APPENDIX 1

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APPENDIX A: THE PRINCIPLES OF WAR

A.1 THE PRINCIPLES OF WAR USED BY THE SANDF

The principles of war used by the SANDF, are presented here (Schultz 1994: 1).

THE PRINCIPLES OF WAR

INTRODUCTION

1. A principle of war is a fundamental truth governing the execution of war. The principles of war are not exact principles, but rather constitute a collection of ideas. Principles of war must be understood in their entirety and should not be applied as dogma, but as a checklist for a successful operation. The principles of war apply not only to a war situation but can apply to every form of military activity whether in war or peace.

The Importance of the Principles of War

2. Success in all military operations can be influenced by several factors, eg, the time factor, the influence of danger, availability of information, fatigue, and many more. The fact of the matter is that in modern warfare there is little if any opportunity for righting basic errors in strategic or tactical planning. Therefore it is essential that every commander must have a sound knowledge of the principles of war. In fact knowledge of the principles of war should be second nature to every soldier.
3. It must however be stated that the relative importance of the principles of war may vary from one situation to another. Disregard of the principles will also not automatically result in defeat. Nor will their strict observance guarantee success. The principles of war therefore simply indicate methods of action that have proved successful in the past, and they serve as a warning that their disregard involve risk and has often brought failure.

Efficiency of the Principles of War

4. As previously mentioned it is true that none of the principles are absolute, like for instance the laws of physics or economics. Nevertheless, the principles of war can be used as a practice checklist to assist sound judgement, concepts and plans, provided they are administered sensibly. Users simply should recognise that no two situations are quite alike, and apply the principles accordingly. The principles of war are therefore dynamic principles and must be used accordingly.

The Principles of War as Accepted by the SANDF

5. The following fourteen (14) principles are accepted and used in the SANDF. Take note that the fourteenth principle (Intelligence) has been incorporated due to lessons learnt from studies on recent global conflicts and is therefore included.
    a. Selection and maintenance of the aim.
    b. Maintenance of morale.
    c. Security.
    d. Surprise.
    e. Offensive action / Initiative.
    f. Flexibility.
    g. Concentration of force.
    h. Economy of force.
    i. Co-operation.
    j. Maintenance of reserves.
    k. Manoeuvre.
    l. Unity of command.
    m. Logistic / Administrative support.
    n. Intelligence.

6. The selection and maintenance of the aim is the overriding and most important principle. The order of the remaining 13 principles can vary depending on the situation in hand.
    a. Selection and Maintenance of the Aim. There is a distinct difference between the selection and the maintenance of the aim.
        i. The Selection of the Aim. The importance of defining the aim before the attempting to accomplish it by whatever means cannot be over-stressed. In war the definition of the aim of the military operation prior to the start of the battle is vital.
        ii. Directives on the highest levels will usually define the military aim in broad terms. It must be remembered that all military action is governed by political motives, and that war is the means of achieving the political aim when peaceful methods have failed. Thus, the political aim is always supreme, even in war. All military operations must evolve out of National Strategy. The broad military aim will give the senior commanders due latitude in interpreting these terms. The aim will then be defined with increasing precision at each lower level.
    b. The Maintenance of the Aim. Failure to maintain the aim will decrease the chances of success and may well lead to defeat. In peacetime, the political aim may have to be adapted from time to time to meet changing circumstances. The military aims of the and control is a force multiplier.
        i. Logistic / Administrative Support. Logistic Services should be adapted accordingly, and this may well call for changes in the size and structure of the armed forces. Every plan of action, on whatever military level, must be tested by the extent to which it contributes to the attainment of the military aim at the next highest level of command, and ultimately to the overall military aim.
    c. Maintenance of Morale. Morale is a mental state, which is an invaluable asset to success in all forms of war. Morale is very sensitive to material conditions. High morale can be achieved by making sure that personnel are equipped for the task. Keep the people informed and set high standards of discipline. Make sure that accommodation and messing facilities are at a high standard. The most important of all is that a battle cannot be won without fighting men. High morale therefore implies good logistic support and effective medical treatment.
    d. In present day and future circumstances the morale of the civilian population is and will be just as important a factor as the morale of the armed forces. National morale is the foundation upon which a nation's will to resist aggression is built, and should therefore be maintained at a high level by all possible means.
    e. Security. Security preserves power and reduces the probability that enemy activity, direct or indirect, might interfere unduly with vital friendly interest, assets, plans or operations. This by no means implies undue caution or the avoidance of risks. A good offensive often is an outstanding defence. Thus, a prerequisite for offensive action is a sufficiently secure base from which the forces can operate effectively. Part of the art of war is to strike the right balance between security and offensive action, and to allot the proper proportion of resources to each.
    f. Surprise. Surprise, aided and abetted by various combinations of secrecy, speed, deception, originality and audacity, can shift the balance of power decisively, paving the way for victories far out of proportion to the efforts expended. Surprise however, does not vouch-save success, but it vastly

increases the odds in its favour. Surprise can assume many shapes, namely military surprise, political surprise, psychological surprise and technological surprise. ***Surprise can invariably only be achieved with good intelligence, hence the fourteenth principle of intelligence.***

g. Offensive action / Initiative. This principle states that offensive action is necessary to achieve decisive results and maintain freedom of actions. This principle must be applied even within the defensive. Offensive action therefore is as much an attitude of mind as it is a practical policy. It requires qualities of determination, boldness, courage and the will to win. The choice of the right place, time and objective is of major importance in the use of offensive action to achieve the aim.
h. Flexibility. This principle recognises the inevitability of change in purposes, policies, plans and procedure. Flexibility therefore entails good training, organisation, discipline, communications and staff work. It also needs good Standing Operation Procedures (SOP's) which can incrementally be adjusted when the need arises. There is no place for democratic inertia when flexibility must be addressed.
i. Concentration of Force. Concentration of superior force at the decisive time and place is usually essential to success in war. This principle requires the achievement of superiority of combat power. To achieve this more than superior numbers are required. The concentration must be so rapid that the enemy has insufficient time to counter it before a decisive strike is delivered. Proper application of this principle in conjunction with the other principles of war may permit numerically inferior forces to achieve decisive combat superiority.
j. Economy of Force. This principle is closely associated with that of force, and it is an acceptable dictum to say that no more force than is necessary should be devoted to any task.
k. Co-operation. Co-operation entails the co-ordination of all units so as to achieve the maximum combined effort from the whole. In modern warfare military commitments involves joint action. Co-operation between the different service arms is therefore essential. To achieve the best results in warfare, a joint plan is vital.
l. Maintenance of Reserves. It is essential that every battle plan must allow for reserves. Before the battle / operation the reserves must be established, and as soon as a reserve is committed, a new reserve must be established. The worst possible action during wartime (under normal circumstances) is the commitment of the entire force to the battle. Reserves must be established and maintained. When reserves must be committed, it must be to solve a crisis situation or to apply more force, which will eventually ensure victory.
m. Manoeuvre. Manoeuvre can be regarded as a fundamental truth governing the prosecution of war. The object of the principle is to dispose of a force in such a manner as to place the enemy at a disadvantage and thus achieve results that would otherwise have been more costly. Manoeuvre is not limited to combat forces; there is also the manoeuvre of political forces, logistics and many more. Manoeuvre is the antithesis of mental stagnation or static physical positions. It further implies a faculty for rapidly shifting strategic emphasis from one mode to another.
n. Unity of Command. The principle of unity embraces solidarity of purpose, effort and command. Since human nature is often opportunistic and individualistic, proper orchestration can better be assured if responsibilities and

authority are vested in command. This principle implies that the decisive application of full combat power requires unity of effort under one responsible commander. It is essential that one commander be in control of all affected units. Good command and administrative support is essential to the organisation, planning, training and operation of any military force. These arrangements which provide the backing for operations must be designed to give the commander maximum freedom of action. He must on the other hand be fully briefed and understand the limitations. There is no advantage in operational progress outstripping administrative and logistical support.

o. Intelligence. Good intelligence will be the foundation of any military operation. Intelligence encompasses not only the political and military situation, but also encompasses the health assessment in the area of operations as well as the logistic assessment. Intelligence is entrenched in the principles of Security, Surprise and Logistic / Administrative support.

A.2 THE PRINCIPLES OF WAR USED BY THE US ARMY

According to Payne (1998: 153), the United States Army recognises the following nine of these principles of war:

- The objective. Every military operation must be directed towards a clearly defined, decisive, and attainable objective.
- The offensive/initiative. This is the commander's only means of attaining a decisive, successful goal. Even when the political goal is defensive, the best defence is frequently a vigorous offensive. This forces the enemy to react to one's initiatives rather than the other way around. This provides one's own forces with the ability to dictate the terms of the conflict.
- Mass. In every conflict, a moment arises where the superiority in a particular characteristic will provide victory. The commander must discern what that characteristic is, and whether his own forces possesses or is able to acquire it. The commander must then concentrate that combat power at the decisive place and time.
- Economy of force. To apply mass as described previously, the force capability in other less significant sectors may have to be reduced. Thus apply forces economically so to obtain the maximum return.
- Manoeuvre (mobility). The commander should place his forces at the decisive place at the right time to gain the initiative.
- Unity of command. For every objective, ensure unity of effort under one commander responsible for the operation. The objective of this principle is co-ordination of forces.
- Security. Never permit the enemy to acquire an unexpected advantage. The commander should never become so intent on what he plans to do to his enemy, that he forgets what the enemy might plan to do to him.
- Surprise. Strike the enemy at a time, at a place, or in a manner for which he is unprepared.
- Simplicity. The friction in war often makes the simplest manoeuvres difficult and the more complex ones impossible. A simpler plan executed promptly is therefore preferable to a more complex plan executed later.

APPENDIX B: THE PROJECT MANAGEMENT INFORMATION FLOW

B.1 THE PROJECT MANAGEMENT PROCESSES AND THEIR ASSOCIATED INPUT AND OUTPUT.

The figure below presents the Project Management information flow derived from the PMI's PMBOK. This is an example of an approach to the process, suitable for a large, complex programme. Not all projects will however require such a rigorous effort to achieve success.

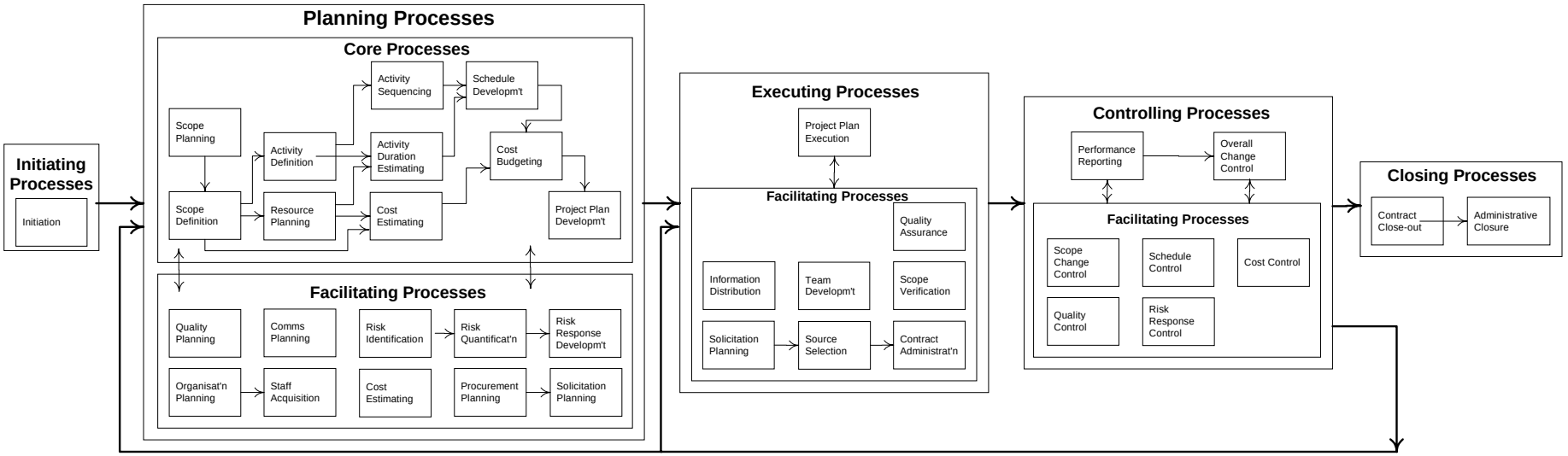

Figure 88: Overall Project Management Flow of Information

B.2 THE PROJECT MANAGEMENT PROCESSES AND THEIR SUB-PROCESSES.

The types of processes and the sub-processes with which they are associated, are presented in the table below.

Processes	Chap	Sub-processes
Project Integration Management	4.1	Project Plan Development
	4.2	Project Plan Execution
	4.3	Overall Change Control
Project Scope Management	5.1	Initiation
	5.2	Scope Planning
	5.3	Scope Definition
	5.4	Scope Verification
	5.5	Scope Change Control
Project Time Management	6.1	Activity Definition
	6.2	Activity Sequencing
	6.3	Activity Duration Estimation
	6.4	Schedule development
	6.5	Schedule Control
Project Cost Management	7.1	Resource Planning
	7.2	Cost Estimating
	7.3	Cost Budgeting
	7.4	Cost Control
Project Quality Management	8.1	Quality Planning
	8.2	Quality Assurance
	8.3	Quality Control
Project Human Resources Management	9.1	Organisational Planning
	9.2	Staff Acquisition
	9.3	Team Development
Project Communications Management	10.1	Communications Planning
	10.2	Information Distribution
	10.3	Performance reporting
	10.4	Administrative Closure
Project Risk Management	11.1	Risk Identification
	11.2	Risk Quantification
	11.3	Risk Response Development
	11.4	Risk Response Control
Project Procurement Management	12.1	Procurement Planning
	12.2	Solicitation Planning
	12.3	Solicitation
	12.4	Source Selection
	12.5	Contract Administration
	12.6	Contract Close-out

Table 40: The PMI PMBOK's Processes and Sub-Processes

B.3 THE PROJECT MANAGEMENT PROCESSES AND THEIR INPUT AND OUTPUT.

The types of input, output and the processes with which they are associated, are presented in the tables below.

Chap	Input	Output
4.1	Other planning output	Project plan
4.1	Historical information	Supporting detail
4.1	Organisational policies	
4.1	Constraints	
4.1	Assumptions	
4.2	Project plan	Work results
4.2	Supporting detail	Change requests
4.2	Organisational policies	
4.2	Corrective action	
4.3	Project plan	Project plan updates
4.3	Performance reports	Corrective action
4.3	Change requests	Lessons learnt

Table 41: The Input and Output of the Project Integration Management Processes (PMBOK 1996: Chapter 4).

Chap	Input	Output
5.1	Product description	Project charter
5.1	Strategic plan	Project manager identified
5.1	Project selection criteria	Constraints
5.1	Historical information	Assumptions
5.2	Product description	Scope statement
5.2	Project charter	Supporting detail
5.2	Constraints	Scope management plan
5.2	Assumptions	
5.3	Scope statement	Work Breakdown Structure (WBS)
5.3	Constraints	
5.3	Assumptions	
5.3	Other planning output	
5.3	Historical information	
5.4	Work results	Formal acceptance
5.4	Product documentation	
5.5	Work Breakdown Structure	Scope changes
5.5	Performance reports	Corrective action
5.5	Change requests	Lessons learnt
5.5	Scope management plan	

Table 42: The Input and Output of the Project Scope Management Processes (PMBOK 1996: Chapter 5).

Chap	Input	Output
6.1	Work Breakdown Structure	Activity list
6.1	Scope statement	Supporting detail
6.1	Historical information	
6.1	Constraints	
6.1	Assumptions	
6.2	Activity list	Project network diagram
6.2	Product description*	Activity list updates
6.2	Mandatory dependencies	
6.2	Discretionary dependencies	
6.2	External dependencies	
6.2	Constraints	
6.2	Assumptions	
6.3	Activity list	Activity duration estimates
6.3	Constraints	Basis of estimates
6.3	Assumptions	Activity list updates
6.3	Resource requirements	
6.3	Resource capabilities	
6.3	Historical information	
6.4	Project network diagram	Project schedule
6.4	Activity duration estimates	Supporting detail
6.4	Resource requirements	Schedule management plan
6.4	Resource pool description	Resource requirement updates
6.4	Calendars	
6.4	Constraints	
6.4	Assumptions	
6.4	Leads and lags	
6.5	Project schedule	Schedule updates
6.5	Performance reports	Corrective action
6.5	Change requests	Lessons learnt
6.5	Schedule management plan	

Table 43: The Input and Output of the Project Time Management Processes (PMBOK 1996: Chapter 6).

Chap	Input	Output
7.1	Work Breakdown Structure	Resource requirements
7.1	Scope statement	
7.1	Historical information	
7.1	Resource pool description	
7.1	Organisational policies	
7.2	Work Breakdown Structure	Cost estimates
7.2	Resource requirements	Supporting detail
7.2	Resource rates	Cost management plan
7.2	Activity duration estimates	
7.2	Historical information	
7.2	Chart of accounts	
7.3	Cost estimates	Cost baseline
7.3	Work Breakdown Structure	
7.3	Project schedule	
7.4	Cost baseline	Revised cost estimates
7.4	Performance reports	Budget updates
7.4	Change requests	Corrective action
7.4	Cost management plan	Estimate at completion
7.4		Lessons learnt

Table 44: The Input and Output of the Project Cost Management Processes (PMBOK 1996: Chapter 7).

Chap	Input	Output
8.1	Quality Policy	Quality management plan
8.1	Scope statement	Operational descriptions
8.1	Product description	Checklists
8.1	Standards and regulations	Input to other processes
8.1	Own process outputs	
8.2	Quality management plan	Quality improvement
8.2	Results of quality control measurements	
8.2	Operational descriptions	
8.3	Work results	Quality improvement
8.3	Quality management plan	Acceptance decisions
8.3	Operational descriptions	Rework
8.3	Checklists	Completed checklists
8.3		Process adjustments

Table 45: The Input and Output of the Project Quality Management Processes (PMBOK 1996: Chapter 8).

Chap	Input	Output
9.1	Project interfaces	Role and responsibility assignments
9.1	Staffing requirements	Staffing management plan
9.1	Constraints	Organisational chart
9.1		Supporting detail
9.2	Staffing management plan	Project staff assigned
9.2	Staffing pool description	Project team directory
9.2	Recruitment practices	
9.3	Project staff	Performance improvement
9.3	Project plan	Input to performance appraisals
9.3	Staffing management plan	
9.3	Performance reports	
9.3	External feedback	

Table 46: The Input and Output of the Project Human Resources Management Processes (PMBOK 1996: Chapter 9).

Chap	Input	Output
10.1	Communications requirements	Communications management plan
10.1	Communications technology	
10.1	Constraints	
10.1	Assumptions	
10.2	Work results	
10.2	Communications management plan	
10.2	Project plan	
10.3	Project plan	Performance reports
10.3	Work results	Change requests
10.3	Other project records	
10.4	Performance measurement documentation	Project archives
10.4	Documentation of the Product of the project	Formal acceptance
10.4	Other project records	Lessons learnt

Table 47: The Input and Output of the Project Communications Management Processes (PMBOK 1996: Chapter 10).

Chap	Input	Output
11.1	Product description	Sources of risk
11.1	Other planning outputs	Potential risk events
11.1	Historical information	Risk symptoms
11.1		Input to other processes
11.2	Shareholder risk tolerances	Opportunities to pursue, threats to respond to
11.2	Sources of risk	Opportunities to ignore, threats to accept
11.2	Potential risk events	
11.2	Cost estimates	
11.2	Activity duration estimates	
11.3	Opportunities to pursue, threats to respond to	Risk management plan
11.3	Opportunities to ignore, threats to accept	Input to other processes
11.3		Contingency plans
11.3		Reserves
11.3		Contractual agreements
11.4	Risk management plan	Corrective action
11.4	Actual risk events	Updates to Risk management plan
11.4	Additional risk identification	

Table 48: The Input and Output of the Project Risk Management Processes (PMBOK 1996: Chapter 11).

Chap	Input	Output
12.1	Scope statement	Procurement management plan
12.1	Product description	Statement(s) of Work (SOW)
12.1	Procurement resources	
12.1	Market conditions	
12.1	Other planning outputs	
12.1	Constraints	
12.1	Assumptions	
12.2	Procurement management plan	Procurement documents
12.2	Statement(s) of Work (SOW)	Evaluation criteria
12.2	Other planning outputs	Statement of Work updates
12.3	Procurement documents	Proposals
12.3	Qualified seller lists	
12.4	Proposals	Contract
12.4	Evaluation criteria	
12.4	Organisational policies	
12.5	Contract	Correspondence
12.5	Work results	Contract changes
12.5	Change requests	Payment requests
12.5	Seller invoices	
12.6	Contract documentation	Contract file

Table 49: The Input and Output of the Project Procurement Management Processes (PMBOK 1996: Chapter 12).

B.4 INPUT AND THEIR PROCESS DESTINATIONS.

The types of input and the processes with which they are associated, are presented in the table below.

Input	**To Process**
Activity duration estimates	Cost Estimating
	Risk Quantification
	Schedule development
Activity list	Activity Duration Estimation
	Activity Sequencing
Actual risk events	Risk Response Control
Additional risk identification	Risk Response Control
Assumptions	Project Plan Development
	Scope Planning
	Scope Definition
	Activity Definition
	Activity Sequencing
	Schedule development
	Communications Planning
	Procurement Planning
	Activity Duration Estimation
Calendars	Schedule development
	Cost Budgeting
	Overall Change Control
	Scope Change Control
	Schedule Control
	Contract Administration
Chart of accounts	Cost Estimating
Checklists	Quality Control
Communications management plan	Information Distribution
Communications requirements	Communications Planning

Input	To Process
Communications technology	Communications Planning
Constraints	Project Plan Development
	Scope Definition
	Activity Definition
	Activity Sequencing
	Schedule development
	Communications Planning
	Procurement Planning
	Activity Duration Estimation
	Organisational Planning
	Scope Planning
Contract	Contract Administration
Contract documentation	Contract Close-out
Corrective action	Project Plan Execution
Cost management plan	Cost Budgeting
Cost baseline	Cost Budgeting
Cost estimates	Risk Quantification
	Cost Budgeting
Discretionary dependencies	Activity Sequencing
Documentation of the Product of the project	Administrative Closure
Evaluation criteria	Source Selection
External dependencies	Activity Sequencing
External feedback	Team Development
Historical information	Scope Definition
	Activity Definition
	Activity Duration Estimation
	Resource Planning
	Cost Estimating
	Initiation
	Risk Identification
	Project Plan Development
Leads and lags	Schedule development
Mandatory dependencies	Activity Sequencing
Market conditions	Procurement Planning
Operational descriptions	Quality Assurance
	Quality Control
Opportunities to ignore, threats to accept	Risk Response Development
Opportunities to pursue, threats to respond to	Risk Response Development

Input	To Process
Organisational policies	Project Plan Development
	Project Plan Execution
	Resource Planning
	Source Selection
Other planning output	Scope Definition
	Project Plan Development
	Procurement Planning
	Risk Identification
	Solicitation Planning
Other project records	Performance reporting
	Administrative Closure
Own process outputs	Quality Planning
Performance measurement documentation	Administrative Closure
Performance reports	Team Development
	Cost Budgeting
	Overall Change Control
	Scope Change Control
	Schedule Control
Potential risk events	Risk Quantification
Procurement documents	Solicitation
Procurement management plan	Solicitation Planning
Procurement resources	Procurement Planning
Product description	Quality Planning
	Initiation
	Scope Planning
	Risk Identification
	Procurement Planning
	Activity Sequencing
Product documentation	Scope Verification
Project charter	Scope Planning
Project interfaces	Organisational Planning
Project network diagram	Schedule development
Project plan	Information Distribution
	Team Development
	Performance reporting
	Overall Change Control
	Project Plan Execution

Input	To Process
Project schedule	Cost Budgeting
	Schedule Control
Project selection criteria	Initiation
Project staff	Team Development
Proposals	Source Selection
Qualified seller lists	Solicitation
Quality management plan	Quality Control
	Quality Assurance
Quality Policy	Quality Planning
Recruitment practices	Staff Acquisition
Resource capabilities	Activity Duration Estimation
Resource pool description	Resource Planning
	Schedule development
Resource rates	Cost Estimating
Resource requirements	Activity Duration Estimation
	Schedule development
	Cost Estimating
Results of quality control measurements	Quality Assurance
Risk management plan	Risk Response Control
Schedule management plan	Schedule Control
Scope management plan	Scope Change Control
Scope statement	Resource Planning
	Quality Planning
	Procurement Planning
	Activity Definition
	Scope Definition
Seller invoices	Contract Administration
Shareholder risk tolerances	Risk Quantification
Sources of risk	Risk Quantification
Staffing management plan	Team Development
	Staff Acquisition
Staffing pool description	Staff Acquisition
Staffing requirements	Organisational Planning
Standards and regulations	Quality Planning
Statement(s) of Work (SOW)	Solicitation Planning
Strategic plan	Initiation
Supporting detail	Project Plan Execution

Input	**To Process**
Work Breakdown Structure	Cost Budgeting
	Activity Definition
	Cost Estimating
	Resource Planning
	Scope Change Control
Work results	Information Distribution
	Performance reporting
	Contract Administration
	Scope Verification
	Quality Control

B.5 THE PROJECT MANAGEMENT PROCESSES AND THEIR OUTPUT.

The types of processes and the outputs with which they are associated, are presented in the table below.

Output	**To Process (Destination)**
Acceptance decisions	Quality Control
Activity duration estimates	Activity Duration Estimation
Activity list	Activity Definition
Activity list updates	Activity Sequencing
	Activity Duration Estimation
Assumptions	Initiation
Basis of estimates	Activity Duration Estimation
Budget updates	Cost Control
Change requests	Performance reporting
	Project Plan Execution
Checklists	Quality Planning
Communications management plan	Communications Planning
Completed checklists	Quality Control
Constraints	Initiation
Contingency plans	Risk Response Development
Contract	Source Selection
Contract changes	Contract Administration
Contract file	Contract Close-out
Contractual agreements	Risk Response Development
Corrective action	Risk Response Control
	Overall Change Control
	Scope Change Control
	Schedule Control
	Cost Control
Correspondence	Contract Administration
Cost baseline	Cost Budgeting
Cost estimates	Cost Estimating
Cost management plan	Cost Estimating
Estimate at completion	Cost Control
Evaluation criteria	Solicitation Planning

Output	To Process (Destination)
Formal acceptance	Administrative Closure
	Scope Verification
Input to other processes	Risk Identification
	Risk Response Development
	Quality Planning
Input to performance appraisals	Team Development
Lessons learnt	Administrative Closure
	Overall Change Control
	Scope Change Control
	Schedule Control
	Cost Control
Operational descriptions	Quality Planning
Opportunities to ignore, threats to accept	Risk Quantification
Opportunities to pursue, threats to respond to	Risk Quantification
Organisational chart	Organisational Planning
Payment requests	Contract Administration
Performance improvement	Team Development
Performance reports	Performance reporting
Potential risk events	Risk Identification
Process adjustments	Quality Control
Procurement documents	Solicitation Planning
Procurement management plan	Procurement Planning
Project archives	Administrative Closure
Project charter	Initiation
Project manager identified	Initiation
Project network diagram	Activity Sequencing
Project plan	Project Plan Development
Project plan updates	Overall Change Control
Project records	Information Distribution
Project schedule	Schedule development
Project staff assigned	Staff Acquisition
Project team directory	Staff Acquisition
Proposals	Solicitation
Quality improvement	Quality Assurance
	Quality Control
Quality management plan	Quality Planning
Reserves	Risk Response Development
Resource requirement updates	Schedule development

Output	To Process (Destination)
Resource requirements	Resource Planning
Revised cost estimates	Cost Control
Rework	Quality Control
Risk management plan	Risk Response Development
Risk symptoms	Risk Identification
Role and responsibility assignments	Organisational Planning
Schedule management plan	Schedule development
Schedule updates	Schedule Control
Scope changes	Scope Change Control
Scope management plan	Scope Planning
Scope statement	Scope Planning
Sources of risk	Risk Identification
Staffing management plan	Organisational Planning
Statement of Work updates	Solicitation Planning
Statement(s) of Work (SOW)	Procurement Planning
Supporting detail	Project Plan Development
	Scope Planning
	Activity Definition
	Schedule development
	Cost Estimating
	Organisational Planning
Updates to Risk management plan	Risk Response Control
Work Breakdown Structure (WBS)	Scope Definition
Work results	Project Plan Execution

APPENDIX C: KEY SUCCESS FACTORS

Key Success Factors	Military Requirements	Resource Requirements	ETF Contribution
Concentration of Force	The superiority of own forces in a particular area of the conflict.	Superior capability, availability and dependability of User Systems. C4I2 SR EW capabilities Mission and weapons planning tools	Superiority in technology. Superiority in capability, availability and dependability of Products Systems. Supportability of Products Systems Availability and efficacy of C4I2 SR EW capabilities Availability and efficacy of mission and weapons planning tools
Co-operation	The ability of the parts of the military to synergistically co-ordinate their efforts.	C4I2 SR EW capabilities. Mission and weapons planning tools	Availability and efficacy of C4I2 SR EW capabilities Availability and efficacy of mission and weapons planning tools Compatibility of User Systems
Economy of Force	The economic application of forces with the greatest return.	C4I2 SR EW capabilities. Efficacy of User Systems. Mission and weapons planning tools	Availability and efficacy of C4I2 SR EW capabilities Availability and efficacy of mission and weapons planning tools Efficacy in C4I2 SR EW capabilities design. Availability and efficacy of Products Systems Supportability of Products Systems
Flexibility	The inevitability of change demands that a force be able to adapt.	User Systems. C4I2 SR EW capabilities. Mission and weapons planning tools	Ensure efficacy of C4I2 SR EW Design for ease of operation and support Availability and efficacy of mission and weapons planning tools
Intelligence	Intelligence is the foundation of planning and conducting any military operation.	C4I2 SR EW capabilities.	Availability and efficacy of C4I2 SR EW capabilities Availability and efficacy of mission and weapons planning tools
Logistic Support	It is essential that forces be supplied with the required resources at the correct time and place.	Information Systems. Transportation. Procedures.	Design and validation of Products Systems' support system Supportability of Products Systems Efficacy of Products Systems' support system Availability and efficacy of mission and weapons planning tools
Maintenance of Morale	Moral of personnel is essential to operational success.	Dependable, capable Products Systems Sufficient Products Systems	Design and validation of Products Systems' capability and dependability Supportability of Products Systems Efficacy of Products Systems' support system Availability and dependability of Products Systems Availability and efficacy of C4I2 SR EW capabilities

Maintenance of Reserves	Reserves are essential to attend to crises or to apply more force in battles.	Sufficient Products Systems Mission and weapons planning tools	Design cost-effective, affordable Products Systems Supportability of Products Systems
Manœuvre	Develop and employ the mobility of forces to apply the initiative at the optimal place and time to gain the initiative.	C4I2 SR EW capabilities. Superior mobility of platforms. Superior tactical mobility. Superior strategic mobility	Availability and efficacy of Products Systems. Flexible design qualities of Products Systems. Technological innovations. Efficacy in C4I2 SR EW capabilities. Supportability of Products Systems Availability and efficacy of mission and weapons planning tools
Security	Denial of an expected advantage to the enemy.	Cryptography Deception Detection denial resources C4I2 SR EW capabilities. ICT infrastructure penetration denial	"Stealth" technology C4I2 SR EW technologies Development and support of deception systems Development and support of ICT penetration denial systems
Key Success Factors	**Military Requirements**	**Resource Requirements**	**ETF Contribution**
Selection and Maintenance of the Aim	Define the objective clearly and adhere to it.	C4I2 SR EW capabilities Mission and weapons planning tools	Availability and efficacy of C4I2 SR EW capabilities Availability and efficacy of mission and weapons planning tools
Surprise	Strike the enemy at an unexpected time, place or manner.	New capabilities & associated doctrines in User Systems. C4I2 SR EW capabilities. ICT infrastructure penetration denial	Technological innovation. Improved or changed capabilities, availability or dependability of Products Systems Availability and efficacy of mission and weapons planning tools Supportability of Products Systems Availability and efficacy of C4I2 SR EW capabilities
The Offensive	Dictate the terms of the conflict to the enemy through taking the initiative.	C4I2 SR EW capabilities. Effective User Systems. Mission and weapons planning tools	Availability and efficacy of C4I2 SR EW capabilities Availability and efficacy of mission and weapons planning tools Availability and efficacy of Products Systems. Supportability of Products Systems
Unity of Command	The optimal co-ordination of forces to achieve the objective.	C4I2 SR EW capabilities. Mission and weapons planning tools Doctrine	Ensure efficacy of C4I2 SR EW Development and availability of mission and weapons planning tools

Table 50: A Relationship between the SANDF's Principles of War as Key Success Factors and the ETF Contribution.