

arise may include carrier lay-outs, subsystem choices, preferred supplier, preferred technology, etc. Although the PS can be construed the primary study where options are analysed, eg with regard to carrier and preferred supplier, options are considered and analysed during all studies. Where options relative to upgrading versus new acquisition are to be considered, supportive decision tools, such as Combined Operational Effectiveness and Investment Appraisal (COEIA) ie Analysis of Options in order to select the best option should be employed to substantiate the choices of alternatives.

46. Life Cycle Cost (LCC)

- a. All considerations for approval of development and production phases of projects should be supported by making visible the envisaged LCC thereof. This is to be done in accordance with RSA-MIL-PRAC-175: LCC: Management of Complex systems and other appropriate documentation.
- b. Life cycle cost estimation and decision-making is part and parcel of all project activities. When the full associated cost is determined, taking into consideration the time value of money, the resultant absolute value is normally used for the purpose of budgeting. It is however normally not required to determine items of similar cost between two or more options during option selection. In these cases only the relative value of the variable parts are determined in order to facilitate these option selections. Basically there are four different methodologies of life cycle cost estimation namely;
 - i. engineering methods (time and motion studies);
 - ii. comparative analysis (using historical cost data of an existing system to predict the cost of a similar but new system);
 - iii. cost estimation relationships (empirical algorithms); and
 - iv. lastly the use of expert opinion.
- c. In order to improve life cycle cost estimation, more than one of these four methodologies should be used simultaneously to improve confidence levels attached to the derived figures.

47. Mock-Ups. Where applicable, mock-ups should be utilised during the various phases of a programme, continuously refined as the programme matures, to evaluate and prove the ergonomic and functional practicality of the proposed solution.

48. Dimensional Models. Apart from the models applicable to the design development phase, a different type of model can be utilised for purposes of construction and maintenance facilitation. These models are normally dimensionally accurately scaled down to represent the dimensions of the required product/system.

49. Qualification and Certification. Test and evaluation considerations begin early in the system life cycle with the preparation of a Test and Evaluation Master Plan (TEMP). The TEMP covers both development and OT&E and serves as the basis for all lower level test plans. Compliance of products systems with stated technical requirements, including the logistic support system, is qualified by means of Technical Test and Evaluation (TT&E) against "A", "B", "C", "D", and "E" specifications in the respective phases where they are applicable. Operational qualification/certification of user systems, with accompanying logistic

support, is carried out by means of OT&E against the URS, taking into account the result of the preceding T&E to achieve system certification before release for use is granted. This falls within the responsibility domain of the user.

50. During contracting, applicable qualification and certification requirements should be prescribed by the project team to ensure that acquired systems can be effectively qualified and certified. Cost-effectiveness should always be maintained in the selection and application of prescribed qualification and certification standards.

51. Standardisation. Standardisation is the process of selection by which the least number of items or equipment will satisfy the most applications, without sacrificing economical manufacturing processes, quality, reliability or performance. Standardisation is to be promoted in the DOD as far as practicable, especially in the area of interface standardisation and for purposes of reducing the extent of logistic support.

CHAPTER 4: ARMAMENTS ACQUISITION: DIFFERENT MANAGEMENT APPROACHES

MANAGEMENT

1. Introduction. This section of the document describes the policy to be applied in the management of the armaments acquisition process. It also describes how acquisition is managed by means of projects and their sub activities.

2. Requirements Statement. The SANDF is at all times responsible for professionally stating its requirements with regard to armaments in user's operational terms, thus enabling DAPD to effectively and economically meet these requirements by means of the armaments acquisition process. This means that the development of armaments will be directed by real user needs and not by pursuance of unsubstantiated solutions. Requirements will be met by the application of existing or low risk technology. If development is required it should be directed through a structured process of consecutive phases which is intended to progressively reduce risk. This implies that authorisation for the next phase can in principle only be granted after the objectives of the preceding phase have been adequately addressed, and have been formally accepted.

3. Principles. The management of projects defines three principles of good management which are essential to the structured approach to be adopted during armaments acquisition:

- a. Traceability between the ROC and the system solution shall be ensured by
 - i. selection and maintenance of the aim established in the preliminary study (PreS) and refined via the feasibility, system, project and acquisition studies that follow, ensuring that those system characteristics (the most important characteristics of the system) which the individual elements of the system do not have, are achieved; and
 - ii. identifying the owner (corps/squadron/lotilla) of the system and having him appointed as the representative for the duration of the acquisition project.
- b. Accountability shall be ensured via the audit trail throughout the work authorisation matrix from milestone submission to individual job instructions by adherence to
 - i. unity of command which demands that all parts of the acquisition system, internal and external, work smoothly under the direction of a single authority towards a common objective; and
 - ii. the establishment of a single point of integrative responsibility for acquisition projects at the levels of integration with appropriate delegations/ appointments.
- c. Integrity of the management of armament acquisition shall be ensured by
 - i. rigorous adherence to the formal phases of the risk reduction process, eg avoid undertaking activities of different phases (design/ development and production) simultaneously;

ii. Proper authorisation is required during submissions to the respective approval forums when any deviation from the policy prescripts are envisaged (eg to skip any particular phase). Each phase of the acquisition process should therefore be concluded and properly authorised in accordance with these policy prescripts prior to proceeding to a following phase, and

iii. Adhering to the principle that the quality and sequence of work upstream not only affects the quality of work downstream; but implicitly determines it (ie LCC).

COMPETITIVE ACQUISITION

4. Open Competition. Open competition will be used as far as is practicable in the acquisition of armaments. In cases where the maintenance of strategic local industrial capabilities is of overriding importance, the DOD may however close tenders to foreign competition.

5. Single-Source Acquisition. As a matter of principle, multi-source contracting should be pursued as far as possible. In cases where specific circumstances do not make it practical, feasible, cost effective or strategically prudent to solicit a multi-source tender, the use of single source may be considered. Exceptions to multi source tender solicitation, would specifically be considered in the case where the supplier of the goods and services has been officially declared and authorised to be of strategic nature, or in the case where relatively small extensions to existing contracts are required where multi-source tendering would imply that preceding work by the existing contractor would become redundant when a different contractor is appointed. In the latter case, such forced situations should be foreseen and avoided by more comprehensive initial contracting. Where specific equipment types are required for purposes of standardisation, it is essential during follow-up contracting to provide for the standardisation criteria as mandatory criteria within the value system, while still pursuing the principle of multi-source tendering.

6. Value Analysis. All tender adjudication for armaments will be based on a value analysis methodology (Refer Armscor Practice A-Prac-1034). This value analysis methodology will be agreed to jointly by the members of the DOD (DAPD) and Armscor and will form part of the tender solicitation and adjudication process. The value system per project will be developed by the project team and be approved by the relevant authority as prescribed in A-Prac-1034. Both DAPD and Armscor top structure shall have access to the final proposal in order to fulfil their normal oversight obligation. This does not imply that the proposal may in any way be changed, but allows recommendations to be considered by the compiling team where potential deficiencies in the proposal are identified by top management. The value system should not be used to exclude previously-disadvantaged contractors and should not limit national strategic considerations which can override technical performance parameters. This value analysis system must be above reproach and subjectivity should be minimised. The Secretary for Defence will be responsible for monitoring and guiding this process in order to advise Parliament via the Minister of Defence as to the adequacy thereof. The value system normally evaluates specified military performance parameters and Industrial Participation, political and financial aspects. It should be noted that, in principle, responsibility for determining value system parameters to measure military performance, lies within the domain of the military client and not with the DAPD. Similarly, the responsibility for the determining of value system parameters to determine

military and political strategic higher order value system parameters, lies within the domain of the Secretary for Defence and not with the SANDF.

7. Tender Adjudication. Adjudication of tenders will be performed in accordance with the prescripts of the Preferential Procurement Policy Framework Act, Act No 5 of 2000 (Reference H) and its regulations. Adjudication of tenders will not necessarily be based on the lowest price, but on highest points scored. This will ensure that relevant aspects such as life cycle-cost, DOD requirements, local industrial development goals, social responsibility (economic empowerment of previously disadvantaged persons), and subcontracting will be taken into consideration in the awarding of contracts. The Armscor affirmative procurement practice (A-Prac-1014) will apply during tender adjudication.

8. Companies who lose in the tender process shall, on request, be informed of the evaluation criteria and process that was followed, without divulging information of commercially confidential nature, detail evaluation results, or information that could prejudice the competitive advantage of any of the companies who participated in the tender process.

9. Broadening of Local Industrial Base. Suppliers of major systems or products will be required to allow the maximum amount of competition on subsystem and lower level during tendering (ie reduce vertical integration and enhance efficiency).

10. Benchmarking. In the adjudication of single source offers, "bench-marking" against comparable systems or products should be employed to ensure value for money. Single source offers should only be considered when no other suppliers respond to tender invitations or when there is a single supplier of specific equipment. ie intellectual abilities, technical performance, previous work performance, additional work requirements etc, should not be used for motivation purposes.

LOCAL ARMAMENTS ACQUISITION

11. Defence Review. The Defence Review states that procurement should, as far as possible, attempt to make use of local defence industrial capabilities.

12. Self-sufficiency. South Africa should not strive for self-sufficiency in armaments development, but only limited self-sufficiency in key areas, as determined during the Defence Review and the subsequent DOD strategic direction process. DOD acquisition guidelines will form the basis for defence industry planning. Technology development will be targeted primarily at those areas where self-sufficiency is to be maintained. The acquisition policies will guide acquisition decisions and will therefore be included in the value systems for tender evaluation.

13. Strategic Considerations. It could be more cost-effective and operationally expedient to have the technology and capability to manufacture (if economies of scale can be achieved), upgrade and maintain equipment locally. In certain strategic areas, such as electronic warfare, secure communications, equipment developed specifically for local conditions, etc, systems and services are not available on the international market. Local manufacture allows understanding of the technology and processes, which again allows modifications to be made to improve serviceability, turn-around times and operational capability through upgrades, modification or replacement. It also has the advantage of stimulating the local economy through investment and savings on foreign exchange and in some instances, earn foreign exchange through exports. It could also ensure independence from possible foreign coercion in times of tension while allowing local industry to participate effectively in open tenders to fulfil direct and indirect counter-trade obligations. Preference

may therefore be given to the acquisition of defence products and services from local suppliers, provided such acquisition represents good value for money.

FOREIGN ARMAMENTS ACQUISITION

14. Considerations. Foreign acquisition will be considered when a requirement for a new product or system cannot sensibly and economically be satisfied by means of local acquisition and where it is not strategically imperative to create such a local capability. In such instances the foreign commodity needs to be fully compatible with relevant local systems with which it needs to integrate, eg ammunition. The logistic support implications of acquiring imported equipment should be considered in detail.

15. Industrial Participation. All importation of defence equipment and related items presently requires provision in all contracts with a value of greater than USD2m and less than USD10m, for a DIP requirement of at least 50%. This counter-trade obligation will be jointly monitored and implemented by Armscor and the Secretary for Defence (DAPD). All contracts with a value of greater than USD10m will be subject to the National Industrial Participating Policy, which is administered by the Department of Trade and Industry (DTI) and with oversight by the DOD. These requirements are detailed in DOD Industrial Participation policy that regulates foreign procurement greater than USD2m and that will take precedence over this policy when amended. The NIP programme will be managed and administered by the DTI, while the DIP obligations will be jointly managed and administered by Armscor and DAPD.

16. Foreign companies supplying armaments to the SANDF will be encouraged, through a Local Industrial Participation Programme (counter-trade/offset), to involve local industry, thereby ensuring maximum local content and support of the Government's macro economic growth plan.

STRATEGIC DEFENCE PACKAGE ACQUISITION

17. Approach. Strategic Defence Package programmes differ from normal foreign acquisition programmes in that they essentially entail Government-to-government type agreements, executed through foreign and local defence industrial capabilities and suppliers.

18. Authorisation. Management and authorisation forums for this kind of programme differ from normal local and foreign acquisition programmes and are detailed in subsequent sections herein.

JOINT ARMAMENT ACQUISITION

19. Categories of Joint Venture. Government initiatives that result in weapon system related joint ventures are fundamentally driven from outside the DOD. In these exceptional cases, Government should appoint a person with the necessary delegations to assume responsibility for the joint venture in order to establish these fundamentally inter-governmental initiatives with primarily political objectives. Clear objectives should be defined and the required resources should be negotiated from relevant departments by this appointed responsible person. As interdepartmental coordination is inevitable, it is suggested that the responsible person be either from the Department of Foreign Affairs or totally independent.

20. Cooperation initiatives originating from within the DOD, typically with defence forces of foreign countries, that result in joint ventures of mutual military benefits, independent of the

fact that there may be collateral political benefit, will be managed by the Chief of Acquisition and Procurement who represents the DOD. This memo will only address DOD initiated joint ventures.

21. Scope of Joint Venture. A joint venture is defined as an initiative between two parties who have mutual requirements of close similarity whereby the following types of joint activities are pursued :

- a. Basic technology research.
- b. Technology demonstrator development.
- c. Full scale design development.
- d. Acquisition (ie both development and production).
- e. Life Cycle integration (ie research, design development, production and through life support).

22. General Principles. Joint Ventures should comply with the following general principles:

- a. Take place under the auspices of Defence Co-operation Agreements.
- b. Be defined in an appropriate Implementation Agreement.
- c. In cases where South Africa leads the process, activities shall be controlled by a Steering Committee under the chairmanship of the Secretary for Defence.
- d. Contracting must be executed by existing structures (eg. Armscor or foreign equivalent).

23. Fundamental Approach to Bridge Gaps

- a. Fundamental to this proposal, is the basic principle that the party with the most urgent need related to timescale, will in principle be the lead party in the establishment of the joint venture as this lead party will find it difficult to compromise much on timescales, resulting in pressure being brought to bear on the party with the less urgent timescale requirements to compromise on this parameter.
- b. A further fundamental principle is that the party with the most urgent need, will be in a better position to contribute more extensively towards the cost of the joint venture. During subsequent sales of the products resulting from joint venture initiatives, returns will accrue to the respective parties (eg. royalties), in relation to their upfront contribution.
- c. The last important principle lies in the fact that any residual performance gap that cannot be closed by means of negotiation, will be developed individually by the two parties, taking into consideration the inherent cost, risk and viability thereof. The larger this residual gap, the larger the risk of fruitless expenditure.

- d. When any one of the above three fundamental gaps are too large to bridge, the feasibility of a joint venture comes into question.

24. Process

- a. Once the representatives of the two interested parties have established the potential benefit of a to be defined joint venture, it is of utmost importance as a first step, that the eventual clients of the two defence forces define their needs totally independently in order to establish the gaps between the needs, especially relating to time, cost and performance. The smaller these gaps are, the more viable a joint venture becomes. Large gaps in any of these fundamental areas, does however not indicate that cooperation cannot be sensibly established, as it is still possible to temporarily restrict its scope of commitment for later reconsideration and possible progression to subsequent phases once more adequate information becomes available.
- b. The next step is for the parties to compare their respective requirements in order to establish the nature and extent of the gaps.
- c. The two parties henceforth proceed to negotiate acceptable convergence of requirements until they cannot sensibly compromise further on these parameters. The residual gaps in performance, cost and timescale are then properly documented for consideration and decision at the normally structured forums within the respective authorization environments.
- d. The forum considering the party with the longest timescale (Party B), now has a choice to either force its client to compromise totally on timescale in order to close the gap, or to limit the extent of the proposed joint venture to for instance basic technology research only or alternatively to declare the joint venture non viable. This forum can furthermore endeavour to contribute maximally in closing the funding gap, but has no specific obligation to the extent thereof.
- e. The forum considering the party with the shortest timescale (Party A) has no obligation to compromise in closing the timescale gap. However, it does have the obligation to fully close the funding gap. Should the latter not be possible, it is to declare the joint venture to be non viable. This forum could prescribe a larger stake in the returns of this joint venture due to its greater financial contribution thereto.
- f. Once a potentially feasible joint venture has been defined and agreed upon between the two parties, it is however as a last step necessary to submit a comprehensive motivation to the DOD forums as to the reasoning why a joint venture is considered to be the most cost effective solution in satisfying the need and that single source contracting is therefore desirable for their consideration and authorization. Long term industrial benefits and life cycle spin-off to the DOD should at be taken into consideration. In all cases the AAC provides final approval of Joint Ventures (JVs).

25. Contractual Arrangements Between Joint Venture Parties. Although each JV has its own unique contracting arrangements, appropriate inter Defence Co-operation Agreements at a government level should be in place, managed typically under Defence Committee structures.

26. Responsibilities of Respective Parties

- a. Users of the Operational Capability. Users of operational capabilities are continually responsible to keep their operational performance requirements current with respect to the envisaged upgrading and/or renewal of its force structure elements. They are furthermore responsible to determine the criticality of respective performance parameters in order to know and to be able to negotiate compromises during joint venture interaction. In the event of an MOU regarding the joint venture coming into being between DAPD and the foreign party, the DOD user will sign the MOU jointly with DAPD.
- b. Chief of Acquisition and Procurement. The Chief of Acquisition and Procurement, as the process owner of acquisition, is responsible to facilitate all coordination and authorization of joint ventures with a military origin via existing acquisition structures.
- c. Secretary for Defence. The Secretary for Defence is responsible to reach agreement with the C SANDF regarding the maximum additional funding to be allocated from outside the specific project in order to close any funding gap. When agreement is reached, the Secretary for Defence is to inform the Minister of Defence on the detail in order for him to be informed of any potential political impact of the situation.

27. Joint Venture Viability Matrix. The following matrix depicts the likelihood and potential returns related to the extent of Joint Ventures :

EXTENT	RETURN	LIKELIHOOD
Only Basic technology research	Good	Large
Only Technology Demonstrator	Average, if not taken further	Medium
Only Design Development	Risky (large potential for fruitless expenditure)	Small
Acquisition (development and production)	Excellent	The norm
Total Life Cycle (ie. Including Operating Support)	Maximum	Occasionally

CONTRACTING DURING ACQUISITION

28. Level of Contracting. It is DOD policy to contract at the highest possible level in the system hierarchy in order to ensure a single point of integrative responsibility. This does not exclude the possibility of contracting on lower system levels directly if this proves to be more cost-effective and with due consideration of the inherent risks. In such cases, the lower level systems supplier becomes the main contractor.

29. Preferential Procurement. The DOD subscribes to Armscor's Preferential Procurement Practice (A-Prac-1014) which is derived from the Preferential Procurement Policy Framework Act, Act 2 of 2000 and its regulations (Reference H). Contracting will be performance based and will always ensure that best value for money is obtained.

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30. Types of contracts. The various types of contracts and their application are prescribed in Armscor practice document KP021.

31. Intellectual Property. During contracting for weapons systems, the prescripts of the DOD Intellectual Property Policy (when concluded) shall be adhered to.

32. Contract Amendments. Reviewing the priorities of contracted acquisition programmes remains the prerogative of the Secretary for Defence through the Chief of Acquisition and Procurement. The Chief of Acquisition and Procurement may therefore on behalf of the Secretary for Defence review the priorities and timing, which could lead to changes in functionality, the delay or in some cases the termination of these contracted activities. Such changes should only be considered in exceptional cases, and once authorised, be executed through formal contract variations, which are fully supported by Chief of Acquisition and Procurement, C SANDF and Armscor.

33. Contracting Approach. Performance based contracts should be based on fixed delivery schedules. In the event of a contractor failing to meet contracted milestones, specific penalty clauses will be enforced, as provided for in the relevant contracts. Requests for waivers with regard to penalties enforced, will be directed to the relevant DAPD Director and appropriate Armscor Senior Manager prior to the submission to the appropriate Acquisition Authorisation Committee. The delegations and reporting channels of the Armscor acquisition authorisation committees are detailed in Armscor document A-Corp-001.

34. Contracting for Design Development. The preferred option for acquisition of armaments is to select qualified "military off the shelf" (MOTS) or "commercial off the shelf" (COTS) product/systems. This does not exclude adherence to the principles of sound systems engineering. Where this is not available, a development process could be followed to satisfy the stated requirement. In order to reduce risks, a structured approach is mandatory through the application of a design development phase, using modelling methodologies in accordance with the systems engineering process. It is however to be noted that this design development activity specifically refers to integration design and not the development of the CIs essential to the achievement of the prime mission capabilities. CIs should already be fully qualified and mature, or at most, have only cosmetic or low risk developmental requirements with known timescales, performance and cost parameters.

35. The principle of contracting for design development is that this does not entail the establishment of technology simultaneously with the design development process. It is therefore imperative that the basis for awarding of these types of contracts are that they provide for both design development and production to which the offeror can be contractually bound when especially prime mission equipment is subsequently contracted. The aim of this approach is to alleviate buy in by any offeror in competitive tender situations in the design development phase, which can potentially be followed by uncontrolled escalation in unit price of production items at which stage the DOD has lost the negotiation leverage. Design development should therefore not be contracted as a prolonged activity, with resultantly large DOD investment implication.

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36. Contracting of New Technological Generations. With technology developing at the high rate it is today, it may occur that, for projects with exceptionally long production timescales and equipment quantities, a new generation of material or subsystem becomes available prior to the contracting and delivery of the quantities authorised in the AP. This requirement may be satisfied under the same project authority (ie AP) under the following circumstances:

- a. That the operational requirement has not changed.
- b. That the functional and technical requirements undergo relatively small changes.
- c. That the financial and timescale implications are relatively minor.
- d. That the logistic implications of another generation of equipment are of a minor nature.

37. When the above-mentioned requirements cannot be met, it is necessary to register a new project to exercise correct documentary control over the changed requirement. It is not necessary to repeat the whole project approval procedure if the approved quantities contained in the original project are satisfied in the new project, and this requirement has the required principle approval. A revised version of the most recently approved baseline is then submitted for approval in which quantities, useful documentation, etc, are identified for transfer to the new project. The tactics for the execution of a shortened (procedural) project are also included for approval. When the new project is submitted, cross-referencing is to be done.

TECHNOLOGY

38. Maturity of Technology. Acquisition should occur in the shortest possible timeframe so as to prevent performance baseline and technology creep during execution. Therefore, mature technology should be applied during the development phase as far as practicable. In the absence of sufficiently mature technology being available for cardinal subsystem levels, a technology development programme should be launched to mature the required technology prior to the continuation with the system acquisition process.

CHAPTER 5: ARMAMENTS ACQUISITION PROJECT MANAGEMENT PRINCIPLES

INTRODUCTION

1. Context. For purposes of interpreting this policy, in-service modification projects and technology projects, each with their own applicable and unique policies and procedures, are not covered in this policy. This policy does however address the interaction between these project objectives.

2. Establishment of Capabilities. New or improved operational capabilities for the SANDF are established by means of capital acquisition projects. A new or improved operational requirement is defined and authorised by means of a ROC within the user environment by the Service or Divisional Chief. A project is then initiated by means of submission of a ST to the appropriate recommendation and approval forums and the registration of a project name from a list provided by MI. The project ends when the envisaged capability as documented and authorised by the appropriate forums is introduced into operational service, accepted by the user and the prescribed closing and handing over procedures have been completed with the submission of the Project Closing Report.

3. Process. The model used for structuring the armament acquisition management process allows for sequential and parallel phases separated by formalised baselines. Underlying the above phased approach is the systems engineering process. This process systematically translates functional needs stated by the operational user into technical design and manufacturing parameters that in turn would provide the required operational capabilities. It also ensures that, parallel to the functional process, all other stakeholders and interest groups are kept involved. This process is managed by appointed joint project teams, representing all members of the DOD and Armscor. During the acquisition process it is mandatory that the formulation of the requirement, the authorisation of the requirements and the execution of the armament acquisition process will be vested in separate delegated entities.

4. Principles. Within the framework of defence management, the acquisition function satisfies the need to provide armaments to the SANDF. Defence management seeks the optimum combinations of personnel and equipment which will provide the maximum defence capability for available funds. A structured decision-making and authorisation process for the acquisition of armaments by means of baseline management and consequent phased contracting is followed, resulting in transparency and accountability. The armament acquisition process is fundamentally a systems engineering process, requiring good project management.

5. Acquisition Project Management. Acquisition Project Management is a macro-management process. Success is determined by the integration of many other supporting processes in support of project, DOD and national interest. It furthermore entails the management of the total spectrum of activities to be carried out by the participating organisations within the defence family to meet the armament requirements that will ensure that the SANDF has the necessary force structure elements required for maintaining a combat ready capability.

6. Project Structure. User systems are continuously handled by umbrella projects. User systems however, have varying complexities at lower system levels which forces consideration of the practicality of structuring projects to deal with this type of acquisition.

The choices are whether to handle the acquisition by means of a single main project with subprojects or by means of multiple main projects. This is of particular importance when user systems consist of more than one comprehensive, physically separated product systems. Where the coincidence between technical and other requirements makes up a small part of the total requirement, subprojects of a single main project or separate projects should be considered without dereliction of the need for adequate co-ordination. For example, a ship/helicopter combination or combat vehicle variants that use the same carrier platform, but that have divergent operational uses, should preferably not be addressed in one project. They should be addressed as subprojects of a single main project, or even as separate projects.

7. **Project Teams.** Project management requires the management of many logistic, technical, financial and other disciplines such as engineering, resource management, contracting, quality assurance and design assurance. To cope with the many acquisition functions, project teams will have to be appointed.

- a. **Composition of Project Teams.** For the project team to be able to cope with all the acquisition functions it will, where appropriate, consist of members from Armscor, the SANDF, the Secretary for Defence (DAPD) and industry. The appointed project officer will be the team leader. The project teams will be allocated to DAPD and will preferably be collocated (See also guidelines for the composition of a project team contained in Section 2).
- b. **Appointment of Project Officers.** Project Officers are appointed per project. On approval of a ST by the Minister of Defence, the relevant Service or Division Chief identifies and appoints a project officer for the specific project, who is then seconded to DAPD. It is thus the responsibility of the Chief of the Service or Division to identify, train and educate officers in the art of project management and route them via the acquisition process as project officers on a rotational basis, even if such rotation will be slow due to the long-term nature of acquisition projects. Project Officers will be accountable to and will report directly to the Chief of Acquisition and Procurement via their respective DAPD acquisition directors on all acquisition related matters.
- c. **Project Officers Related Costs**
 - i. Project Officers personnel related and personnel administration costs will be borne by the relevant Service or Division.
 - ii. Project related administration costs will be funded from within the project.

PROJECT IDENTIFICATION

DEFINITIONS

8. The following definitions will apply :

- a. **Armaments Acquisition Project.** An armaments acquisition project is a planned undertaking that has a defined beginning and end, in which human, material and financial resources are organised in a novel way, to undertake a unique and complex scope of work. The activity by nature has technical and financial risk, which is progressively reduced via the application of the systems

engineering process of risk reduction through specification and testing to quantitatively and qualitatively meet stated armaments objectives on user system level and higher.

- b. **Armaments Acquisition Project Management.** Armament acquisition project management is the art of directing and co-ordinating human and material resources throughout the duration of an armament acquisition project by using modern management techniques to achieve predetermined objectives of scope, quality, time, and cost.
- c. **Armament Acquisition Programme.** An armaments acquisition programme entails a group of related projects in the Armscor contracting environment which are managed in a co-ordinated way, to deliver benefits that would not be possible where the projects are managed independently. It must be noted that a project in the environment of the DOD may give rise to a Programme in the Armscor environment.
- d. **Armaments Acquisition Programme Management.** Armament acquisition programme management is the process of co-ordinating the management, support and setting of priorities to achieve synergy across individual projects, to deliver additional benefits and to meet changing business requirements.

CRITERIA FOR CLASSIFICATION AND APPROVAL OF PROJECTS

9. **Aim.** Armaments acquisition projects are classified as cardinal or non-cardinal in order to determine the level of top management involvement (approval forum) in the DOD that is delegated with powers of recommendation or approval during the submission of milestone documentation.

10. **Cardinal Projects.** The following criteria are decisive for classification as cardinal projects :

- a. **Inherent Risk.** The extent to which the project represents new capabilities for the user, such as computer technology or new maintenance infrastructure, for example risk in user environment. The extent to which leading-edge technology (particularly unproven) is used represents on the one hand a development risk for the Industry, and on the other hand a financial risk for the budgeting authority as a result of possible reworking of defective products. When the project risk is major and of a comprehensive nature, it could indicate a cardinal project.
- b. **Urgent Operational Needs.** If satisfying the operational needs is so urgent that strict compliance with rules, regulations and procedural directives becomes of secondary importance when weighed against delays in timescale, this indicates a cardinal project.
- c. **Political Profile.** Where international treaties, tendencies or involvement (such as green movement or non-alliance) impact on a project, or vice versa, or where domestic politics are involved, for example the concentration of job creation in a specific area, or use of land, this indicates a cardinal project.

- d. Cost Profile. If the total project expenditure shows that more than 5% of the SANDF's annual armament acquisition budget for one year will probably be required for that one specific project (thus approximately RM350), this indicates a cardinal project.
- e. National Strategic Interest. When a project is of national interest because of its impact on the force structure, this could indicate a cardinal project.
- f. Impact on existing Capability. If the establishment of a new capability bmo the project impacts negatively, either temporarily or until changes have been introduced to other affected SANDF operational capabilities (or, in exceptional cases, on the country's capability), and their changes have been included in this project, then this could, depending on the extent thereof, indicate a cardinal project.

REQUIREMENTS TO BE MET BY SYSTEMS ACQUISITION PROJECTS

11. Systems Acquisition Projects. The SANDF always uses systems acquisition projects to acquire new combat groupings of user systems. However, all new material requirements cannot always be classified as combat groupings of user systems and thus usually refer to lower levels in the system hierarchy, eg singular user systems, products systems, products, product subsystems and even components. For the latter mentioned material requirements as well as for requirements such as Information Systems which are of a singular system nature, it is not always required to satisfy them bmo systems acquisition projects, depending on the relevant system hierarchy, the development complexity and financial extent of said requirement. Systems acquisition projects are applicable, subject to the criteria defined below, when :

- a. Completely new operational, and thus combat capabilities, are developed.
- b. Expansions of the existing operational capabilities through an increase in number is required, and
- c. Improvement of the existing operational capabilities through mid life upgrading (modification) or replacement is required.
- d. Life extension due to obsolescence is required.

12. Criteria. The following criteria are used to determine whether given acquisition activities should be handled as an acquisition project. The criteria are not applicable individually, but rather in combination:

- a. Purpose. The purpose for which the project deliverables are intended is used mainly to distinguish between an acquisition project and a technology project.
 - i. Where the deliverables are intended for operational deployment, it is an acquisition project. This remains so, even if the project is suspended for a time, for example after completion of PPMs or prototypes, but with the intention of continuing with series manufacturing and operational deployment at a later stage.

- ii. Where deliverables are intended to be used solely to demonstrate technological capability, it is a technology project. The deliverables (usually uncompleted at system level 4 and higher), however are not intended for operational deployment. A completely new acquisition project may however make use of this baseline as one of the inputs for providing operational matériel at a later stage.
- b. New System Level Added. The highest new system level attained through the acquisition process is used to distinguish between an acquisition project and an operational project or operational activities. Acquisition projects are implied where expansion of the force is involved, for example :
 - i. When completely new combat groups, user systems, products systems or products are to be provided (according to the system hierarchy).
 - ii. When user systems or products systems are extended by adding new products systems or products, for example a recovery vehicle (products system) supporting a tank regiment (user system).
- c. Modification of System Level. The system level concerned that is being modified is decisive for distinguishing between an acquisition project and an operating project or operating activity. Acquisition projects apply when products on higher system levels are modified by physically fitting new or improved product subsystems or components, but subject to the following conditions:
 - i. Complexity of Development! Where the development phase of a new or improved product subsystem (for example an aircraft engine) or component (for example the turret of an armoured vehicle) will take at least one year. (In the case of an increase, that is purchasing existing products already on inventory, the timescales for the original development phase are applicable for purposes of this consideration.)
 - ii. Financial Scope. Where the costs of manufacture of the product subsystem or component series will financially involve at least Rm 4.0 (in 2002 Rand value).
 - iii. Series Size. Where a reasonably large series of items is involved, that is where there is strict control over all technical parameters and strict configuration control as regards parts and documentation, in order to prevent the same error from occurring on a number of items and causing ineffectiveness.
- d. Singularity of Solution. The unique nature if Information Systems in general makes it impractical for this policy to be rigidly enforced during the acquisition

NOTE: If the above criteria are not all met simultaneously, it could however still indicate that the activity should be managed as an acquisition project. If it is preferred not to deal with this within the prescripts of this policy, a full motivation is to be submitted to the applicable Governance Forum described herein for authorisation and execution within

of such systems. Due to the development orientation thereof as opposed to a production orientation of typical weapons systems, the management of baselines beyond the ST should follow a unique process as prescribed within the CMIS environment. For purposes of good governance, it would suffice to present a ST and Closure Report (CR) in accordance with this policy. During approval of the ST the appropriate forum will issue such guidelines as deemed necessary for the execution of the project. These may include authority for deviations, ceiling costs and timescales as well as status reports, should execution be of lengthy nature.

13. Matériel System Upgrading. After a systems acquisition project has been completed, ie once the user system is in operation, minor deficiencies, mainly at product level and lower, may be identified during use in respect of additions and adjustments to or expansions of existing matériel. These needs, which do not change the stated requirements of the ST/SR, are normally regarded as modifications (in respect of additions and adjustments) and purchases/procurement (in respect of expansions), and are thus not handled as acquisition projects.

14. Maintenance of Force Level. During the deployment of force, losses that cannot be recovered sometimes occur, usually at product level. For the purpose of this policy, the replacement of elements of a user system with identical matériel is not regarded as a project due to the low risk of the acquisition thereof. Authorisation by means of a submission only is

NOTE: Approval of Systems Acquisition Projects. Notwithstanding the above mentioned guidelines, the decision to satisfy matériel needs by means of systems acquisition projects or by other means, is subject to recommendations by DAPD and approval by the prescribed authorizing body on Sec Def - or Ministerial level.

to be obtained at the AASB or AAC as prescribed.

PROJECT CONSTRAINTS

15. Functional (Performance) Constraints. The functional performance requirements, which represent constraints in themselves, and other specific constraints, are defined in the URS. The requirements contained in the URS are translated into technical specifications (ie A, B, C, D and E) which will form the basis of the contracting baseline with respect to technical performance. The URS will be revised and kept under configuration control during development but will be frozen prior to the establishment of the production baseline.

16. Financial Constraints. The financial ceiling of the project as a whole, funding for a specific phase, as well as the financial ceiling and base year are mandated in the ST and updated in subsequent approval documentation, ie SR, PSR and AP. Requirements for substantial increases in the approved ceiling amount, will be addressed through project control forums who will promote these additional requirements to the MC for consideration. Once principal approval is given, reprioritisation of existing project financial allocations is done by the Chief of Joint Operations to identify the source of the additional amount. Milestone documentation is then updated to reflect the amended ceiling amount and authorised through the appropriate governance forums described herein.

17. Time Constraints. The time constraints of a project are mandated in the ST and subsequent approval documentation. Deviations from authorised project timescales shall be

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authorised prior to the occurrence of any slippage and the impact on operational availability should be detailed for consideration. Time deviations are to be translated into the impact on financial and functional performance expectations and will be addressed through project approval forums for subsequent update of the SCAMP.

18. Human Constraints. The human constraints of a project need to be addressed in the SR and should form part of the design drivers that dictate the technical hardware solutions during the development phase. These human constraints will *inter alia* make use of anthropometrical data to consider ergonomics, human endurance, man-machine interface criteria, psychological aspects, etc in pursuance of both the stipulations of the Health and Safety Act and enhanced performance of the system solution in accordance with RSA-MIL-STD-127 : Ergonomic Design and Design Criteria. Where applicable, MIL-STD-1472 F : Human Engineering, is also to be used. Failure Mode Effect and Criticality Analyses (FMECAs) are to be done on all systems in accordance with MIL-STD-1629A to amongst others verify that no unacceptable risks to the operator are inherent in the design. The DOD/SG/2/99 Policy on Defence against Chemical and Biological Weapons (Reference I) spells out the defence policy regarding Chemical and Biological (CB) defence. Personnel related requirements derived from this policy need to be addressed in all projects. Solicitation of advice and guidance from the Military Health Services is mandatory for all projects.

19. Authorisation Constraints. The authorisation of a project, which contains functional, financial, timescale and human, and other requirements, is globally considered to be a constraint in itself. Any planned activity therefore needs to be verified against existing project authorisation prior to contracting thereof. The execution of activities outside of the authorised constraints of existing documentation will therefore be deemed to be unauthorised, and subsequent adaptation of authorised documentation will not be entertained as they will be deemed to be Ex Post Facto authorisation. Verification that the authorised constraints are not exceeded is the responsibility of the Joint Project Team.

PROJECT MANAGEMENT AND AUTHORISATION FORUMS

GENERAL PRINCIPLES

20. Projects will be authorised and/or directed through Military, Governance, Armscor and "Joint" management forums. These forums are depicted in Appendix C.

21. All these forums have properly authorised constitutions that must be revised on a regular basis.

22. Project documentation may not be submitted to any of the governance forums without prior recommendation by the relevant military recommendation forums.

23. All members of Authorisation forums are to have a proper security clearance, commensurate with the agenda items at hand and are to sign the prescribed declarations of interest. Should any conflict of interest exist, then the relevant member will recuse him/herself by leaving the meeting temporarily or permanently for the duration of the relevant deliberations. Secretaries of forums are entrusted with the obligation to ensure that this is verified throughout. In special circumstances, it is the prerogative of the meeting to consider waiving the requirement that the person involved should physically leave the meeting. Under these circumstances, the minutes are to appropriately reflect such decisions.

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24. Once the applicable project phases have been approved by the AACB, AASB and AAC, contracts on industry for the execution of the applicable phase can be initiated via the Armscor contracting process.

MILITARY RECOMMENDATION FORUMS

25. Military recommendation forums are essentially instituted to verify and authorise the needs of the DOD against the Military Strategy and derived Force Design/Structure Planning.

26. Client Specific Forums. Each client environment has a forum specifically tasked and mandated for the approval of Required Operational Capabilities (ROCs) in a coordinated fashion within that organisational component in order to recommend needs to higher authorities (See Appendix D). The procedures followed at these forums, however do not form part of this policy.

27. OSC. Client approved ROCs are submitted to the OSC for consideration, evaluation and prioritisation within the broader SANDF context, and against the capability requirements emanating from the Joint Military Strategy. During this evaluation, the priority is confirmed (constituting approval of ROC) whilst a sponsor is allocated and possible duplication is prevented.

28. MC. For new and urgent ROCs, as yet unfunded or in need of substantial extension to already allocated SCAMP funds, such ROCs are routed by the OSC to the MC in order to obtain MC direction regarding priority. Politically contentious new ROCs should also be submitted to the MC for notification, whether funded or not. From time to time, when extensive changes to the acquisition portfolio of projects are required, a new issue of the SCAMP (as described herein) will be authorised by the MC.

GOVERNANCE FORUMS

29. Governance forums are instituted for the verification of process integrity, the authorisation of project phase approvals and allocation and commitment of financial resources. The validation of project administrative documentation against policy prescripts, the configuration management and financial scheduling will be facilitated within DAPD.

30. Armaments Acquisition Council (AAC). The approval structure for project submissions consists of three levels. The highest level of approval is the AAC, chaired by the Minister of Defence. The final selection of the equipment as well as monetary commitments for Cardinal Projects, are undertaken at this level. The value system developed for the specific project during the PS and AP milestone approval. The AAC will identify the cardinal projects that will be presented to Cabinet for approval (See Annexure 14 to Appendix N for guidelines for preparing and submitting a Cabinet memorandum). The Council's aim, functions, composition and rules are contained in its constitution. (See Appendix E).

31. Armament Acquisition Steering Board (AASB). The second level of approval for armaments acquisition is the AASB, chaired by the Secretary for Defence. The board approves non-cardinal projects with regular reporting of such approvals to the AAC. The Board also recommends prescribed milestone documents of cardinal projects to the AAC. The final selection of the equipment as well as monetary commitments for non-cardinal projects is undertaken at this level. The Board's aim, functions, composition and rules are contained in its constitution. (See Appendix F).

32. For sensitive projects (Top Secret and certain Secret projects), members of this forum will be involved on all levels, but on a need to know basis only (Refer to AASB constitution for members of reduced AASB). Transparency and audit trails must however be ensured without compromising security.

33. Armaments Acquisition Control Board (AACB). The AACB, chaired by the Chief of Acquisition and Procurement, is the third level of control and is the departmental node for the initiation and completion of projects. The Board approves class 2 changes to authorised project documentation and regularly reports such approvals to the AASB. The Board screens all milestone documentation for submission to the AASB. The Board's aim, functions, composition and rules are contained in its constitution. (See Appendix G).

34. The project approval and control process during armament acquisition is depicted in Appendix H.

STRATEGIC DEFENCE PACKAGES FORUMS

35. Management Forums

- a. Treasury
- b. Other Departments

ARMSCOR CONTRACT AUTHORISATION FORUMS

36. Armscor contract authorisation forums are established to act as contracting authorities for all defence matériel in accordance with relevant regulations and prescripts.

37. All contracts have to then be authorised by formal contract authorisation committees with respect to legal, financial, commercial and technical integrity. The composition of these authorisation committees must reflect adequate and appropriate representation of all relevant stakeholders in the acquisition process and must include members from Armscor, the SANDF, the Secretary for Defence (DAPD), and other relevant divisions of the DOD. Armscor shall not enter into contracts with industry prior to the authorisation for a particular project phase by the appropriate governance forums.

38. Authorisation Committees. In terms of the Armscor Act, the decision making powers with respect to contract authorisation, are vested in the Corporation's Board of Directors. The Armscor Board has formally delegated its contract authorisation powers to various levels of subservient authorisation committees. The composition and delegated decision making powers of the respective authorisation committees are contained in Armscor's Directives relating to Decision-Making Powers (A-Corp-001).

"JOINT" DIRECTING FORUMS

39. "Joint" directing forums are instituted for the directing and coordination of extensive and complex multidisciplinary projects. These forums have no additional powers than those residing within each of the individual members in their own rights and delegations.

40. Project Control Board (PCB). A PCB will be constituted for all Cardinal projects with the aim of directing higher order activities relevant to the project execution. The Chairman of the PCB will be the Chief of Acquisition and Procurement. Membership of the PCB will be

limited to management of DAPD, involved Services/Divisions and Armscor. The Board's aim, functions, composition and rules are contained in its constitution.

41. Project Steering Committee (PSC). When the extent of a project and resulting workload on the PCB so dictates, a second (lower) level of directing and coordination committee, namely a PSC can be constituted with the aim of directing lower order activities relevant to the project execution. The Chairman of a PSC will be the relevant DAPD director with involved Services/Divisions represented at Director level. Armscor should be represented at Senior Manager level. The Committee's aim, functions, composition and rules are contained in its constitution.

PROJECT AUTHORISATION MANAGEMENT

INTRODUCTION

42. In order to appropriately manage the inherent risks associated with weapons system acquisition, the task is broken up into a logical accumulation of linked, sequential activities and submitted in document format called milestone documentation for the purposes of this policy. These milestone documents are then authorised by delegated approval forums, dependent on the significance of the project as reflected by its classification.

CLASSIFICATION OF PROJECTS

43. Only two classifications are used for armaments systems acquisition projects, namely Cardinal and Non-Cardinal. (Refer to Section 1, Chapter 5, par 10). Armaments acquisition projects are classified as cardinal or non-cardinal in order to determine the level of top management involvement (approval forum) in the DOD that is delegated with powers of recommendation or approval during the submission of milestone documentation. Cardinal projects are in general approved at a level higher in the governance authorisation hierarchy than non-cardinal projects.

PROJECT MILESTONE DOCUMENTATION

44. The table hereunder provides a summary of the content, level of discretion (mandatory or not), validity period of authorisation and representative decision of the project milestone documentation referred to above :

M/S	DOCUMENT	CONTENT	MANDATORY	VALIDITY	DECISION TYPE
0	Required Operational Capability (ROC)	Operational priority	Y		Priority *
0	Staff Target (ST)	Operational requirement	Y	1 Year	Project **
1B	Staff Requirement (SR)	System performance	N	2 Years	Concept
1C	Project Study Report (PSR)	Option selection	N	1 Year	Make/buy (System)
2	Development Plan (DP)	Development criteria	N	2 Years	Development
2A	Acquisition Plan (AP)	Planned deliverables	Y	3 Years	Manufacturing
4	Closure Report (CR)	Completion criteria	Y		Operational

* "Priority" refers to the determination of the validity and priority of a requirement within the context of all the SANDF armaments requirements.

** "Project" refers to the initial official authorisation of a project to expend funds.

DOCUMENTATION AUTHORISATION

45. Milestone documentation referenced above, are authorised by military and governance forums whereas DAPD/Armscor confirms achievement of prescribed baseline establishment requirements before proceeding with the subsequent phase. This policy will focus on governance requirements, while clarification only will be provided for military authorisation forums. Although the context of any of the above-mentioned documents may stretch over longer periods than indicated above, and are authorised as such, it is to be noted that the document itself as a baseline document only remains valid for the periods defined above. Activities should always be covered by the specific authorisation given, and where deviations are inevitable, they should be covered by a new authorisation before any resources are committed or committed by implication (resulting in possible ex post facto situations).

REVISION OF DOCUMENTATION

46. Changes to the latest authorised milestone documents, are made in such a manner that every bit of information contained therein, is valid and reflects the current situation when submitted for approval. This is valid until a new milestone document of the process is reached. Changes that become necessary to previously authorised milestone documents essentially belonging to previous phases need only be updated in as far as it impacts on user needs, timescales and finances, and not to administrative arrangements already superseded by the latest authorised documents. Should changes to approved baseline documentation be required, refer to Annexure 10 to Appendix N for further guidelines in this respect.

CHAPTER 6: ARMAMENTS ACQUISITION: GENERAL

CUSTOMER FURNISHED EQUIPMENT (CFE)

47. Principles. In principle, CFE should be avoided in armaments acquisition projects. In the acquisition of new systems it is sometimes advisable, for standardisation purposes or owing to non-availability, to integrate CIs from existing inventory.

1. The delivery of previously agreed upon CFE as part of the final system will be contractually enforceable. The relevant Service is thus obliged to deliver such serviceable CFE according to an agreed to configuration baseline and in accordance with a fixed schedule. These obligations will be embedded in a formally approved CFE Plan. These plans must also include the responsibility of the main contractor for liability for loss or damage while the CFE is under his control.

2. The primary contractor will be responsible for the system performance of the total delivered system, inclusive of any CFE in the same manner that he would for subcontractor delivered subsystems.

3. Armscor as the contracting party, is obliged to deliver agreed upon CFE items to the main contractor. It is however the project teams' responsibility to ensure the CFE items are sourced and prepared for timeous delivery.

4. In principle, costs associated with preparation and delivery of CFE, will be borne by the project, and are to be budgeted for accordingly. Replacement costs of the CFE itself, will not be borne by the project.

PROJECT SECURITY

5. Principles and Instructions. The focus of project security has widened from the traditional management of risk pertaining to espionage, sabotage or other subversive activities which may endanger the execution of a project to also encompass industrial espionage. The management of project security must thus continue to receive adequate management attention and be directed by a Project Security Plan. Where necessary, an appropriate Project Media Plan as a subset of the Security Plan must be developed within the security management process to address relevant elements of a project proactively so as to enable media liaison divisions to respond correctly to questions from local and foreign media. Refer to Appendix N, Annexure 15 for an example of these plans.

6. The allocation of project code names and the handling thereof during project execution, is to be done in accordance with the prescripts of the policy on code names issued by Defence Intelligence.

7. It is further imperative that all personnel associated with a project and its management must have an appropriate security clearance. The respective Service Acquisition Director is entrusted with the responsibility to ensure compliance to this requirement in respect of SANDF personnel, whilst Armscor is responsible in respect of Armscor and contractor personnel.

8. During the execution of projects, due cognisance should be taken of the prescripts of the Minimum Information Security Standards (MISS).

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TRAINING

9. Project Officers and Project Teams. Suitable candidates are to be identified timeously by the Service for appointment to project teams. These candidates are required to pass the prescribed course on military project management prior to appointment on the project team.

48. Responsibility. Although it is the responsibility of the Service and Division Chiefs to train their identified project officers, the DAPD will endeavour to, as far as is practicable, train candidates identified for appointment as project officers. If this cannot be achieved, training should be completed before full responsibility for a project is transferred to the incumbent.

GENERAL PROJECT ADMINISTRATION

49. Overseas Visits and Courses. Project teams will ensure that requirements for overseas visits and courses are scheduled timeously for incorporation in annual visit schedules. Budgetary provision will cover air travel and subsistence allowances for these visits and courses, but will be restricted to project related personnel only.

10. Management of Foreign Offices. The support of DOD personnel during foreign placement may be addressed through the established Armscor administration process, and in terms of Armscor practice relating to Foreign Service Conditions of Employment (A-Prac-2012), if required.

11. For each initiated project with the above requirement, an MOU should be entered into between DAPD and Armscor, covering inter alia, remuneration, accommodation and general support and administration for such seconded personnel as well as an agreed upon responsibility matrix and project performance measurement criteria that will apply for the duration of the project. Conditions of service should, as far as possible, be standardized within and between foreign projects, irrespective of whether it applies to DAPD or Armscor personnel.

12. Corporate Compliance Assurance. Corporate compliance assurance during and after the armaments acquisition process, is managed by Armscor on behalf of the DOD, and makes provision for the negotiation of applicable agreements/protocols in accordance with the US Arms Export Control Act, the US International Traffic-in-Arms Regulations, and any other such compliance requirements set by foreign countries.

13. End User Certification. Certain items acquired by the DOD, require the issuance of formal EUCs in order to control and restrict their use and disposal. The management and authorisation of EUCs shall be the responsibility of the Chief of Acquisition and Procurement and Armscor, and subsequently processed by the National Conventional Arms Control Committee. Acquired items (which could entail complete systems) therefore need to be subject to a formal configuration control process by the user for the life cycle of the system to ensure integrity and traceability of end user controlled items.

FINANCIAL ASPECTS

FINANCIAL MANAGEMENT – STRATEGIC DIRECTION

14. The Defence Budget is a result of a sequence of events as detailed under the Strategy and Planning headings of Chapter 2 of this policy. To reiterate: Defence Policy is

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described in the White Paper on Defence. The Defence Review was compiled from the White Paper on Defence and spells out what tasks the SANDF is required to execute, what course(s) of action and with what force structure and force support the SANDF can execute these tasks. These planned activities will be converted into programmes to ensure that personnel and equipment are maintained in an orderly and economical fashion. The process of requirements planning therefore consists of three distinct actions, ie planning, programming and budgeting, which are executed through an iterative process.

FINANCIAL PLANNING

15. The basis for financial planning is that of a sustainable force design and structure, ie that the required renewal, upgrading, preparation, maintenance and disposal thereof can all be achieved within the authorised funds as reflected in the budget. Based on the relative importance of defence capabilities, financial ceilings are subsequently allocated to individual force structure elements, covering their funding needs for force preparation, force maintenance, upgrading, renewal and disposal. The upgrading and renewal portions are made visible and budgeted under the authority of the Chief of Acquisition and Procurement, and are considered to be project ceilings within which the required capability is to be established. If force structure elements prove not to be sustainable, the lowest priority force structure elements need to be forthwith discontinued and removed from inventory.

PROGRAMMING AND BUDGETING

16. Responsibility. The Secretary for Defence is primarily responsible for high level programming and budgeting and in-year control and auditing of defence expenditure as stipulated in the PFMA (Reference Q). The existing MTEF cycle is utilised as a basis for the planning of the new budgeting requirements for the follow-up MTEF cycle, which starts in the 0-2 financial year.

17. SCAMP. Priority budgeting requirements are scheduled on the SCAMP. For armament acquisition, the SCAMP co-ordination function is delegated to C Acq who in turn is reliant on respective DAPD Directors and project teams for detailed project inputs and Chief Director Acquisition for advice. Based on the priorities allocated by CJ Ops, combined with the prevalent industrial capability and the particular approval status and strategy of individual projects, C Acq schedules upgrade and renewal projects within the limits of the MTEF allocation agreed for capital weapons systems and technology acquisition. This results in a schedule of annual funds per project, contained in the 30 year SCAMP, which is updated during the annual cycle as well as in-year during execution. Unfunded additional requirements, in exceptional cases, as well as unforeseeable and unavoidable expenses may also be motivated to the Treasury Committee (approved by the MinComBud) in accordance with the timescales depicted in Appendix I. The budgeting process actions and associated timescales from the 0-2 to the 0 financial years are as depicted in the diagram in Appendix J. This budgeting process is repeated annually for consecutive MTEF cycles.

18. Source of Financing. Acquisition of Category 1 matériel is done through the expenditure of capital funds budgeted on the FMS Folio 02 : SDA. Acquisition related support activities eg Programme Management, S&T and Overseas office operating expenditure are budgeted on the GDA under Folio 01 Capital. Apart from new budget authorisations by Cabinet, the SDA may also be augmented, after due motivation and authorisation through the appropriate channels, by the proceeds from the sale of excess defence equipment previously purchased from this account and royalties on technologies previously developed with funds obtained from this account.

19. Cash Flow. Cash flow is handled in terms of Chief Financial Officer (CFO) instructions. In accordance with these instructions, funds may be committed in advance (up to four years), and if contracted but not spent in the year of allocation, may roll over to successive financial years. The reason for this allowance is that industry is typically contracted on a multi year basis and also due to unforeseeable and unavoidable delays in delivery of contracted deliverables. This could also mean that the cash flow varies greatly from the original planning. Funds in the SDA may therefore roll over from one year to the next under the following circumstances :

- a. Cash. Cash left uncommitted at the end of the financial year, be it as a result of surpluses from the previous financial year budget or from the income of weapons system sales, may once a year be requested from the Treasury Committee, for eventual approval by the MinComBud, during the adjustment budget activity for allocation to Acquisition, thus effectively causing the funds to roll over from the previous financial year.
- b. Commitments. Unredeemed authorised commitments roll over to the following financial year with their associated funds. A motivation is required to National Treasury until the SDA becomes a schedule 4 account, which is intended to give the DOD greater autonomy over allocations. The total amount of committed roll-overs is annually made visible together with the annual budget requirements during the submission of the Departmental Vote to Parliament.

20. Budgets and Expenditure. No project funds may be placed on budget and no FAs may be issued prior to the project being authorised by the MC.

21. Financial Data. Financial data contained in the submissions is to be reflected in rand values applicable at the date of the submission whilst rates of exchange for foreign currencies, where applicable, are also to be indicated with the month of calculation indicated in brackets. Care must be taken to ensure that submissions contain full visibility as to all possible direct as well as indirect financial implications associated with the to be approved activity.

22. Internal Allocation of Authorised Funds. Acquisition of Cat 1 matériel (armaments) is done bmo expenditure of capital funds. A central "stokvel" contribution system to capital projects is to be introduced in the DOD to centralise all control and execution of project or project related activities within the DOD. This "stokvel" will be managed and controlled by Chief of Acquisition and Procurement on behalf of the DOD. Armscor, as the DOD acquisition agency, will be funded from this "stokvel" account by means of a transfer payment.

23. Any services rendered by Armscor to Service or Divisions, not catered for in the SLA between DAPD and Armscor, will be funded by the relevant requirement stator eg the drawing up of Business Plans for procurement within a specific Service. All such requirements will be channelled through the office of C Acq & Proc.

24. Administrative requirements for projects are budgeted for under Folio 01 : GDA, Capital. This budget input will be given by each project team to the relevant DAPD director. This must be included in total project allocation as per the SCAMP list.

25. The FMS will be the only system used for Armaments Acquisition Financial reporting and control.

26. First Order Estimations. Armaments acquisition budgeting is governed by formal acquisition administrative documentation, ie the LTDRS, that provides indicative figures (first order estimations) for individual projects, against the capital budget ceiling provided by THE CFO. The first estimate is an order of magnitude analysis, which is made without any detailed engineering data (LTDRS formulation).

27. The programming and budgeting process will further refine the first order estimation resulting in an eventual approved Departmental Vote.

28. Effective estimating begins before proposal development and starts with preliminary customer requirements, (eg ST and SRs) and leads to a top down estimate with cost targets.

29. Secondly there is the approximate estimate (or top down estimate). This type of estimate is derived from previous projects that are similar in scope and capacity as a benchmark.

30. The definitive estimate is prepared from well defined engineering data including (as a minimum) quotes, fairly complete plans, specifications, unit prices, and estimate to complete, which leads to a refined budget input for the Departmental Budget Submission.

31. MTEF Responsibility within Acquisition. The responsibility for the generation of provisional MTEF inputs for Armaments Acquisition is vested within DAPD, who in turn will derive this from respective project business plans.

32. Revisions. Financial revisions will take place at least once a year, addressing the current financial year and its associated 3-year cycle, as well as the following financial year cycle, as input to the Departmental budget submission and to the approved Departmental Vote.

33. No project activity resulting in the expenditure of funds may be embarked upon unless funds therefore have been specifically budgeted for by the DOD. No contract may be placed without authority derived from a direct approval provided by DAPD.

FINANCIAL CONTROL

34. Responsibility. Control of acquisition finance is the responsibility of C Acq and his delegates ie DAPD directors. Rules and delegations for the reallocation of funds within the budget will be established, subject to the terms of Article 2 (2) of the Special Defence Act No 6 of 1974 (Reference J), DOD/FIN/00011/2000 (Reference K) DOD/FIN/00002/1999 (Reference L) and DOD/FIN/00014/2000 (Reference M).

35. In-Year Control. A computer based system had been devised to facilitate in-year financial control per project, reflecting its commitment and expenditure planning and status. The system is available to all project staff of DAPD and Armscor and is commonly known as the "Yellow Pages". Integrated Project Teams are specifically burdened with the responsibility to ensure that the "Yellow Pages" at all times accurately reflects the prevailing situation of their projects. For the management of project financial baselines, refer to Annexure 7 to Appendix N for further guidelines in this respect.

36. Considerations in respect of the Issuing of Financial Authorisations. The approved Departmental Vote and Departmental programme budget as approved do not constitute an authorisation for the expenditure on a project or transfer of funds between projects.

37. Project Financial Authorisation may be issued after the following have been verified :

- That project funds required for specific years have been budgeted for and appear in the Departmental Budget Submission or in the approved Departmental Vote as duly changed and authorised during the year of execution;
- That the particular phase of a project has been approved by the appropriate forum;
- That the FA does not exceed the approved financial ceiling for the specific phase.

38. Expenditure. Planning that gives rise to FAs should be such that the FAs can be placed prior to the second quarter of a financial year.

39. Planning for milestone payments within a FA must, where possible, exclude payment in the last three months of a financial year.

40. Financial Personnel Allocation. An allocation of suitably qualified financial personnel will be made available by the CFO to C Acq to ensure effective execution of delegated programming, budgeting and expenditure control functions.

41. In the case of larger acquisition projects, dedicated financial functionaries can be appointed to the project. For small projects, the financial support within DAPD can be provided. Accountancy expertise can be made available where required.

42. Project Budgetary Responsibilities. During project execution the project team is responsible for budgetary action. Timely warning of budgetary requirements within the operating environment must be provided by the project team to ensure that the system manager is enabled financially to ensure effective support handover.

AUDITING OF PROJECTS

43. Every project will be subject to regular audits which are done strictly iaw the internal audit policy of the DOD as promulgated by the Inspector General.

44. Planned Audits. Audits on identified programmes will annually be planned independently by DAPD and by IG. These planned audits will be augmented by ad hoc audits during the course of a year, as the need arises.

CONFLICT OF INTEREST

45. For purposes of this section, "Family Member" in relation to an employee, means his/her parent, child or spouse, and includes a person living with that employee as if they were married to each other.

46. Any employee of the DOD and Armscor must:
- disclose to the Secretary for Defence, the Chief of the SANDF, or the Chief Executive Officer of Armscor, as the case may be, any direct or indirect interest that such member or employee or his/her family member may have in any matter relating to any acquisition activity of the Department or Corporation as the case may be; and
 - withdraw from participation in the activity in question unless the Minister of Defence, the Secretary for Defence, the Chief of the SANDF, or the Chief Executive Officer of Armscor, as the case may be, decides that the interest is trivial or irrelevant.

47. The Secretary for Defence, the Chief of the SANDF, or the Chief Executive Officer of Armscor, as the case may be, shall either conduct an internal disciplinary hearing or pursue criminal prosecution against any employee who fails to make disclosure in accordance with paragraph a or fails to withdraw in terms of paragraph b.

DECLARATION OF CONFLICT OF INTEREST AT ACQUISITION DECISION MAKING MEETINGS

48. The Chairperson of the AAC, AASB, AACB or any other relevant delegated decision making body, shall, at the commencement of such meeting, require each member of the meeting to disclose any conflict of interest that he or she may have concerning any matter to be discussed at that meeting.

49. All members of the AAC, AASB, AACB or any other relevant delegated decision making body, shall, at the request of the Chairperson, disclose any conflict of interest that he or she or a family member may have concerning any matter to be discussed at that meeting.

50. Following a declaration of conflict of interest that may arise from paragraph 49, the Chairperson shall instruct the member to withdraw from participation in the activity in question, unless the Chairperson decides that the interest is trivial or irrelevant.

COMPLIANCE WITH POLICY ON CONFLICT OF INTEREST

51. All members and employees in service of the Department and Armscor shall comply with the policy regarding conflict of interest.

52. Non-compliance with the policy relating to conflict of interest may result in internal disciplinary proceedings or if appropriate, criminal proceedings being instituted.

53. Any action that results in unauthorised or irregular expenditure will be dealt with as prescribed in applicable national legislation, regulations, instructions or policies.

54. Nothing in this section shall derogate from the jurisdiction of a competent military court to try and punish any person contemplated in section 3 of the Military Discipline Supplementary Measures Act, Act No 16 of 1999 (Reference N), for any offence in terms of this policy.

SECTION 2

CHAPTER 1: ARMAMENTS ACQUISITION PROCESS AND PROCEDURES: PROCEDURAL CONTEXT

MANAGEMENT OF PROJECTS

1. On account of their autonomy, the DOD and Armscor will establish their own respective organisational structures to manage projects/programmes on their respective levels of involvement. Management is understood to all the aspects of planning, execution, control and reporting, to ensure that all activities embodied in the system hierarchy integration process (SHIP), as represented in the SHIP diagram (Appendix K), will take place in an orderly manner within the framework of this policy. Models for the control of projects may differ, but must, within the framework of this policy, be adjusted to the scope and complexity of each project or programme.

MANAGEMENT INTERFACES

2. The management of a project cannot, however, take place in isolation only within the framework of the various organisations. Close liaison between the management organisations on related levels is essential. This liaison must essentially but not exclusively take place on level 6 between DAPD and Services, level 5 between DAPD and Armscor, and level 4 between Armscor and Industry. Two management levels within each organisation are envisaged, namely a top management responsible for dealing with policy aspects, and a senior management responsible for planning, co-ordination and control aspects.

CONTROL OF PROJECTS

3. For detailed planning and control of the execution of projects, a project team is compiled, consisting of:

- Full-time Members
 - The Service Project Officer.
 - The Armscor Programme Manager (APM).
- Part-time Members (Co-opted as Required). The said functionaries of the project team are assisted by supporting working groups of experts from their own ranks. Examples of part-time military representation on the project to provide specialist inputs include an ILS Officer, Technical Support Officer (TSO), Weapons System Manager (WSM), Personnel Manager, Facilities Manager, Commodity Manager, Financial Manager and so forth.

4. The Project Officer, in conjunction with the APM, forms the project management committee responsible for the day-to-day management of the project.

NOTE : In the Defence Family, responsibilities assigned to organisational sections shall be carried out according to the spirit of this policy. This requires on-going interaction between the parties in order to achieve optimum results.

MILITARY TEAM APPOINTMENTS AND PROFILES

5. Functions of the Joint Project Team. The functions of the project team are to provide a comprehensive managerial and system engineering function during execution of the project which includes inter alia the following :

- a. Carry out functional analyses.
- b. Carry out feasibility studies.
- c. Evaluate options bmo Analysis of Alternatives (AoA) or COEIA.
- d. Compile prescribed staff documentation.
- e. Compile appropriate plans.
- f. Prepare submission documentation.
- g. Carry out prescribed studies.
- h. Prepare solicitation documentation and prescribed reports.
- i. Evaluate offers and make acquisition recommendations.
- j. Compile FA requests.
- k. Negotiate tenders and contracts.
- l. Manage contracts and amendments.
- m. Manage OT&E and acceptance (This includes qualification, certification and release to service activities).
- n. Manage the handover process.
- o. Manage the closure / termination process.
- p. Report jointly to management and higher forums.
- q. Continuously ensure in time accuracy of all computer based planning and reporting systems in order to provide credible required management information, in particular the FMS as reflected in the "Yellow Pages".
- r. Manage all other required project related processes/activities.
- s. Manage project communication, including media plans.

l. Manage project security.

6. Principles of Joint Project Team Functioning. Project teams are joint structures between the DOD (DAPD) and Armscor and shall be constituted and function in accordance with the following general guidelines:

- a. The teams shall be made up of members nominated from both organisations. The DAPD members shall be lead functionally by the Project Officer and the Armscor members shall be lead functionally by the APM.
- b. All team members shall be responsible for the execution of their mandated task.
- c. The concept of situational leadership shall apply to the functioning of the project team. This shall be guided by the following principles:
 - i. The DOD/DAPD focus shall primarily be on issues relating to level 5 and higher in the system hierarchy and the Armscor focus shall primarily be on issues relating to level 5 and lower on the system hierarchy.
 - ii. The DOD/DAPD focus shall be on statement of performance requirements including verification thereof and budgetary issues whilst the Armscor focus shall be on technical and contractual issues.
- d. Notwithstanding the above and taking into account organisational responsibilities as stipulated in this document, members of the project team should be employed in the most effective manner possible to exploit their capabilities and strengths.
- e. The project team shall establish and document a formal structure and functional responsibility matrix to address individual responsibility and accountability for the life cycle of the project. This is to include the establishment of performance management criteria to be formally agreed to by DAPD/Armscor Management and that will be used to evaluate the performance relative to project objectives.
- f. The principles of joint decision making and reporting shall apply.
- g. Irreconcilable disputes within the team shall be referred to the relevant DAPD director and appropriate Armscor Senior Manager for arbitration.

7. Project Officer (PO). When a Service identifies a need, an operational requirement must be registered at the appropriate forums in order to initiate the acquisition of this capability. The Service then further assists the project division in identifying a suitable officer who can be appointed as project officer. The project officer must be appointed as soon as possible, and to ensure continuity should remain with the project until its completion. He is to be assisted by functional specialists on a temporary or permanent basis. These specialists are responsible for their own inputs with regard to the project. This officer must have sufficient knowledge and experience to:

- a. Professionally carry out the activities as laid down in this policy, read together with relevant supporting policy, or have them so carried out.

- b. Provide professional advice and guidance on relevant military matters to Armscor and the contracted Industry.
- c. Maintain and promote good relations between all participating parties.
8. Primary Functions. The project officer's primary functions (See Annexure 12 to Appendix N for guidelines on drafting a letter of appointment) are :
- To appraise himself of the considerations pertaining to the PreS and the relevant matters giving rise to the resultant ST (See Annexure 13 to Appendix N for guidelines regarding Handing and Taking Over of a project).
 - Carrying out the functional study (FS), in co-operation with the APM and other organisations involved, and drawing up the SR for submission to his director.
 - Co-ordinating all user system (level 6 and higher) activities as well as all user system/products system (level 6/5) inter-level activities with *inter alia* the designated capability manager.
 - Handing over all project deliverables to the User/Products System Manager as soon as the project officer is in a position to prove to the designated weapon systems manager of the supportability of the weapon systems fleet, in accordance with a prearranged, written, handing-over plan. This implies, *inter alia*, that:
 - the weapon system, with regard to maintainability, is accepted by the weapon systems manager prior to it being made available by the project manager for utilisation;
 - each individual piece of main equipment (product, per serial number, with the accompanying support equipment, documentation and serial number specification data, shall pass the acceptance test;
 - a physical configuration audit shall be part of each serial number acceptance test, to confirm the correlation between equipment and documentation, for example, with respect to each baseline (milestone) of the acquisition phase; and
 - handing over a weapon system is not necessarily equivalent to implementation. Operational and supporting risks shall be recorded and managed responsibly.
 - Providing advice and guidance to the APM on all relevant military aspects during the design and development of the product or system.
 - Determining military requirements in respect of personnel, logistic and doctrine requirements for inclusion in the relevant documentation.
 - The professional handling of all aspects regarding project finances, including logistic and operational activities, insofar as it concerns the SANDF.
9. Joint Project Team. As mentioned in par 4, additional military members may be co-

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opted on an ad hoc basis to serve on the project team at an applicable level when specialist inputs are required for the furtherance of the project. Examples of these include, *inter alia*, interoperability and jointness aspects by joint operational experts, logistical aspects by the products system manager, operational aspects by a user specialist, personnel aspects by a personnel specialist, financial aspects by a financial specialist, security aspects by a project security specialist and planning aspects by a project planning specialist.

NOTE: Personnel from a Service may be seconded to a programme team, particularly where specific skills will contribute to better interpretation of and compliance with the stated user requirements.

ARMSCOR TEAM APPOINTMENTS AND PROFILES

10. Appointing the APM. The head of the business unit to whom the programme has been allocated for execution, appoints the Programme Manager, who must possess the following qualities :

- He must have applicable technical academic and administrative training (including formal management training), background and experience. Knowledge and experience of the structure and operating principles of the SANDF is recommended.
- He must have thorough working knowledge and have practical experience of the implementation of this policy and of supporting policies.

NOTE : It should be kept in mind that a Programme Manager's effectiveness is directly proportional to the continuity of his responsibility throughout the life of a programme. Continuity should thus be ensured by as far as possible, having the Programme Manager remain with a programme until completion thereof.

11. APM's Primary Responsibilities. The APM is the head of the programme office, which is the focal point for administration, and is responsible for the gathering and processing of all information regarding the programme in order to make it available to Armscor and the client or Service. The primary responsibilities are :

- Responsibility with regard to the detailed design development and production of the products system. This includes the responsibility of ensuring the technical integrity of the entire system and its support, including aspects such as qualification, certification, safety, etc
- Ensuring the integrity of the acquisition process and thus also of the product/products system. The necessary liaison relating to quality assurance must take place and be maintained throughout the programme by means of close liaison with the client/or Service in order to maximise first time acceptance of deliverables.
- Ensuring that the programme office is manned by competent administrative and technical functionaries.

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- d. Recommending the termination of the programme, or alternative solutions if objectives cannot be achieved within contractual limitations.
- e. Timely informing senior management levels, as well as the client (the project officer) of the fact that there are, or could be, deviations in the programme's technical performance, cost or schedule constraints.
- f. Carefully managing the situation when conflict arises between his/her responsibility to the client and his/her responsibility to Armscor, being his/her employer.
- g. Planning and execution of the programme within the technical, cost and schedule constraints, and in accordance with stated needs.
- h. Providing the client or Service with proof that stated requirements are being met.
- i. Serving as primary point of contact with the client Top Management and other personnel, as well as with the main contractor's top management and personnel.
- j. Complying with Armscor's organisational budgeting, contracting and cash flow objectives, in respect of the projects for which the Programme Manager is responsible.
- k. Making or enforcing the necessary decisions to ensure that programme objectives are achieved.
- l. Continuously maintaining the data integrity of all management information systems relating to project status, finances, etc

12. Programme Team. The APM is responsible, in conjunction with other line managers in Armscor, to establish the programme team from suitable and available personnel consisting of experts in the various functional technical fields who will carry out the programme. The programme team may thus include functionaries from disciplines such as engineering, manufacture, quality assurance, configuration management, finance division, purchasing, marketing, sales (where applicable), service, maintenance, logistics, etc. As far as practicable, all programme teams should be representative and also include some members under training, that will ensure future continuity and capacity building as prescribed by the relevant HR policies.

CHAPTER 2: ARMAMENTS ACQUISITION PROCESS AND PROCEDURES: PHASES

BACKGROUND

1. Introduction. The acquisition of material involves a complex process that can only be interpreted sensibly with the aid of a model. Given that a system can be built into a hierarchy from various parts and the different parts may be the responsibility of different organisations, it is necessary to regard acquisition within this context. Acquisition thus takes place in parallel on different system levels within different organisations. It is thus not sensible to refer to a phase in the acquisition process without referring to the hierarchical level at the same time.
2. Milestone Identification. The number 0, 1, 1A, 1B, 1C, 2, 2A, 3 and 4 used hereunder in conjunction with document abbreviations, refer to corresponding milestones that usually coincide with the baselines and that specifically refer to the combat group or user level of the systems hierarchy.
3. Process Flow. The complete acquisition process is described in terms of 15 separate functions as depicted in Appendix L.

NOTE : During the execution of technology projects, integrated project teams are structured with respective members with similar delegated responsibilities to that of acquisition project team members, as in detail prescribed in the technology acquisition policy.

INTERFACE WITH TECHNOLOGY

4. Aim. The aim of defence technology acquisition management is to identify technologies on a long-term prediction basis that will support the future needs of the SANDF as reflected in the SCAMP. This management system will take into account threat analyses and required operational capabilities arising from the force structure plan and will obtain, develop, mature and maintain technologies according to certain priorities, for employment during the acquisition and operation of user systems. Technology management is regarded as the activity of planning, approval, execution and assurance of technology establishment projects and plans.
5. Structure. The respective DAPD Service acquisition directors will chair their respective technology management committees in order to direct acquisition related technology development according to LTDRS requirements. These committees also have a controlling, monitoring and reporting function.
6. Co-ordination. The Director Technology Development will have a co-ordinating responsibility to ensure that no duplication occurs in technology development between services. The technology management structure is depicted in Appendix M.
7. Principle. Armaments acquisition should be based on mature products and technologies. Where a technology gap critical to the solution, is identified, the acquisition project should not be continued. Instead, the technology gap should be addressed through a

technology acquisition or development process. Once adequate maturity is achieved with sufficient risk reduction, consideration can then be given for the continuation of such projects based on the results thereof.

CHAPTER 1 CONCEPT PHASE

THE CONCEPT PHASE - GENERAL

1. Aim. The aim of the concept phase on levels 7 and 6, is to establish either FBLs for a level 7 combat grouping or a level 6 user system(s) enabling the tasking of Armscor with an unambiguous functional user requirement. If a combat grouping is not applicable, the activities are nevertheless carried out on level 7, but with data from the level 6 user system.
2. The Requirements Baseline (RBL-0). The concept phase formally commences when the Requirement Specification Baseline is attained. From the Force Design, the Service/Division extracts its identified higher priority operational shortcomings and formulates these on a single page document called the ROC for individual Force Structure Elements for submission to the OSC (see Appendix N for an example of a ROC). This document therefore reflects what is contained in the Force Development Plan, with a numerical cross-reference to this plan. In principle, this ROC forms the RBL-0 on level 7 and thus has official status only within the user environment. The RBL-0 represents milestone decision "0" and is taken by the user. The user hereby confirms that establishment of the capability is now to be initiated by execution of the concept phase on level 7 and/or 6.
3. The Functional Baseline (FBL-7/6). The SANDF concept phase formally concludes when the SANDF/Armscor baseline interface (level 6/5) is reached for the first time, ie, the level 6 activities for this phase have been finalized. Further iterations and refinement can take place while Armscor executes the PS, which represents the concept phase on level 5. At this point, the FBL represents the SANDF milestone "1B", the so-called "Concept Decision" and is taken by the user in conjunction with other involved parties in the SANDF. At interface 7/6, the FBL consists of a group of documents combined into one called the SR. This document contains the following :
 - a. The Project Management Requirements Statement (PMRS).
 - b. The Functional User Requirement Statement (FURS-1).
 - c. The Logistic User Requirement Statement (LURS-1).

NOTE : It is to be noted that neither the FURS or LURS exists in its own right, and can therefore not be administrated outside of the SR. Updating of these requirements can only be done through the prescribed process whereby an updated SR is authorised at the appropriate forum.

THE CONCEPT PHASE - FUNCTIONS

4. Scope. The concept phase on levels 7 and 6 thus includes all activities between RBL-8/7 and the FBL-7/6. These activities are grouped into functions 1 to 4 as detailed here under.

FUNCTION 1

5. Function 1: The Preliminary Study (PreS). The PreS is an in-house clarification exercise with regard to the operational requirement and is aimed at generating the FBL-1A inputs for level 7. During the PreS, the following aspects are addressed in detail :

- a. The current operational shortcomings that gave rise to the new requirement (qualitatively and quantitatively).
- b. The broad operational missions that have to be fulfilled by the new capability bmo mission analyses where applicable.
- c. The operational environment in which the system will be operated.
- d. The broad logistical implications contained in the new system.
- e. A first order estimate of overall restrictions within which solutions are to be investigated, especially with regard to standardisation requirements, time, finances and technology. This includes directions in which the requirement initiator has no interest in weighing up solutions and as such is to be omitted during the rest of the project.
- f. The possible interaction/overlap with active projects in own Service and other SANDF users.

6. Procedure. The PreS is carried out by the planning division (supported by relevant substructures such as formations, flotillas, etc) of the user during which the aspects addressed in par 7 are investigated. The PreS can also take on the form of an OR system analysis exercise that may be carried out bmo own capability or by accredited consultants. When using consultants, an OR activity is to be established for the duration of the task and financing is done from funds budgeted by the OR portfolio, as funding on the project does not cater for this expenditure. The OR activity terminates prior to the submission of the ST. During the PreS, the user may liaise with any interested or authoritative party. No potential contractor with an interest in the execution of the project should be contracted during the PreS, as independence and non-bias of such contractors are essential. The ST is compiled as an output of the findings of the PreS.

FUNCTION 2

7. Function 2: The Staff Target (ST). The ST is compiled by the user (see Appendix N for guidelines and an example of a ST) and represents SANDF milestone "1A". Milestone 1A represents the Project Decision and is thus regarded as the most important milestone of any project. This mandatory milestone of all projects is in principle approved by top management (Armaments Acquisition Council or the Armaments Acquisition Steering Board) and, like the AP, is a non negotiable document. The ST is basically a summary of the results obtained during the PreS, deduced from the aspects investigated and contains at least the following :

- a. Operational. A short explanation of the operational aim, missions and functions (qualitative), ie the FBL of the highest system level applicable, the operational environment in which the system is to be implemented, the operational performance as well as the broad logistical implications. Beside the above-mentioned, it contains a detailed description of the present system,

what it comprises (ie, a delineation of the system), its shortcomings and the reasons that gave rise to the new requirement as well as restrictions with which the project is to be executed.

- b. Finances. The submitted ST includes a total project financial ceiling, a broad annual requirement schedule as well as an indication of the funds required to execute the forthcoming phase for which approval is to be obtained. For projects already included on the SCAMP, the relevant SCAMP scheduling is to be included.
8. Procedure. The under mentioned procedure is applicable :
- a. The person, whom is accountable for the compilation of the ST, must obtain commentary from directorates as prescribed in internal procedures, as well as authorisation from the applicable Chief of the Service or Staff Division.
 - b. After the above-mentioned approval has been obtained, the temporary allocated code name is registered at the Int Div (Info Sec) and the project forthwith managed under that name and code. Only after approval of a ST may a project either expend money previously budgeted on the FMS as planned activity or obtain authorisation to shift money on the FMS to the project for expenditure. When subprojects are required as part of a main project, the following is applicable :
 - i. Subprojects requiring separate approval of SRs and subsequent documentation on at least AASB level, are handled in the same manner as for the registration of main projects.
 - ii. Subprojects that do not require separate AASB or higher approval in terms of this policy and procedure, are considered to facilitate in-house purposes only and, as such, are not registered with MI, do not use MI code names and numbers and are also not used in formal correspondence within the MOD. If convenient, the names of subprojects can be used in brackets after the main project. It is however to be noted that for these project/subproject combinations, the subproject documentation only has status/authority when dealt with as an integral part of the main project.
 - c. Subsequent to this, the ST is routed to C Acq with copies to all relevant Staff Divisions for comments/information. The under mentioned categories determine which Divisions receive copies :
 - i. The Operations Division (CD Ops Dev) for all projects.
 - ii. The Acquisition Division (CD Acquisition) for all projects. CDA inputs revolve around the compliance to prescribed project procedures, logistical aspects, as well as quality control of the documents that take Armscor, so that the latter will be able to carry out their responsibilities bmo normal interaction with DAPD.
 - iii. C Army (D Mun) for all projects where ammunition or explosives are applicable.

- iv. CMI (D ICT) for all projects involving computers (excluding embedded computers.)
- v. Chief of Joint Support (C Log) for all higher order logistic related inputs.
- vi. Chief of Defence Staff (DMS) for all projects relating to labour saving aids.

NOTE: Over and above the above-mentioned responsibilities, where applicable, Armscor's inputs are to be obtained. The ST is eventually recommended for approval by higher authority. This recommendation takes place only after all commentary has been considered, the ST has been amended if necessary, and the amended ST has been accepted by the parties involved.

- d. CD Ops Dev (DFS) determines if the requirement is in accordance with the approved material development section of the force structure plan, if other Services do not have a similar requirement and if the SANDF arsenal is not already able to satisfy the requirement. Subsequently the inputs are consolidated and provided to DAPD to incorporate on the agenda of the AACB that meets on a monthly basis. In terms of laid down criteria, the ST is evaluated and recommended to the appropriate level for approval for both ST and tactics to be followed for the rest of the project. Approvals are granted on Sec Def, AASB or Ministerial (AAC) level in terms of the project's classification, being cardinal or non-cardinal. When approved/not approved, DAPD is to inform the user of the result for action, and the parties submitting inputs, for information.

NOTE: Executive Submission. Given that the ST normally only encompasses a few pages, a submission is only used for bulky STs. Where there is a requirement for a submission, the executive submission (Appendix A of the ST) is to be made available to all parties (except C Acq, who is to receive the ST with all appendices) at least fourteen days prior to the next scheduled AACB so as to be available at the time of issue of the agenda. The original version of the ST, as signed by the user, Ops Staff Council, MC etc., is to be provided to DAPD for purposes of record keeping and configuration management prior to its submission for approval to the AACB.

- e. In exceptional cases, it is necessary to make amendments to the ST. When amendments are required to the stated operational need or when fundamental changes to the proposed approach for the subsequent phase(s) is intended, an amended ST in terms of the approval procedures applicable to the original document, is to be submitted (so-called class 1 changes) to the AACB. At this forum, C J Ops will advise on the impact of such proposed class 1 changes on the higher order user systems as reflected in the Capability Master Plan. The initiator of the requirement is responsible to place the ST under configuration control to ensure that later documents are discernible from earlier ones. For the purposes of Sec Def control, the document date is used for status discrimination. For purposes of internal use, ie where a re-submission to the

- A is not required (so-called class 2 changes), it is suggested that a supplementary identification is used together with the date identification, eg amendment 1, 2, etc
- f. The ST is classified and submitted to the forums for either recommendation and/or approval in accordance with Appendix N. This also applies to all other prescribed milestone documentation.

FUNCTION 3

9. Function 3: Functional Study (FS). The FS is an internal clarification exercise with regard to the functional requirement and has as objective, the generation of the FBL-7/6 inputs. Given that a close relationship exists between the functional requirements and the system concept, the two cannot be separated from one another. It is thus necessary to consider broad system options (ie concepts) on the level of at least the user system, and where necessary, on the products system and to build the functional requirements around them. The level 7/6 FBL (as summarized in the SR) consists of both the FURS-1 and LURS-1 as well as singular additional documents:

- a. The Project Management Requirements (PM Req) - 1 contains all the background information, requirements and instructions to, or required by any individual, division or party, to ensure effective management and smooth running of the project for successive phases to the FBL of at least the level of Products system, namely, the Armscor milestone 1. This may, *inter alia*, include provisioning for auditing of the project.
- b. Contrary to the above, the FURS - 1 contains primarily functional user requirements of the Products system and to a lesser extent, functional user requirements for the supporting products.
- c. The LURS - 1 contains primarily logistic user requirements for the products system and to a lesser extent, logistic user requirements for the supporting products.
- d. A Memorandum of Understanding (MOU) between the SANDF project management team and all internally and externally involved parties, whether they be Armscor, PWD, HR Support Centre or other projects that may be producing suitable subsystems, is to be compiled and attached to the SR (See Annexure 11 to Appendix N). The MOU is based on requirements emanating from the PM Req-1

10. Scope. During the FS, the following aspects are investigated:

- a. The system concept on at least the level of user system, but where also required, the concept on product level with emphasis on the primary product that may comprise the user system.
- b. The identified missions are studied in depth to deduce comprehensive functional requirements of the products system with emphasis on the primary product.

- c. The functional requirements are studied in detail to deduce all employment user performances of the products system with emphasis on the primary product. These user performances may be expressed in both qualitative and quantitative terms, the latter mentioned allows less room for faulty

NOTE : User Performance. User performance is the employment performance required to achieve a user's objective.

interpretation.

- d. The PM Requirements that will be necessary for the execution of the next phase. This includes, *inter alia*, the tactics for the following phase, the organisations that will be tasked, the number of subprojects required with mutual interfaces, the broad work break down structure, the responsibility matrix, the top level project milestones, etc.
- e. The ILS requirements in accordance with the policy contained in the document referred to as Log 9 and 10, pamphlet 1, part 8. These logistical activities are known as the Logistic Study (LS) 1.
- f. The operational employment environment is closely examined to specify quantified environmental parameters (outside conditions) in which the system is to be employed. It should be noted that not all parts of the system will be exposed to the same outside conditions due to specific positioning within the system. For these parts, the designer is to deduce environments against which each of the parts will be exposed, and wherein the system can function within specification.
- g. The second order limitations within which the solutions for the system are to be sought, particularly with regard to time, finances and technology.

NOTE : Value Analysis. Although individual user performances may, in general, be feasible, it is seldom possible to determine whether a large number of specified user performances can be converted into a workable, economical system without design activities. Synergism between laid down requirements, can only be determined by modelling and design that takes place at a later stage. Given that design trade-off actions between performances have to take place to achieve a synergistic and cost effective design, it is essential that the user weigh the laid down user performances (especially the more important ones) against one another to determine and stipulate the relative

11. **Procedure.** The FS is carried out by the projects division of the user during which time the aspects mentioned in paragraph 10 are investigated. The same provisions mentioned in paragraph 6 with regard to the use of consultants and the involvement of Armscor, are applicable. Given that Armscor is to a large extent responsible for the execution of the following phase of the acquisition process, they are to be involved during the FS.

FUNCTION 4

12. **Function 4: The SR.** The SR is compiled by the user (see Appendix N for guidelines and an example of a SR) and represents SANDF milestone "1B", the so called concept decision. The SR is basically a summary of the results of the FS as deduced from the aspects investigated and contains the following :

- a. **Introduction.** A short background sketch pertaining to the origin of the requirement as reflected in the ST and confirmation that the established requirement is still unchanged and valid. Furthermore, the operational necessity due to the threat, the envisaged employment, organisation, phasing in and - out, interaction with other equipment/weapons systems, facilities and timescale implications are detailed. A short description of unacceptable system concepts that have been considered as well as a description of the preferred system concept on the system levels described in Function 3 par 10.a is also required. The concept is to include system boundaries identifying products systems that may be included in the user system.
- b. **PM Req-1.** All project management information and plans described in Function 3 par's 9.a and 10.d are summarized as PM Req-1. Care is to be taken that, with reference to particular products systems, different organisations may be tasked to acquire them, eg Armscor as opposed to DPW, and as such, the approach to project management will differ.
- c. **Functional Requirements (FURS-1).** All functional requirements, including user performances as set out in Function 3 par 10.b and 10.c are summarised as FURS-1. The environmental conditions, within which the system is to operate, are included herein. This document forms the basis for the compilation of the Type "A" specification for the user system but occasionally also for the products system.
- d. **Logistics Requirements (LURS-1).** All logistical support requirements are contained herein (refer Log 9 and 10, pamphlet 1, part 8) and referred to as the LURS-1.
- e. **Financial Requirements.** The requirement established by the user to satisfy his need, must be restricted to the absolute minimum that is required to execute the identified task so that costs can be minimized. System effectiveness and technical performance must, however, not be sacrificed. Further, a cost estimate of the total user system is to be given, including the following :
- Estimated acquisition costs of the user system and if possible, of the individual products systems (restrictions included where possible). If this cannot be determined at this stage, consideration should be given to provide a financial ceiling as a restriction within which solutions should be proposed.
 - Estimated LCC for the user system and where possible for the individual products systems (including restrictions where possible). The basis of the estimate (at the least direct costs and where possible, indirect costs) as well as an estimate of accuracy are included

(confidence figure). When the employment phase of the life cycle exceeds ten years and results in large uncertainties being included, the LCC for the first ten years may be indicated separately so that greater accuracy can aid meaningful decision making.

- iii. Estimated unit cost of the primary equipment (including restrictions where possible).
 - iv. Project management costs for the Armscor concept and project definition phases. This includes costs required for consultants, contractors and for own use, eg overseas visits.
 - v. Estimated logistic support costs for non-recurrent and running costs (calculated at current R values) with a confidence figure.
 - vi. Financial objective as well as absolute ceiling above which solutions to the SR will not be considered. Any other financial restrictions applicable.
 - vii. Confirmation that funds are on budget, on which account, and if not, from where, when and in what manner it is intended to acquire such monies.
 - viii. Confirmation that funds expended in the preceding phase did not exceed the amounts authorised by the AAC/AASB.
- f. Estimated Quantities. Gauging from the operational scope of the requirements (eg number of theatres in which the system is to be concurrently deployed on its own or as part of higher order combat groupings), the identified missions and recurrence, system concept and financial restrictions, an estimate is made of the number of products required within the main products system with emphasis on the prime equipment.
- g. Timescales. Indications with regard to the following are to be provided:
- i. The planned date of commissioning of the equipment/weapons system.
 - ii. Expected timescales and objective dates for the different phases in the acquisition process with emphasis on the next phase.
- h. Tactics. Tactics are included where possible. If any particular aspects come to the fore during the feasibility study that requires particular authorisations, such aspects are to be emphasised for authority.
- i. Restrictions. An indication is to be given of any restrictions under which the project is to be executed, whether political/strategic, technical, timescale or financial.
- j. Value System. By using value analysis methodology, the user must analyse stated user performance requirements against one another (especially the more important ones) to determine and stipulate relative importance so as to conduct trade-off studies during the PS prior to submission of options to the

u: or selection of the optimum one. In essence, these results provide the military performance part of the comprehensive value system to be used for the adjudication of the proposals received in response to the RFI (in cases where a formal RFI is essential) and as may be adjusted for the adjudication of the Request for Proposal (RFP). The comprehensive value system mentioned, includes not only the military performance value element, but also value aspects pertaining to, for example, industrial participation, cost and finance, company profile, political considerations, etc

k. Memoranda of Understanding. See Annexure 11 to Appendix N.

l. Executive Submission. An executive submission as per the CSW (Appendix E to Chapter 3) is to be attached as Appendix A to the SR. Contents of the submission are to include system boundaries of the proposed system, an exposition of results obtained, selections made (if applicable), motivations for restrictions imposed on the freedom of execution of subsequent activities (eg Selections imposed due to standardisation), financial and timescale implications as well as decisions required.

13. Procedure. The approval - and change procedures for the SR are basically the same as for those of the ST as described in par 27. Changes that fall outside of the FA, that amend the quantities considerably or that have a substantial cost implication, that significantly change the date for commissioning or that affect the operational capability of the system significantly, are classified as class 1 changes and are to be similarly submitted for approval as an amendment to the SR.

14. After approval of the SR and the granting of authority to proceed with the next phase, a formal agreement is negotiated with Armscor based on the normal principles of contracting (see Armscor Policy A-Pol-1000) that coincide with the PM Reqs contained in the PM Req-1 and allocated to Armscor. Similar agreements are negotiated with other parties involved that, eg have to deliver logistic elements such as PWD or even the HR support division that have

NOTE: Interaction Between Concerned Parties. Just as there is continual interaction for the rest of the project between the SANDF and Armscor, the same principle is to be maintained with other parties such as the DPW.

to eventually provide the day-to-day operating personnel.

15. User Requirement Format. The tendency to compile a SR around a specific item for which information is freely available, is to be avoided as it may restrict the options prohibitively during the PS. Better solutions may be available or become available and are then disqualified for consideration for the wrong reasons.

CHAPTER 2B: DEFINITION PHASE

DEFINITION PHASE - GENERAL

1. Aim. The aim of the definition phase is to establish the ABL on system level 7 for a combat grouping and/or system level 6 for a user system to task the industry, and other parties with a well defined specification/definition of needs, primarily at the level of the "carrier" of the operational requirement.

NOTE : Baseline/System Level Time Inter-dependence. The allocated baseline for the user system is reached only when the allocated baseline for certain lower levels in the system hierarchy have already been achieved. The products system level and product level specifically are pertinent here, but lower levels may also be applicable.

2. The Functional Baseline (FBL-1A). The SANDF definition phase formally commences, but piecemeal for each system level, when the FBL is reached for that system level as described above.

3. The ABL-2. The SANDF definition phase formally ends when the ABL on level 7 and/or 6 is reached. The ABL-2 represents "milestone 2", the so-called "development decision" of the SANDF and is taken in conjunction with other concerned SANDF parties and in particular with Armscor. The ABL-2 on the combat grouping level and/or user level consists of a number of documents grouped into a single document called the Development Plan. This document comprises the under mentioned contents :

- a. The PM Req-2.
- b. The technical requirements expressed as a system "A" specification together with a number of development "B" specifications for selected CIs.
- c. The Integrated Logistic Support Plan 2 (ILSP-2) (see Log 9 and 10, pamphlet 1, part 8).

DEFINITION PHASE - FUNCTIONS

4. Scope. The Definition Phase thus includes all activities between the FBL-1A for the combat grouping, the FBL-1B for the user system and the ABL-2. These activities are grouped in functions 5 to 9 as set out below.

FUNCTION 5

5. Function 5: Project Study (PS). The aim of the PS is to determine the most appropriate products system(s)/solution(s) for the satisfaction of the SR by weighing up/comparing various options against one another and documenting them in an "A" Specification(s). Given that the PS is carried out on level 5, it represents the Armscor concept phase on level 5 on the one hand, and on the other, forms part of the SANDF definition phase, particularly with regard to the writing of the "A" specification.

6. Scope. During the PS, the following aspects are investigated in detail:

- a. All possible products system solutions that may be found, both in the form of completed designs or manufactured systems as well as in the form of concept designs, with preference for RSA products. These options should include "do nothing", the upgrading of existing systems, the development of new systems, or the purchasing of MOTS systems. At this stage there is no talk of physical models, technology demonstrators, etc. These solutions make use of, inter alia, specific available hardware choices on the various hierarchical levels of the system, by integrating them in system context subject to the following conditions :
 - i. That the user requirements contained in the SR are conformed to. If deviations are vital, these are to fall within the set norms of the value system
 - ii. That the restrictions with regard to administrative, logistical, financial, timescale, manpower, quantities, technological or any other aspect as contained in the SR are complied with.
 - iii. That the technology has been established to such an extent that the development timescales are reasonably accurate and predictable and that the risk levels are acceptably low enough to bridge any outstanding technological gap within reasonable time.
- b. All possible products system vendors that should be considered for supply of the products systems. It is recommended that the services of proven system suppliers and system houses are used.
- c. The full implications of all the solutions in terms of operational capabilities, quantities, LCCs, timescales, manpower requirements, logistic and other relevant considerations within the requirements and limitations laid down in the SR.
- d. The optimum choice of products systems, system suppliers and system houses.

NOTE: Products System Options. When products system options are being investigated, it may become necessary to carry out concept designs (through Armscor or through the contracted industry depending on the situation) on product level or product subsystem level to justify options. Some of the products system options may thus vary with regard to product or product subsystems only.

NOTE: Handling Variants. Given that a user system may consist of one or more similar products systems with similar operational employment profiles (e.g. where aircraft - or vehicle variants are involved), each variant option is to be considered as described above. In principle, clearly identifiable staff target, staff requirement and other acquisition documentation information is to be incorporated into the document, almost as separate projects within a project.

NOTE: Captured Weapons. Manufactured systems referred to above also include captured weapons. In this respect, usable concepts are to be investigated for imitation in direct or applied form or counter-measures are to be built into the design, where applicable.

7. **Procedure.** The PS is carried out by Armscor in co-operation with the DOD and other parties where necessary. During the PS, the aspects mentioned in par 40 are investigated whilst care is to be taken to ensure that the norms applied during the evaluation are as scientific and objective as possible. In certain cases, the variables may be so vast and spread across so many system levels that option evaluation becomes extremely difficult. In such a case, one or more of the following methods may be used to facilitate option evaluation:

- a. Complete theoretical design (on paper) or mathematical simulation models may be used for the more practical combinations (physical development models and technology demonstrators excluded).
- b. Simplified models/moquettes may be used to practically evaluate the effects of certain variables.

8. **Option Identification.** In order to explore the options of off-the-shelf procurement of existing, or development and acquisition of new essentially level 5/4 systems for evaluation by means of operational effectiveness vs cost studies, it is necessary for Armscor to obtain relevant information from industry by means of an RFI.

9. **Option Selection.** The identified options to be presented in the PSR that follows, are to include options that cover the further extension of the life of existing systems bmo enhanced maintenance (ie No modification to the system), essentially level 3 upgrading of the existing system, off-the-shelf procurement of existing level 5/4 systems, and development and acquisition of new level 5/4 systems. In order to facilitate this option selection process, a play-off between enhanced operational effectiveness vs cost needs to be performed. This is known as COEIA (also known as AoA) studies, but other similar methodologies may also be used.

10. **"A" Specification.** In all cases, an "A" specification is compiled and attached or quoted. Once again, care is to be taken that the correct configuration status is used. Given that the configuration management of the "A" specification is handled by Armscor, it is suggested that class 1 and 2 changes, as set out in the various procedures above, are used, and that these requirements are spelt out in the PM Req sections or in the MOA.

FUNCTION 6

11. **Function 6: The PSR.** The PSR is compiled by the user (see Appendix N for guidelines and an example of a PSR) and represents the SANDF milestone "1C" that is, the "Make/buy Decision" at Products system level (Armscor milestone 1). The PSR is basically a summary of the results of the PS as deduced from the aspects examined and contains the following:

- a. **Introduction.** Confirmation of the validity of the operational requirement as contained in the latest approved ST that the project requirements conform to those specified in the latest SR with reference to the configuration status of the latter document. Special confirmation that the approved financial ceiling of the preceding phase has not been exceeded. A short description of the extent of the system, options investigated, system suppliers and/or system houses investigated as well as possible options not analysed (with reasons) and

NOTE: Tables. Results presented in tabular form with values allocated to each entry can be very helpful.

NOTE: Technology Gap. If the DOD has no alternative but to pursue an option where the technology gap is large and very risky (ie, extremely uncertain timescales), serious consideration should be given to the temporary freezing of the project and the initiation of a technology development activity until the technology gap is manageable before the acquisition project is re-activated. It needs to be noted that no finished operationally usable products will be produced during the technology activity, but that the technology only will be matured to such an extent that it poses an acceptable risk to the acquisition project.

possible suppliers not investigated (with reasons).

- b. **Option Selection.** A detail exposition of all the options considered with a clear explanation of advantages and disadvantages of all important matters such as quantities of the products system, performance, timescales, finances (acquisition and LCCs), local or overseas manufacture, technological risks, political considerations, etc From this appreciation, the preferred option is motivated, based on the outcome of the COEIA study.
- c. **Make/Buy or Upgrade Decision Recommendation.** During the PS, options to make, buy or upgrade, are investigated, and proposed shortlists of potential vendors for each of these options should be compiled. The proposed option, ie to either buy an existing system, to make (ie develop) a new system, or to upgrade the existing system, is presented together with the proposed shortlist of potential vendors for the specific recommendation. The preferred supplier of the authorised option will only be identified in the following phase, based on a process of RFP solicitation, adjudication of the results and authorisation thereof in accordance with the prescriptions of this policy.
- d. **Specification.** The "A" specification of the selected products system(s).
- e. **Logistics Elements.** The "A" specification for each and every support element outside the scope of the Armscor PS, such as human related buildings and facility requirements that are due for erection by PWD. These buildings and

facilities are defined as major works and are not budgeted or funded from capital project funds.

- f. Manpower. The operating manpower requirement with regard to quantities and qualifications with an estimate of the personnel that will have to be added to the end user requirement bmo recruiting.
- g. Tactics. The tactics to be followed are included where necessary.
- h. Security Plan. An updated security plan i.a.w. Section 1, Chapter 6 and Appendix N, Annexure 15.
- i. Memorandum of Understanding. See Annexure 11 to Appendix N.
- j. Management Submission.

12. Procedure. After Armscor has completed the PS in accordance with the MOA and to the satisfaction of the stated user requirement, and the results have been documented and presented to the user, the user adds the requirements stated in par 45 to form the PSR. The approval - and change procedure for the PSR is basically the same as for the ST described in par 27. Changes that fall outside of the financial authorisations, that change the choice of products system, that change the authorised shortlist of contractors, or that change the estimated quantities considerably, are classified as class 1 changes and, as for the original document, are to be submitted for approval.

13. Possible Alternative Routes. The principle sequence of this policy makes provision for comprehensive development of systems. As seen above, the PSR could recommend either an upgrade, a development or a direct purchase of an existing system. The essential difference between an upgrade and a comprehensive development lies in the number of simultaneous system levels being developed. An upgrade primarily comprises integration development at the highest level of the system (level 5/4), whereas comprehensive development comprises both integration development at the highest level, combined with CI development at lower levels (level 4/3). In the above two cases, Function 7a (System Study [SS]) is to be performed as the next step, followed by Function 8 (DP). On the other hand, the direct purchase of a system ("Buy decision") implies that no development of significance is required, thus obviating the need for a development phase to be executed. In this case, Function 7b (Acquisition Study (AS) "Competitive Tender") is performed as the next step, followed by Function 10. This latter option where comprehensive development is not required, is the preferred route due to the lower performance, timescale and cost risk involved, as well as the fact that production cost is visible at an early stage.

FUNCTION 7a

14. Where the PSR recommended a "make" or "upgrade" decision, Function 7a followed by Function 8 needs to be performed.

15. Function 7a: The System Study (SS). The purpose of the SS, in the case where an "upgrade" or "make" decision was authorised in accordance with the PSR recommendation, is to analyse the selected concept products system as reflected in the "A" specification and, where necessary, to further define CIs by way of design activities in development specifications ("B" specification) and then to produce these specifications. In the case of the "upgrade" option, only one "B" specification at the highest system level is required, ie the complete system becomes the singular CI.

NOTE : Special circumstances may exist where it is allowable to proceed (in parallel with the SS) to a Partial Acquisition Plan with regard to existing product subsystems or even special components and materials. When the project is forced to use these product subsystems, components or materials, they become given restrictions on the solution pursued during the development phase. Note that an Acquisition Plan may in principle only be submitted for authorisation when the equipment development test and evaluation has been completed. The special conditions are as follows:

- a. The items are long-lead items and as such have to be acquired at an early stage to ensure that project timescales are maintained.
- b. No risk exists that forced changes will have to take place during the development phase that will make these items obsolete.
- c. A unique opportunity has arisen to procure sought after items and where the opportunity would disappear permanently as a result of a delay.

16. The following activities are carried out during the SS :

- a. Based on the mission and functional parameters contained in the "A" specification, a "B" development specification is developed for the highest system level or carrier of the operational capability.
- b. A set of development "B" specifications, one for each identified CI, are compiled.
- c. A development study (DS) is undertaken for executing the development phase.
- d. A LS is carried out and plans drawn up for the realisation of logistic plans, namely, the ILSP-2 and SP-2, during the development phase.

NOTE : Non-configuration Items. During the concept design, some existing products for which specifications are available at the manufacturers, are identified as part of the solution. For these products, it is desirable to obtain their product specifications and compile additional specifications for their integration. It needs to be noted that, should changes to the manufacturers' product specifications be required due to the integration thereof, it needs to be cleared with the manufacturer before the design is frozen.

17. Procedure. The SS is carried out by the system supplier and/or system house and Industry on Armscor's instructions, but with certain continuous inputs from the DOD, especially with regard to ILS. Responsibilities of the various parties in respect of the execution of SS are as follows :

- a. The Prime Contractor. The Prime Contractor as contracted by Armscor, is responsible for :
 - i. Confirmation that the selected options contained in the "A" specifications represent the optimum solution within given limitations.

- ii. Determining how the CIs will be dealt with during development, what the interfaces and integration needs will be.
 - iii. Performing a risk analysis in terms of CIs that must be developed.
 - iv. Executing a Model Study (MS) based on the "A" and "B" specifications, capability of the participating industry aimed at determining which development models will be required for optimum design development. The results of this study which include envisaged models, number and aim of each, timescales, costs and test and evaluation methods and requirements are presented to Armscor for authorisation in conjunction with the DOD
 - v. Preparation of the "B" specification for the "carrier" and the CIs to be developed as a result of concept design activities carried out by the industry.
 - vi. Executing the concept design and the acquiring or development of specifications.
 - vii. Setting up an SP-2 based on continued inputs from the SANDF (during LS-2) and as derived from preliminary LSA carried out by Industry parallel to the concept design. When a system contractor has been appointed, he is responsible for the integration of the logistic support plans of subcontractors.
- b. Armscor. During the SS, Armscor is responsible for the following :
- i. Executing the DS with the object of determining the manner in which and by which body the products will be developed, tested and integrated to propose an acceptable products system in accordance with the SANDF's requirement. This is based on the solicitation of firm proposals from the authorised shortlist of possible contenders by means of the prescribed RFP process. A detailed financial plan is drawn up, indicating extent and phasing of funds required, milestones, timescales, counter trade requirements and updated LCCs.
 - ii. Furnishing the DOD with an updated MRI with the correct configuration status of each of the relevant documents.
 - iii. Reporting on the risk analysis in terms of CIs that must be developed.
 - iv. Setting up a quality assurance plan, as well as establishing a configuration management approach and plan envisaged for the development phase.
- c. The DOD. The DOD is responsible for the following :
- i. Launching a LS-2 through interaction with Armscor and Industry, which draws up the LSP-2 in accordance with the requirements of the SANDF. The study generates inputs to the ILSP-2, which in turn directs activities during the development phase.

- ii. Determining the logistic elements not provided by Armscor, such as human related buildings and facilities and manning of the user system. With this goes an "A" specification for the said elements and the necessary actions for the timely acquisition of these elements are initiated with the Department of Public Works and the HR department of the DOD.
- iii. Where applicable, customer furnished equipment is identified and brought into readiness for use during the development phase or for integration during the production phase.

FUNCTION 7b

18. Where the PSR recommended a "Buy" decision, Function 7b needs to be performed, followed by Function 10.

19. Function 7b: The Acquisition Study Competitive Tender (ASCT). The purpose of the AS in the case where a "buy decision" was authorised in accordance with the PSR recommendation, is to identify the best suited vendor together with his fully defined product baseline (PBL) solution (ie full set of "C", "D" and "E" specifications) including ILSP-3 definition as described in Log 9 and 10, pamphlet 1, part 8.

20. The ASCT is launched to determine in which way acquisition of the products system is going to take place.

NOTE : It should be noted that, although the prime contractor recommended in the Acquisition Plan (AP) may be required to perform a certain amount of integration development on his proposed products system configuration, these development activities are not separately contracted as deliverables, as the intention is here to directly contract production at the highest level.

21. A LS is carried out to compile logistic plans, namely the ILSP-3 and SP-3, in which logistic requirements for the production phase are to be realized.

22. Armscor. During the ASCT, Armscor is responsible for :

- a. Executing the ASCT with the object of determining the manner in which and under the control of which Prime Contractor the products will be manufactured, tested, accepted and integrated to supply an acceptable products system in accordance with the SANDF's requirement. This is based on the solicitation of firm proposals from the authorised shortlist of possible contenders by means of the prescribed RFP process. A detailed financial plan is drawn up, indicating extent and phasing of funds required, milestones, timescales, counter trade requirements and updated LCCs.
- b. Providing the DOD with an updated MRI indicating configuration status of each of the applicable documents.

- c. Supplying the logistic proposals contained in the ILSP-3.
- d. Supplying the TT&E proposals on products system level.

23. The SANDF. The SANDF, under the guidance of the DAPD, is responsible for the following:

- a. Launching a LS, the so-called LS-3, by which the requirement from and interaction with contracted Industry is determined to enable Industry to draw up the SP-3 (or integrated support plan (ISP-3) on products system level) in accordance with the requirements of the SANDF. A further object of the study is to generate the SANDF's ILSP-3 inputs, which in turn will direct the activities in the manufacturing phase.
- b. Organizing the tracking of logistic elements not provided by Armscor in order to ensure that the acquisition thereof does not become out of step with the products systems acquired by Armscor.
- c. Preparing the final operational test and evaluation (FOT&E) documentation for those tests that will be conducted under complete management of the user. The tests that place emphasis on human factors rather than on equipment, can also be seen as part of the force preparation activity of the specific user system and must not be confused with the manufacturers TT&E, the object of which is primarily equipment orientated rather than human orientated, ie to prove a system acceptable for delivery.

24. The results of the ASCT are documented as an AP as prescribed herein (See Function 10).

FUNCTION 8

25. Following Function 7a, Function 8 should henceforth be performed in the case where a "make" or "upgrade" decision was authorised.

26. Function 8: The Development plan (DP). The DP is drawn up by the user (see Appendix N for guidelines and an example of a DP) and represents DOD milestone 2 at level 6, ie the "development decision" (also Armscor milestone 2 at level 5). The purpose of the development decision is to confirm the CIs identified for development of "B" specifications, the identified contractor responsible for the development, as well as the choice of existing system elements, and thus to grant approval that the development phase be executed. The DP is a summary of the results of the SS (on user level) and DS (at Armscor level) and contains:

- a. Introduction. Confirmation that results of the PS are still valid with reference to the configuration status of the valid PSR. Special confirmation that approved financial limits of the preceding phase have not been exceeded. A short description of all the CIs that are to be developed, with reasons, including an assessment of the technological, financial and timescale risks involved. In the case where a single source supplier for the development of any CI is recommended, this recommendation has to be properly motivated. A description of the main products already in existence and that has been selected as part of the system solution is also to be included.
- b. PM Req-2. All project management information as set out in Function 3 sub-

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par's 9.d. and 10.d. summarized as document PM Req-2. Included herein is any special involvement in TT&E (basic factory testing), as well as the requirement for involvement in Preliminary Operational Test and Evaluation (POT&E) (so-called field trials conducted by both the contractor and user).

- c. Technical Requirements. The technical requirements are reflected in the "B" specifications of the CIs that are to be attached to this plan, or referred to with the correct configuration. For control purposes, an updated MRI is included in all cases where the title and status of all relevant documentation is included. The user is to confirm that the industry selected by Armscor to accept responsibility for the development of the various CIs, is supported as the optimum choice.

NOTE : Customer Furnished Equipment (CFE). Where CFE is applicable, a list of the items is to be provided with valid configuration status, especially those to be used by system developers during the development phase for integration purposes. Certification is also required that the CFE is operational and up to date in all respects.

- d. Logistic Requirements (ILSP-2 and SP-2). Logistic results of the completed phase are included and referred to as SP-2. The SANDF's technical and management requirements for the logistics of the next phase are included and referred to as ILSP-2 in terms of the requirements contained in the document referred to in Log 9 and 10, pamphlet 1, part 8. For ILS elements that are not allocated to Armscor such as human related buildings and facilities, confirmation is to be given that the timescales for the acquisition thereof have been integrated with the project.
- e. Financial Requirements. Updating of the financial requirements set out in subpar 31.e and as applicable to the development phase are to be reflected. Financial planning data for the next phase is also to be included.
- f. Timescales. Indications for the following are to be given :
 - i. Timescales and milestones for the development phase. These milestones are coupled to risk reduction, technical performance measurement, preliminary design review, development test and evaluation (TT&E) and where possible, POT&E for the envisaged individual development models.
 - ii. Updated planning timescales for industrialisation and development.
 - iii. Updated planned date of commissioning which serves as a revision/update of the dates proposed in the PS, ie, the date on which the first system/s can be organisationally employed and the date when the requirement is expected to be satisfied.
- g. Security Plan. An updated security plan in terms of Section 1, Chapter 6 and Appendix N, Annexure 15.

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