandatory steps and approval documents. Should any part of the process, or even the complete process, not be deemed to contribute in any way to risk reduction and project efficiency, proper motivation for this deviation should be presented to the appropriate acquisition forums for consideration and authorisation. This procedure also applies to unique system types or matériel, as well as to sub processes and principles prescribed in this policy.

44. Specification of User Requirements. During the statement of user requirements, it is of utmost importance that quantification and criticality are dealt with in the correct manner as follows:

- a. Quantification. The total DOD need should be quantified in full (both in quantity and functionality), independently of any constraints that might exist, in order to maintain full visibility. Should, during the execution of the project, it become evident that constraints eg financial, available industrial capacity, etc, inhibit the fulfilling of the total requirement, a reduced requirement is to be managed for the duration of the project. The outstanding quantity or functionality may be addressed at a later stage when circumstances have adequately improved.
- b. Criticality. The criticality of individual performance parameters should be stated in terms of mandatory minimum performance levels. Care should be taken that this minimum is technologically achievable at reasonable risk. A range of acceptability is to be defined between this minimum acceptable level and an uppermost level above which no credit will be awarded for performance. This uppermost level will be equal to or exceed the operational performance requirement. The range of acceptability will be used for discrimination between alternative contenders, whereas the minimum performance level will be used to either qualify or disqualify contenders. Achievement of the required operational performance is paramount, and therefore the extent to which the required performance is exceeded, should not be regarded as being of significant additional value. These mandatory minimum performance levels may not be downgraded during the acquisition process.

45. Options and Analysis of Choice. The establishment of options and the resulting analysis of choice is a continual process during acquisition. Options originate when the threat is analysed or proactive opportunities are addressed. From this, possible required operational capabilities are identified, one of which is selected as an option to be satisfied by a project. On a completely different level, the options to be analysed could be between hydraulic or electrical propulsion of some or other subsystem. Other types of options that