

## PART FOUR

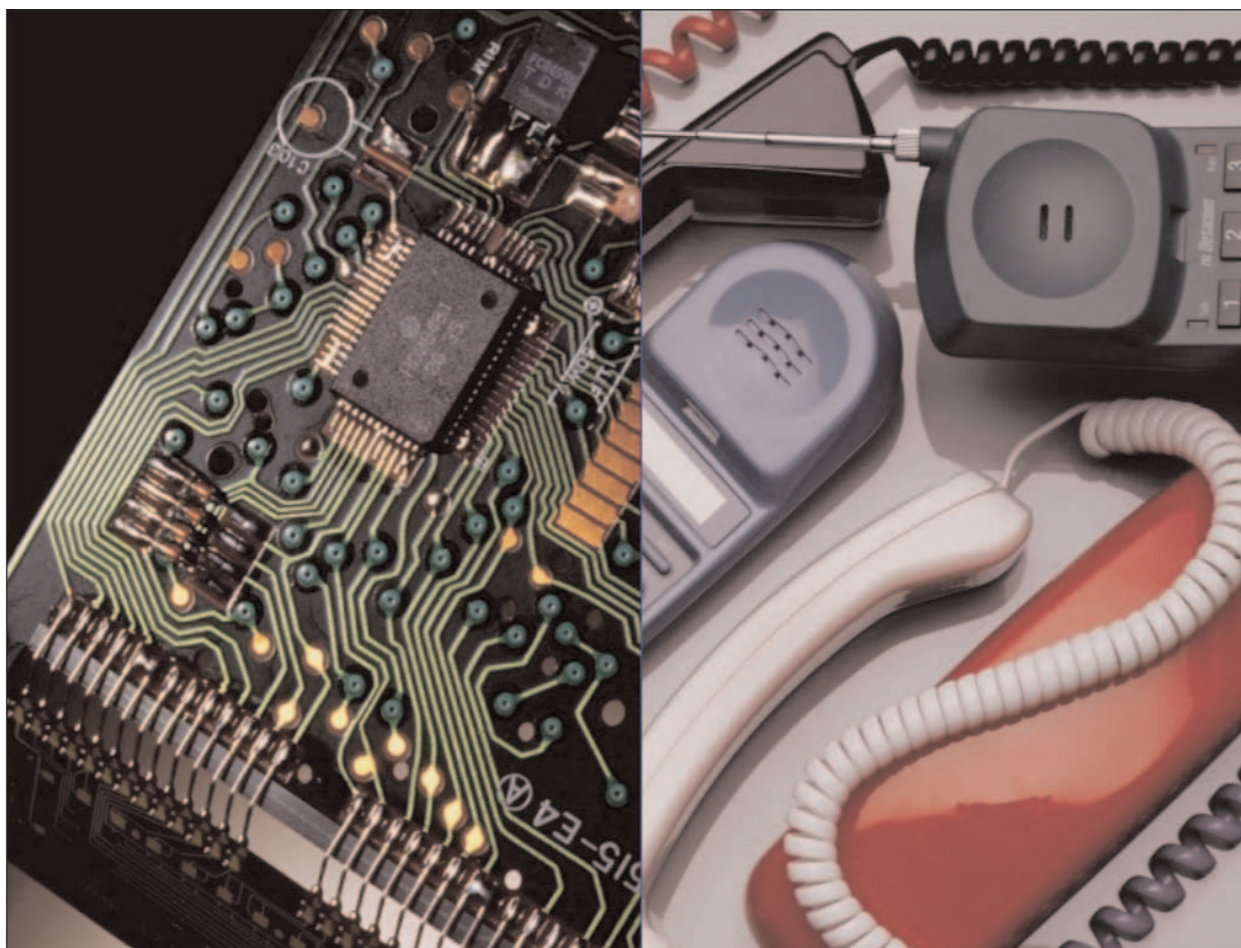
### INFORMATION COMMUNICATION TECHNOLOGY

#### EXECUTIVE SUMMARY

The ICT plan encapsulates the strategic vision for the ICT technological environment that the Department of Foreign Affairs would like to establish over the next three years. The purpose of the plan is to create a consensus vision of how information technology can best be used in supporting the Department's strategic goals.

The ICT plan will also provide guidance and information on adopted and proposed standards that will lead the Department to an open systems environment. The plan is therefore designed to assist the Department in making informed decisions when choosing appropriate system specifications to meet current and planned requirements.

At the completion of the Department's review of its strategic objectives in 2001, ICT re-assessed its strategies and business operations. This revealed that ICT had limited strategic input to contribute to the Department's strategic objectives. This was evidenced by the fact that the last Master Systems Plan (MSP) was conducted in 1992. The ideal approach to identifying the Department's technological needs would be to develop a Master Systems Plan (MSP). The Department appointed a consortium comprising Kgorong Investment Holdings, African



Legend Technologies and PriceWaterHouse Coopers and produced a MSP for the Department.

The Master Systems Plan guides the Department in positioning itself for a radically new information-based world where its ICT environment will:

- Allow Missions and Head Office to benefit from the new technologies used
- Take full advantage of information access and tools

- Streamline operations to improve service and enhance the productivity of the workforce
- Provide secure yet broad-based access to a large quantity of Internet information while reducing enclaves (or silos).
- Provide flexibility to embrace emerging technologies and respond rapidly to new and changing requirements

The Master Systems Plan (MSP) has now been completed and is with SITA for certification. The Department will develop a project program to implement the recommendations of the MSP over the next five years. The MSP project program will ensure a concerted and co-ordinated effort to deploy modern office automation platforms and local area networks at all overseas posts, as well as an improved fast, reliable and secure global communications network that is centrally managed to support its users. The MSP provides a planned path towards the development of Knowledge Management within the Department.

#### STRATEGIC PRIORITIES

To make the most of the emerging technological capabilities in order to further the achievement of the Department's foreign policy objectives, six technological priorities will be pursued. These priorities will establish a technological framework for the conduct of international affairs, known as e-Diplomacy.

The priorities, which are of equal importance, are:

- Implementation of the recommendations of the MSP.
- A secure, managed, web-enabled global network based on commercial products and technologies while using approved security devices.
- An expanded suite of systems that supports the substantive work of foreign policy applications.
- Modern integrated messaging and document

management, i.e. the development of Knowledge and Information Management (KIM).

- Streamlined administrative applications that increase productivity.
- A trained and productive workforce.

#### PRIORITY 1 : IMPLEMENTATION OF THE MASTER SYSTEMS PLAN

##### Major MSP Projects

The MSP identifies a number of ICT enablers. These enablers are the macro-systems required to enable ICT to address the strategic needs of the Department. Each enabler covers a number of functions that will be supported within that enabler. A macro- program must be developed to ensure that all of these enablers are compatible with each other and that there is no duplication of effort and/or costs when developing these systems. In other words, applications must be selected to complement each other so that if the financial system and the consular systems require web enablement, a single application that can address both needs could be used.

##### ICT Enablers

*Portal Solutions:* Presenting information about South Africa, strategy and pertinent information externally and internally through web-based technology. Develop a secure Web Portal. This includes special projects such as a Protocol System, Financial System, Consular System, HR System. Development of web-based Global Secure Communications and remote access users. Start of link-up to the Gateway Project. Relocation of DFA Website from GCIS to DFA.

*Project Management:* Support software to enable ICT to run information management and systems development projects in a project management format. This will include the

training of project officials.

*Human Resources Management:* Planning, skills development, personal skills training with the Foreign Service Institute, professional postings, equity transformation. Web-based for ease of access.

*Data Warehousing/Business Intelligence:* Building and accessing information by topic (Data-marts), collaborative information building, sharing information. Development of central repository for all DFA data. Introduction of work-flow. Common search engine. Split repository for secure and open information.

*Document and Records Management:* Global DFA electronic document storage, categorisation, indexing and retrieval. Start of document and record capture to electronic format following the Archive rules for data storage. Start of information storage for Knowledge Management.

*Business Process Management:* Workflow administration and control. Links to document and records handling in preparation for Knowledge Management.

*Storage Area Network:* Building electronic storage capacity by region for distribution processing and the storage of information captured by the document and record management processes.

*E-learning:* Training material, course content available online and globally, includes IT training and skills development.

*Enterprise Service Management:* ICT support, global ICT network operations monitoring and preventative maintenance systems.

*Customer Relations Management:* Recording and management of all contacts, communications connections, negotiators, parties to agreements.

#### WEB-BASED SECURE GLOBAL NETWORK

The global network will be based on the development of

the DFA Portals, Business Process Management and Enterprise Service Management, and will meet the following business requirements:

- **Command and Control Messaging** – uninterruptible, secure, highly reliable network services and work-flow for mission-critical traffic
- **Applications and Data Access** – web-based (enabled) and data-processing applications for diplomatic activities, administrative and other business processing with distributed data repositories
- **Full Internet Access** – access to the wealth of information sources available on the Internet with secure departmental e-mail facilities
- **Integrated Financial Systems** – Scaleable applications at missions, update of foreign currency conversions and access to BAS
- **Voice** – secure and open voice communication
- **Innovative Business Applications** – video conferencing, distance learning and other applications

#### Characteristics of the Network of the Future

- **Reliability and availability** – minimise interruptions and disruptions
- **Scaleable capacity on demand** – accommodate the growing and changing needs for networking services and bandwidth
- **Security** – protect information and internal IT assets whilst providing access to open communications
- **Consistency with industry direction** – capitalise on commercial trends to keep up with user demands
- **Manageability** – provide a single converged network infrastructure for data and voice communications that can be managed and supported

#### Target Solutions

The Department intends to use VSAT satellite services and open standards and protocols to ensure that capabilities remain current as technology and industry trends evolve. Virtual Private Networks (VPNs) will be established across VSATs and other commercial circuits to meet the Department's networking requirements.

Security will be addressed, as we do now, by using encryption to ensure data integrity and firewalls to protect the Department's network from attack.

Classified information will be carried on a separate high-security Intranet network that will be isolated from the open network to prevent access from unauthorised sources.

#### Inter-departmental Co-operation

The Department is working closely with other Government Agencies such as SACSA, SANDF, NIA, NCC, SITA and the GTOC to design and implement appropriate levels of network security with risk management procedures.

The open network of the future will be capable of full access to the Internet for all users at all locations.

#### Implementing the Global Network

ICT, guided by the MSP, will undertake the planning and development of this much-needed global network. As resources permit, and in accordance with priorities, missions will be provided with access to the network. Departmental Branches and Missions will be provided with Portal Solutions that will provide secure Intranet and open Internet access. Full global connectivity will be assured, with scaleable circuit capacity provided initially through the Internet and VPNs. Thus, users need not wait until the target solution satellite-based very small aperture terminal (VSAT) network is fully deployed to begin reaping the benefits of global networking. With appropriate security techniques, the Internet and other commercial services available at various locations will be used to create secure VPNs.

The Internet will provide a vehicle for collaboration and partnerships among members of the international affairs community. Through the Internet, Departmental staff will be able to interact with their counterparts in foreign governments, other RSA agencies, non-government organisations and the South African public.

#### Hardware and Software Replacement

In order to ensure that the Department is not caught in the technology trap again it is essential that a sustainable plan be developed and implemented. Equipment and applications must be replaced or upgraded in a progressive manner.

- Hardware must be replaced over a three-year cycle, with a minimum replacement of one third of the Department's equipment per year. ICT is presently in the process of procuring equipment to upgrade servers and workstations.
- Operating systems (OS) must be replaced in a manner that will appear seamless to the user. Specialist applications must be supported. In line with this a project has been initiated to replace the existing operating system with the latest Microsoft server and workstation operating systems.
- Application software must be upgraded to keep abreast of the systems in place. This upgrade must be done regionally to ensure compatibility within that region and the users must be trained in the use of the new systems.

#### EXPANDED SUITE OF SYSTEMS

Departmental databases will be made accessible to any authorised user, regardless of location. Information management tools such as Data Warehousing and Business Intelligence will enable users to search, retrieve and analyse information from any source, without requiring specialised knowledge of either the technology or individual databases.

Document and Records Management will enable the transfer and indexing of existing paper information to electronic format. This transfer and storage will comply with the Electronic Communications and Transactions Act as well as the Archives Act. It is anticipated that the volume of information that will be captured will require mass-storage devices at each of the distributed systems management sites.

This distributed processing will ensure information redundancy, data integrity and business continuity as well as meeting disaster recovery requirements by ensuring that the data is not stored in a single site.

Authorised Officials will have access to:

- Distributed databases
- Tools and information that support strategic planning, economic analyses and policy formulation
- Multilateral and bilateral treaties and economic agreements
- Research information available from a wealth of sources

Powerful tools are available and are becoming increasingly cost-effective for supporting collaborative processing in a highly dispersed global environment. Technologies such as GroupWare, video conferencing and workflow management will be used to enable teams to work together on projects, documents, tasks and issues (the Cluster approach).

#### KNOWLEDGE AND INFORMATION MANAGEMENT (KIM)

The Department's messaging system, which is extremely important to virtually all substantive and administrative activities, is in a stage of transition. Efforts are under way to standardise on a single mail package.

The current concept of informal mail messaging and formal cable messaging will be replaced in the near future with a document management and information exchange system based on encryption, authentication and strong digital signa-

tures. Officials will then be able to create messages and multimedia documents at their desks and will be able to share them with individuals and other organisations as needed. Technology will enable teams to work together on a document or be able to share a set of documents regardless of where they are located.

Commercial products are available and could easily be used to standardise electronic mail, image management, document storage and retrieval, and workgroup computing.

The benefits of an information messaging exchange (Business Process Management) will allow officials to search local and central archives (databases) and retrieve messages consistent with their access privileges. Authorised Intranet users will have access to a separate high-security database for classified messages.

The introduction of these systems will initiate the process of bringing the Department on track towards achieving KIM.

#### PRIORITY 2 : STREAMLINED OPERATIONS

Many of the labour-intensive operations have been automated, such as the automation of message transmission and reception. However, streamlining is especially critical at overseas posts, where administrative and technical staff is limited and scarce resources must be focused on Mission priorities. Processes to improve the efficiency of the Consular Section and the Protocol DIAP division will be implemented as part of the MSP solutions. New financial systems will also be implemented to assist the Department with PFMA compliance for Mission reporting.

The technical support at Missions has not kept pace with the expansion of services. The installation and maintenance of outdated equipment and software has become more complex. If the current computer technology lifecycle of approximately three years continues, demands for technical support will increase. Even with advanced communication networks

and applications, the role of regional mission support staff at Missions cannot be over-emphasised and must be fully capacitated to provide a high level of support to the regional support Mission where the distributed data storage and management systems will be located. The Mission support staff will also provide a necessary support function to the missions in their region.

By means of the Internet and Web technology, the Department can centrally maintain administrative applications for such functions as finance, human resources and logistics while providing rapid access to the information from any mission in the world. ICT will introduce Business Relationship Managers who will be responsible for liaising between the Branches and international regions and ICT. This will improve the service level to each branch and region, as there will be a single point of access.

In streamlining operations, development will continue on the integrated, web-enabled Financial Package, an updated Consular System, a revised Protocol System, effective anti-virus procedures and Internet Access from the desktop in a manner that is as secure as possible.

#### ICT PROJECTS AND ESTIMATED COSTS

A list of macro ICT MSP projects and estimated time frames is attached as an Addendum.

#### PRIORITY 6 : TRAINED WORKFORCE

The Department faces an ongoing challenge in the recruitment and retention of the skilled technical and data processing professionals needed to support its global operations. It is therefore essential that the funded vacancies that exist within ICT be filled as soon as possible.

Human Resources Development (HRD) will be approached to develop an ICT-specific HRD plan to address the development and retention of existing staff and the recruitment and accelerat-

ed training of additional staff.

The ICT-specific training programme will be for all levels of technical and support staff. The elements of the programme will be benchmarked against Human Resources models available in the market. This training will be provided through a variety of means and technologies. All entry-level staff will receive a standard set of information technology and technical training to prepare them for the start of their careers as knowledge workers.

In line with this, it will be essential for all users to undergo skills training in the use of the system applications and facilities. This training will include:

- The use of the Intranet
- Searching databases
- Accessing secure and open networks
- Use of office packages
- Security awareness

The following challenges and risks are identified:

- Scheduling all projects and identifying those that can be outsourced.
- Working with SITA to finalise projects and equipment deliveries
- Delays to equipment procurement because of SITA processes in addition to the DFA processes.
- Unplanned projects such as relocations and conferences.
- Human Resources: Recruitment, training and retention of staff.
- Mission Support Centres not adequately capacitated.
- Project plans not approved timeously.

#### CONCLUSION

For the effective functioning of the Department it is critical that the full benefits of information technology provided by the converged infrastructure of voice and data hardware and software platforms, network facilities and associated services,

## ICT STRATEGIC PLAN PRIORITIES

including the following features be fully explored and utilised:

- Centralised regional information centres to store and provide access to information through knowledge and information management
- A secure and robust global network to support end-to-end connectivity
- Real-time financial reporting
- An integrated solution for enterprise network management to ensure cost-effective support and maintenance
- Standards-based infrastructure services to promote interoperability and ease of maintenance
- Modern hardware platforms, including standard user desktops, thin client workstations and computers for mobile computing.

The infrastructure will have inherent attributes of reliability, scalability, flexibility, availability, manageability and maintainability. All these attributes presuppose commonality across the entire architecture from the user platforms to the infrastructure required to support the Department's mission.

PRIORITIES	OBJECTIVES		
	2004	2005	2006
Master Systems Plan Macro Programme within the budget provided	<b>Portal Solutions:</b> Start of the development of Portal technology for the department. <ul style="list-style-type: none"> <li>• Relocation of DFA Web Site</li> <li>• Financial Systems (Phase 2)</li> <li>• Protocol Systems</li> <li>• Consular System</li> <li>• Secure Communications System at Head Office and regional Missions</li> <li>• Initial cost: R 9.2 m</li> </ul>	<b>Portal Solutions:</b> Continuation of portal development. <ul style="list-style-type: none"> <li>• Link-up to Gateway</li> <li>• Link-up to regional mission support centres</li> <li>• Financial Systems (Phase 3)</li> <li>• Protocol Systems (Phase 2)</li> <li>• Consular System (Phase 2)</li> <li>• Secure Communications System (Phase 2)</li> <li>• Cost: R 6.3 m</li> </ul>	<b>Portal Solutions:</b> Continuation of portal development. <ul style="list-style-type: none"> <li>• Wrap-up of Portal Solutions</li> <li>• R .6m Licensing: R 2.8m</li> </ul>
	<b>Project Management:</b> Support software to enable ICT to run information management and systems development – R 200 000	<b>Project Management:</b> Support software to run information management and systems development projects – R 200 000	<b>Project Management:</b> Support software to run information management and systems development projects. Project culture developed – R 200 000
	<b>Human Resources Management:</b> <ul style="list-style-type: none"> <li>• Development of the user requirement specification</li> <li>• Identification of processes</li> <li>• Submit a request for proposal</li> <li>• Approval of project plan/charter</li> <li>• Initiate development</li> <li>• Initial cost R5.2m</li> </ul>	<b>Human Resource Management:</b> <ul style="list-style-type: none"> <li>• Procurement of equipment</li> <li>• Finalise development</li> <li>• Implementation of pilot site</li> <li>• Acceptance of pilot site</li> <li>• Start of roll-out</li> <li>• R4.8m</li> </ul>	<b>Human Resource Management:</b> Planning, skills development, personal skills training with Foreign Service Institute, professional postings, equity transformation
	<b>Data Warehousing/Business Intelligence:</b> <ul style="list-style-type: none"> <li>• Requirements analysis for the system structures</li> <li>• Information format standardisation</li> <li>• Design and construction of data mart to include regional Missions</li> <li>• Feeder process structure design</li> <li>• Administration design and construction</li> <li>• Procurement of additional hardware</li> <li>• Initial cost R 5.4 m</li> </ul>	<b>Data Warehousing/Business Intelligence:</b> <ul style="list-style-type: none"> <li>• Pilot site</li> <li>• System roll-out</li> <li>• Training of support staff and end-users</li> <li>• Changes and updates</li> <li>• Costs: R 2.6 m</li> </ul>	<b>Data warehousing/Business Intelligence:</b> <ul style="list-style-type: none"> <li>• Training of support staff and end users</li> <li>• Changes and updates</li> <li>• Cost R 2.6 m</li> </ul>
		<b>Business Process Management:</b> <ul style="list-style-type: none"> <li>• Identification and design of business processes</li> <li>• Implementation of automated processes such as e-mail, document management, calendar functions</li> <li>• Inclusion of Consular, Finances and Protocol and call centre systems</li> <li>• Identify regional missions</li> <li>• Purchase of required hardware</li> <li>• Costs: R 9.9 m</li> </ul>	<b>Business Process Management:</b> <ul style="list-style-type: none"> <li>• Pilot site</li> <li>• User training</li> <li>• Workflow administration and control.</li> <li>• Links to document and records handling in preparation for Knowledge Management</li> <li>• Cost: R 5.2 m</li> </ul>
		<b>Document and Records Management:</b> <ul style="list-style-type: none"> <li>• Information gathering</li> <li>• Analysis</li> <li>• Establish policies</li> <li>• Design to include regional mission locations</li> <li>• Development of document retention and destruction schedule</li> <li>• Procurement of hardware</li> <li>• User training</li> <li>• Implementation, and scanning of documents</li> <li>• Cost: R 12.2 m</li> </ul>	<b>Document and Records Management:</b> <ul style="list-style-type: none"> <li>• Routine scanning of documents</li> <li>• Continuation of training</li> <li>• Cost R 3.3 m</li> </ul>

PRIORITIES	OBJECTIVES	
	2006	
Master Systems Plan Macro Programme within the budget provided	<p><b>Storage Area Network:</b></p> <ul style="list-style-type: none"> <li>• Creation of electronic storage space for captured information</li> <li>• Determine storage rate</li> <li>• Identify storage servers and drives</li> <li>• Determine drive types</li> <li>• Identify regional missions for data storage</li> <li>• Purchase equipment</li> <li>• Capacitate servers</li> <li>• Pilot Installation</li> <li>• User training</li> <li>• Roll out to regional centres</li> <li>• Cost: R 9.9 m</li> </ul>	
	<p><b>E-learning:</b></p> <ul style="list-style-type: none"> <li>• Understand the requirements</li> <li>• Identify learning capabilities</li> <li>• Prioritise requirements</li> <li>• Determine which courses should be web enabled</li> <li>• Design infrastructure</li> <li>• Procure equipment</li> <li>• Pilot site</li> <li>• User training</li> <li>• Cost : R 3.0 m</li> </ul>	
	<p><b>Enterprise Service Management:</b></p> <ul style="list-style-type: none"> <li>• Establish requirements world wide</li> <li>• Develop policies</li> <li>• Develop operational layer (management systems)</li> <li>• Develop monitoring processes</li> <li>• Procure equipment</li> <li>• Pilot site</li> <li>• User training</li> <li>• Roll out</li> <li>• Cost : R 3.0 m</li> </ul>	
	<p><b>Customer Relations Management:</b></p> <ul style="list-style-type: none"> <li>• Develop CRM Strategy</li> <li>• Develop data model</li> <li>• Design CRM database</li> <li>• Procure equipment</li> <li>• Data Migration</li> <li>• Pilot site</li> <li>• User training</li> <li>• Roll out</li> <li>• Cost : R 4.0 m</li> </ul>	