

# Programme for Infrastructure Development in Africa

(PIDA)

## Sector-specific Terms of Reference for Information and Communication Technologies (ICT) Sector

Prepared by



**African Union**



**African Development Bank Group**



**NEPAD**

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## ACRONYMS

ADB	African Development Bank
AICD	African Infrastructure Country Diagnostic Study
AU	African Union
AUC	African Union Commission
CAEC	Central African Economic Community
CEMAC	Economic and Monetary Community of Central Africa
CEN-SAD	Community of the Sahel-Saharan States
COMESA	Common Market for Eastern and Southern Africa
COMTEL	COMESA Telecommunications broadband network project
EAC	East African Community
EASSy	Eastern Africa Submarine Cable System
ECCAS	Economic Community for Central African States
ECOWAS	Economic Community for West African States
GIS	Geographic Information Systems
ICA	Infrastructure Consortium for Africa
ICT	Information and Communication Technologies
IGAD	Intergovernmental Authority for Development
ITU	International Telecommunications Union
MDGs	Millennium Development Goals
NEPAD	New Partnership for African Development
PPP	Public Private Partnership
RASCOM	Regional African Satellite Communications Organisation
REC	Regional Economic Community
SADC	Southern African Development Community
SATA	Southern Africa Telecommunications Association
SC	Steering Committee
SRII	SADC Regional Information Infrastructure initiative
STAP	Short Term Action Plan
TC	Technical Committee
ToR	Terms of Reference
UEMOA	West African Economic and Monetary Union
UMA	Maghreb Arab Union
UNECA	United Nations Economic Commission for Africa
WSIS	World Summit on Information Society
CRASA	Communications Regulators' Association of Southern Africa
ARICEA	Association of Regulators of Information and Communication for Eastern and Southern Africa

## TABLE OF CONTENTS

1.	CONTEXT OF THE STUDY – ICT SECTOR .....	3
1.1	THE ICT SECTOR.....	3
1.2	THE SCOPE AND SPECIFIC OBJECTIVE OF THE STUDY FOR THE ICT SECTOR.....	4
2.	DESCRIPTION OF TASKS UNDER PHASES I AND II .....	5
2.1	PHASE I: DIAGNOSIS AND IN DEPTH ANALYSIS.....	5
2.2	PHASE II: FORMULATION OF A PRELIMINARY DRAFT STRATEGIC FRAMEWORK, INFRASTRUCTURE DEVELOPMENT PROGRAMME, AND IMPLEMENTATION STRATEGY FOR THE ICT SECTOR .....	9

## LIST OF ANNEXES

ANNEX I:	LIST OF SECTOR ORGANISATIONS
ANNEX II:	LIST OF REFERENCE DOCUMENTS
ANNEX III:	INDICATIVE FORMAT FOR PROJECT RECORD SHEET

These sector-specific terms of reference for the Information and Communication Technologies (ICT) sector should be read in conjunction with the General Terms of Reference for the study. These ToRs supplement the General ToRs in terms of certain specific aspects of the study which are more clearly dealt with in a sector-specific document. Similar sector-specific ToRs have been prepared for the other three sectors.

## **1. Context of the Study – ICT Sector**

### **1.1 The ICT Sector**

1.1.1 The ICT sector can leverage integration in Africa and provide development opportunities, but it still faces a number of challenges. Globalization and ICT are two major forces that shape the future of the world through elimination of geographical borders, and cross fertilization of cultures and societies. The Information Society constitutes the world of tomorrow, which is in the making today with ICT. ICT is the bedrock and facilitator of economic, social and cultural development, not only bolstering the efficacy of all human activities; but also opening up new horizons, due to their catalytic role in creativity and knowledge exchange. The creation of effective ICT systems and services represents, more particularly for Africa, the springboard absolutely necessary to attain the Millennium Development Goals (MDGs) by leapfrogging constraints due to the lack of traditional infrastructure and human and financial resources.

1.1.2 Investments made in this sector have entailed real progress in access to basic services, in particular through mobile telephony for which penetration rates have increased from less than 2% to 29% between 2000 and 2007. In the last decade, the ICT sector has attracted 65% of private-led investments made in infrastructure, and only 4% of ODA. Nevertheless, the high-speed Internet services that are vital for business, government and consumer applications continue to be either very expensive or unavailable in much of Africa beyond main population centres. Furthermore, many landlocked countries in Sub-Saharan Africa rely on expensive and slow satellite services for Internet access, while capacity on undersea cables, where available, is priced well above the global average. Since the establishment of NEPAD and the African Union in 2002 and 2003 respectively, substantial work has been undertaken at the continental level to bridge the digital divide between Africa and the rest of the world.

1.1.3 Recent investments have resulted in the development of a number of intra-regional links as extensions of national backbones, where they reach the borders with neighbouring countries. The backbone infrastructure of incumbent operators has been expanded and upgraded steadily over time, often taking advantage of other infrastructure networks such as electricity and railways networks, oil and gas pipelines. In many cases, these networks are available for use by other operators and service providers, but the latter are sometimes discouraged by high prices and/or low quality of service. This situation has led mobile operators to build their own backbone networks, which sometimes cover neighbouring countries depending on the regulatory environment. In summary, notwithstanding the rapid evolution seen in recent years largely due to sector liberalization efforts, a number of challenges remain, in particular on regional integration and international connectivity.

1.1.4 In view of the aforesaid, several development stakeholders in the Continent have placed the ICT sector at the heart of their priority initiatives. In 2002, the preparation of the STAP was aiming at fostering political and financial commitments required for the development of 16 priority initiatives and for infrastructure development acceleration. Among the STAP programmes are the RASCOM pan African satellite project, the submarine cable projects and associated terrestrial backhaul networks along the western coast (SAT3/SAFE) and the eastern coast (EASSy, COMTEL, SRII), harmonisation of policies and regulatory frameworks, as well as a number of programmes aiming at developing an information society, beyond the issue of infrastructure. In the context of NEPAD, the development of an enabling policy and regulatory framework under which the continental NEPAD ICT Broadband Infrastructure Network should be developed has been undertaken, under the coordination of the NEPAD e-Africa Commission.

1.1.5 Moreover, a number of feasibility studies have been carried out or are ongoing to (i) establish missing links to reach a satisfactory connectivity level, and (ii) study the feasibility of a number of

regional projects requiring coordination between governments as well as carriers. In 2004, the ITU undertook a continental level needs assessment covering the entire region that was adopted in July of 2005 by African Ministers in charge of Telecommunications and ICTs as the reference framework for building ICT infrastructure in Africa. This assessment is now being updated by the ITU and complemented by the World Bank's analytical work<sup>1</sup> to study the economical constraints to the development of backbones and policy options to address them. Feasibility studies for a number of projects such as regional backbones in Eastern and Southern Africa (SATA backhaul, COMTEL), and in Central Africa (Central Africa Backbone project) are supported by various development partners. In the context of NEPAD, a detailed feasibility study for the Eastern and Southern Africa segment of the Umojanet Terrestrial Optical Fibre Network, funded jointly by the DBSA and AFD, is being undertaken in the second half of 2008. Funding is being sought for a similar study covering the West, Central and North African segment of the Umojanet Terrestrial Optical Fibre Network.

1.1.6 Taking into account the attractiveness of the sector for private sector investments, a number of initiatives are focusing on the enabling environment aspects. Between 2005 and 2006, the NEPAD e-Africa Commission spearheaded the development of an enabling policy and regulatory framework for the NEPAD ICT Broadband Infrastructure Network for Eastern and Southern Africa. In 2008, the AUC has carried out a study<sup>2</sup> on a reference framework for the harmonisation of Telecommunication and ICT policies and regulation in Africa. This framework broadly addresses the development of the ICT sector in Africa: capacity building, implementation of integrated networks and infrastructures, training, etc. The findings of this study will be presented to African Ministers in charge of Telecommunications and ICT for their review and adoption.

1.1.7 With the aim of accelerating progress in the implementation of the Plan of Action established during the World Summit on the Information Society and the UN Millennium Development Goals, assembled Heads of State and Government and Ministers from African countries have shown their willingness to collaborate with partners from industry, financial institutions, international and regional organizations and civil society towards achieving the 5 Connect Africa Goals. The first goal is to "Interconnect all African capitals and major cities with ICT broadband infrastructure and strengthen connectivity to the rest of the world by 2012".

1.1.8 Annex I gives an indicative list of sector organisations, and Annex II gives a list of reference documents.

## **1.2 The Scope and Specific Objective of the Study for the ICT Sector**

1.2.1 The General ToRs define the scope and objectives of the overall study. Sector-specific objectives to be taken into account in the case of the ICT sector include:

- Establishing harmonized policy, legal and regulatory frameworks at the regional and continental levels to create an enabling environment that will attract investment and foster the sustainable development of ICT infrastructure in African regional markets;
- Accelerating the development of integrated infrastructures that will help bridge the digital divide, i.e. foster access to reliable and quality ICT services that will be affordable for the greatest number of the population in Africa;
- Promoting e-applications and services aimed at improving government services (e-government), education (e-education), trade and business (e-commerce), and other social services, and the performance of the other productive sectors of the economy;
- Increasing global competitiveness of Africa by reducing the costs of services and enabling Africa to integrate into the global economy;
- Capacity building (in ICT skills) and innovation systems including centres of excellence;
- Reducing or eliminating transit of intra and interregional traffic out of the continent.

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<sup>1</sup> Backbone network policy options study, World Bank, 2008

<sup>2</sup> Etude sur l'harmonisation des politiques et réglementations des télécommunications, des technologies de l'information et de la communication, en Afrique, UA, 2008.

1.2.2 The ICT sector study will follow the key steps set out in the General ToRs. These sector-specific ToRs focus only on the scope of work in Phases I and II of the study. The Inception phase and Phase III are covered in the General ToRs.

## 2. Description of tasks under Phases I and II

### 2.1 Phase I: Diagnosis and in depth Analysis

2.1.1 The General ToRs describe the Inception Phase and the kick-off workshop which provide an essential lead-in to the Phase I work. In particular:

- The Consultant will already have made contact with stakeholders to identify the nature and scope of existing information sources, so that gaps that need to be filled can be more precisely identified; and
- The kick-off meeting will have established a vision and macro framework to inform the Consultant's assumptions and projections (see task B.1. below).

2.1.2 The tasks that are described below are not necessarily sequential, and some of the tasks may overlap in terms of timescales.

#### A. Review and Situation Analysis.

2.1.3 The Consultant shall conduct a two-fold review of: (i) the regional and continental ICT infrastructure development policies; and (ii) the development of regional and continental ICT infrastructure (in operation, under implementation or planned) as well as associated services.

#### A.1. Regional and Continental Policies

2.1.4 This review will be an evaluation of regional policies implemented to date. It will address as precisely as possible the following questions:

- What is the scope of existing regional and continental policies?
- To what extent have the policy objectives been achieved?
- What are the limiting factors that impede the achievement of these objectives?

2.1.5 The work plan will be constituted by two distinct levels of analysis:

- a. **Statement concerning the level of achievement of policy objectives.** The analytical framework should specify (i) the manner in which the Consultant intends to assess the level of achievement of each of the policy objectives (econometric methods, utilization of indicators and other analytical approaches) (ii) indicators used for the evaluation; and (iii) the sources of information and documentation which the Consultant plans to use. In order to facilitate comparative analysis and maintain consistency, selected indicators will also be used in the projection and the establishment of the outlook for the future mentioned below.
- b. **Causal Analysis.** This level of analysis will concern the reasons and factors ('the constraints') which limited the level of achievement of the policy objectives. The Consultant's analytical framework will describe the manner in which the causal analysis will be carried out<sup>3</sup>. The Consultant's detailed analysis in this evaluation will be informed, among other things, by international references and quantitative data, and illustrated by analyses of specific successful ('success stories') or unsuccessful ('failure stories') measures.

2.1.6 The causal analysis is especially important in identifying the reasons for delays, conflicts and failures. The results of this analysis should feed into both the prioritisation of projects and

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<sup>3</sup> The Programme Concept Note provides some methodological indications for reference on a possible analytical framework (annex 1).

programmes, and into the implementation strategies and processes. The results of the 'Revision of the AU/NEPAD African Action Plan' study, and the 'Implementation progress review of the NEPAD STAP' study should provide a useful starting point, but the Consultant should build on these and other studies to develop a sound analytical framework that links the causal analysis with the strategic framework and infrastructure development programme. To the extent that the harmonization of regulatory frameworks and administrative procedures, and other "soft interventions", are constraining factors, the Consultant's recommendations and proposals must address these issues.

2.1.7 The output of this task will form part of the Phase I report (see B.3. below).

## **A.2. Regional Infrastructure for ICT**

2.1.8 This second part of the review will analyse existing regional and continental infrastructure and associated services, those under implementation and those that are in the pipeline. It will essentially address the following objectives:

- Contribute to the review of regional and continental policies mentioned above;
- Determine the potential for improving the performance of the existing infrastructures for longer term development prospects;
- Formulate the measures to be taken to improve the efficiency of implementation of programmes for the development of regional and continental infrastructures; and
- Enrich the Client's information base.

2.1.9 The analysis will be guided by the status of projects considered.

a. **Existing Infrastructures.** The analysis will partly cover existing regional and continental infrastructures. The Consultant shall take into account and build on existing or ongoing studies, in particular those listed in Annex II. This analysis will aim at: (i) assessing the contribution of these infrastructures to reaching policy objectives; (ii) highlighting how various factors constrain the efficiency of these infrastructures (e.g. the quality of physical infrastructure, the quality of the institutional and regulatory environment, the structure of infrastructure services markets) ; (iii) determining the potential for improving the efficiency of these infrastructures and the role they could play in the future; and (iv) drawing lessons from the construction and operation of these infrastructures. The infrastructures to be analysed will be chosen so as to respond in the best possible way to the objectives of the proposed analysis, based in particular on the following criteria:

- (i) the potential of the concerned infrastructure to contribute to integration of the African continent
- (ii) the potential of the concerned infrastructure to serve as a development hub or corridor in the definition of the development prospects mentioned above; and
- (iii) the representativeness of such infrastructure for the analysis of factors of inefficiency and, consequently, the formulation of corrective measures.

b. **Infrastructures under execution or preparation.** The Consultant shall perform the following tasks:

b.1. **Making an inventory of all projects under implementation and preparation.** The inventory will be based on documentation provided by the Client and the Consultant's own investigations. The Consultant shall prepare a sheet ('project sheet') for each of the projects using a format that will be agreed upon with the Client during the discussion of the work plan presented in the proposal. For purely illustrative purposes, a sample format (which the Consultant is invited to comment on and review) is presented in Annex III. The Consultant shall submit the project sheets in an electronic medium and in the form of an Excel or Access file, to be agreed with the Client. The Consultant shall also provide a project brief along with the sheets, to be included in the Phase I report, which will: (i) indicate the sources of information and

specify, as appropriate, the items of information; and (ii) summarize the situation of all of these projects (costs, nature, regions, status, etc.).

- b.2. **Detailed analysis of a set of projects.** The objective of this analysis will be to highlight the level of efficiency of implementation of regional and continental infrastructure programmes and the nature of limiting factors. The analysis will cover, among others: (i) the possible gaps between budgets and initial and present schedules; (ii) the factors causing such gaps; (iii) the conditions of coordination and decision-making on the key parameters of these projects (technical structure, planning, budget, role of various stakeholders in implementation); (iv) any other factor that impacted the efficiency of the process of preparation and/or implementation of the infrastructure concerned. This task should thus help learn lessons from the conditions of preparation and implementation of the projects considered. For the execution of this task, the Consultant could consult works conducted on the STAP and the evaluations of its implementation, as well as other ongoing studies mentioned in Annex II. The set of projects will be agreed upon between the Consultant and the Client and should prioritise a minimum of five projects including at least some projects retained as flagship projects in the STAP that are under preparation or implementation.

2.1.10 The output of this task will form part of the Phase I report (see B.3. below).

## **B. Establishment of the outlook for the future and identification of challenges**

2.1.11 The objective of this stage is to establish the outlook for the future for the development of regional and continental ICT services infrastructures by 2030<sup>4</sup> and assess the challenges that the regions and the continent will have to face in the sector. Such an outlook should serve as a basis for the formulation of realistic long-term objectives, to be targeted by policies and programmes at the continental level in order to anchor infrastructure development into regional integration and trade co-operation in Africa.

2.1.12 The Consultant should consider carefully the extent to which the models already developed by the AICD team can be utilised to establish the outlook for the future. They might, for example, be valuable for developing different outlook scenarios guided by political priorities.

### **B.1. Establishment of an outlook for the future**

2.1.13 **Vision:** As set out in the General ToRs, the Panel of Experts will present, for discussion at the kick-off workshop, a preliminary draft of a Vision and Framework paper. The purpose of this paper is to provide an initial view of a macro framework, and a vision for regional integration in Africa together with the contribution of each infrastructure sector to this regional integration. The outcome of these discussions<sup>5</sup> should be used by the Consultant as a starting point for assumptions and projections of the outlook for the future.

2.1.14 **Validation workshop:** The Consultant's projections of the outlook for the future will take place in two stages. First, the Consultant will develop their parameters and assumptions for the projections, and produce a methodological brief for discussion at a workshop which is expected to take place around 12 weeks after the commencement of work. The Consultant shall deliver their methodological brief a week earlier. The workshop will be organized by the Client and Consultant, and will bring together stakeholders (especially the RECs and AU specialized institutions/sector organizations) and resource persons ('external experts'). The purpose of the workshop will be to discuss the methodological note, and validate the assumptions and parameters to guide the final projections. The second stage will take place after the workshop, and will involve the finalisation of the Consultant's projections for the Phase I report.

2.1.15 **Horizons.** The projections will be established for the periods 2010-2020 and 2021-2030<sup>6</sup>. Year 2007 is envisaged as the reference year, provided that data required for the analysis could be

<sup>4</sup> The consultant may propose another horizon with justification

<sup>5</sup> This outcome will either emerge in the form of a consensus between the Panel of Experts, the consultants, and the Client; or, in the event that no consensus emerges, the final decisions will be made by the Client.

<sup>6</sup> Ibid

collected in a satisfactory way. In lieu of this, the Consultant may indicate an alternative proposal in the bid and justify it. Should the work require an analysis of past trends, the period 1998-2007 shall be considered.

2.1.16 **The assumptions and methodology:** The Consultant shall be particularly cautious in preparing the assumptions for the establishment of the outlook for the development of regional and continental infrastructures, as well as the methodology to be used. The Consultant's methodological brief will analyse the following points:

- a. **The Factors.** The Consultant shall identify and analyse the “dominant” factors that are likely to determine the trends of regional and continental infrastructure supply and demand by 2030 and various commitments and objectives (eg. the aim of NEPAD ICT Infrastructure Programme, the Connect Africa Summit goals, the WSIS objectives). This analysis will enable the definition of basic assumptions and parameters on which the prospects will be established. For example, such factors may include:
  - Endogeneous factors such as the development visions, and paths of different parts of the continent, demographic and migratory factors, economic development of nodal points and increased trade potential following national policies that encourage opening to international trade, the development of high demand services (financial services, outsourcing businesses) and the increasing use of ICT in a number of other domains (education, health, etc.);
  - Exogeneous factors such as the growth or emergence of development poles outside Africa, the evolution of major African and global traffic flows and technological changes.
- b. **Quantified assumptions and parameters** through which the results of the analysis of the aforementioned factors can be reflected.
- c. **Forecast Methodology.** The Consultant shall propose and justify the most appropriate methodology for establishing the outlook for the future. This could be based on the formulation of scenarios, in which case the choice of the scenarios to be retained should be justified in relation to the analysis of trend factors and the study objectives. The Consultant shall describe **precisely** the forecast and analysis models and other tools to be used.

2.1.17 **Formulation of the outlook for the future:** On the basis of the validated assumptions and parameters, the Consultant shall make projections of potential regional and continental ICT needs (including the demand centres, the regional/continental/international traffic volumes and flows volumes, access to landlocked countries, transit, etc). The output of this task will form part of the Phase I report (see B.3. below).

## B.2. Analysis of choices and challenges

2.1.18 On the basis of the analysis above, the Consultant shall state the options to undergo thorough comparative analyses and highlight competition mechanisms that are or are likely to come into play, and analyse the implications on ICT demand and level of investments required, for various projection options. The Consultant shall study different outlook alternatives, and as needed and required, analyse them in terms of infrastructure and services of each selected option.

2.1.19 **Analysis and assessment of the outlook for the future.** The Consultant shall highlight and analyse the compliance of development prospects with policy objectives, analysing possible conflicts, trade-offs and alignments to be carried out between objective priorities for regional and continental ICT infrastructure and improvement of the associated services. The Consultant shall perform an evaluation of costs associated with different outlook options and highlight the relationships between the conditions required for reaching the objectives and those costs.

2.1.20 **Objectives Setting.** The Consultant shall propose a number of realistic objectives that African decision makers could set for their long term regional and continental infrastructure development policies in the ICT sector. In so doing the Consultant shall formulate realistic assumptions on the level of resources that could be available for supporting the development of physical assets in the ICT sector. These objectives shall be established on the basis of relevant indicators that reflect the outlook for the future and challenges identified in the preceding analysis.

2.1.21 The output of this task will form part of the Phase I report (see B.3. below).

### **B.3. Preparation of an outline programme for the development of regional and continental physical infrastructures**

2.1.22 From (i) the review of regional and continental infrastructures and (ii) the formulation of the outlook for the future, the Consultant shall present an outline infrastructure development programme for ICT services to the 2030 horizon, in which the following shall be highlighted:

- Investment projects by status (under execution, in current pipeline, new idea);
- Institutional and legal framework/policies and other soft interventions that are required;
- Relevant implementation stakeholders;
- First cost quantifications and estimated deadlines;
- Specific choice and decision-making issues, in particular regarding projects for which bankability is uncertain

2.1.23 The output of this task, together with the outputs of tasks A.1., A.2., B.1. and B.2., will form the Phase I report, which should be delivered to the Client 20 weeks after the commencement of work.

## **2.2 Phase II: Formulation of a preliminary draft strategic framework, infrastructure development programme, and implementation strategy for the ICT sector**

2.2.1 The aim of this phase is to help reach, through a sustained participatory and consultative process, and on the basis of previous studies, a consensus on the essential elements of a regional and continental ICT strategic framework (including sector policies), infrastructure development programme, and implementation strategy and processes. The key issues that should be addressed include (but are not limited to):

- Development of integrated infrastructures and access networks as the cornerstone of e-access, with efficient cross-border interconnectivity to provide increased access to ICT services for the greatest number of the African population, including the improvement of connectivity of the African continent with other continents.
- Networks intercompatibility, and fostering convergence, interoperability, interconnections, continental roaming and services
- Establishing a level playing field for the business/regional ICT market.
- Open and non-discriminatory access.
- Fostering integrated e-strategies at national, regional and international level.
- Management of scarce resources, such as frequencies, numbers, rights of way.
- Security and reliability.
- Institutional framework and issues of infrastructure ownership and operations and maintenance.
- The financing mechanisms and options available.
- Opportunities available for private sector participation and incentives to stimulate participation.

2.2.2 A core component of this phase will be the holding of a series of sector workshops involving all key stakeholders. The aim of the workshops will be to develop proposals based on outlines prepared by the Consultant. The services of the Consultant for this phase are described below.

## **Preparation and holding of sector workshops**

2.2.3 **Structure of the workshops.** In close collaboration with the Client, the Consultant shall agree the number of workshops to be held, and the organisations to be invited to each workshop. The main workshops will be with the RECs and AU specialized institutions/sector organizations, but there may also be a need to consult with other stakeholders at a continental level, such as the NEPAD Head of States and Government Implementation Committee. The Consultant will also advise the Client on measures and programmes most efficiently addressed at continental level.

2.2.4 **Preparation of briefs for the workshops.** In close collaboration with the Client, the Consultant shall prepare briefs to contribute to the workshop discussions. Such briefs, prepared on the basis of the Phase I report, will be specific to each region. They will include summaries of:

- The conclusions of reviews of regional policies and the implementation of infrastructure development programmes;
- The conclusions of projections of needs in ICT infrastructure and associated services, and an analysis of coherence with sector policies and economic guidelines;
- A set of recommendations aimed at strengthening regional and continental policies on ICT infrastructure and associated services development and management;
- The issues that should be addressed in the strategic framework for the ICT sector, both to prioritise projects and programmes, and to ensure successful implementation;
- Outlines of specific regional and continental infrastructure development programmes for ICT sector management, including analyses of new projects; and
- Outlines of an implementation strategy and processes.

2.2.5 Briefs for the preparation of the sector workshops will be delivered to the Client 5 weeks after Phase I validation.

2.2.6 **Participation in and/or facilitation of workshops.** The Consultant shall assist the Client in preparing, organizing and implementing the workshops by:

- Proposing the structures of workshops (notably plenary and regional sessions) and a method of facilitation. Such proposals will be discussed and validated with the Client;
- Preparing the detailed agenda;
- Presenting briefs, and taking part in workshop proceedings, especially by clarifying the assumptions chosen during discussions and further analyses to be made consequently;
- Contributing to workshop proceedings, especially by ensuring that discussions effectively lead to the formulation of conclusions relevant to the strategic framework including sector policies, infrastructure development programme, and implementation strategy and processes;
- Playing the role of the facilitator and/or advising the Client on such a role in order to structure the conduct of the workshops and summarize the various conclusions.

2.2.7 At the end of the workshops, the Consultant shall prepare a report highlighting: (i) the guidelines formulated by participants on the strategic framework including sector policies, infrastructure development programme, and implementation strategy and processes; (ii) the agreed appropriate levels at which the measures and initiatives should be undertaken: continental or regional; (iii) the interfaces between the regional and continental levels on which to undertake these measures and initiatives (iv) issues on which participants could not reach a consensus, and (v) additional analyses brought forward and necessary for the consolidation of results.

2.2.8 Reports on the sector workshops will be delivered to the Client within 1 week of each workshop being completed.

## **Formulation of a preliminary draft strategic framework (including sector policies)**

2.2.9 The Consultant shall:

- Carry out additional analyses needed to validate assumptions adopted during the workshops;
- Assist the Client to address issues on which agreement was not reached during the workshops;
- Review and if necessary reformulate the strategic objectives and sector policies after discussion during the workshops;
- Finalize a preliminary draft of an African ICT sector strategic framework (including sector policies) on the basis of the guidelines formulated by the workshops and further analyses as necessary;
- Outline the measures and other propositions where a consensus was not reached.

2.2.10 The strategic framework/sector policies will provide the basis on which the infrastructure development programme can be developed, as well as addressing the issues relating to successful implementation.

2.2.11 The output of this task will form part of the Phase II report.

### **Formulation of a preliminary draft infrastructure development programme**

2.2.12 The preliminary draft infrastructure development programme will be phased into the short term (2010-2015), medium term (2016-2020) and long term (2021-2030). It will include options and their rationale as may be necessary. The programme will stem from the strategic framework including sector policies, and particularly: (i) the establishment of the outlook for the future, and the identification of strategic objectives and policies for the sector, and (ii) the strategic guidelines and criteria formulated during the workshops, especially for the prioritisation of projects and programmes.

2.2.13 This task will necessitate the following analyses:

- The coherence of projects and programmes with the policy and strategic objectives of the sector.
- Preliminary assessments of the financial and economic viability of projects/programmes to provide an initial criterion for their prioritisation.
- Refinement of the prioritisation criteria to include other relevant factors including (but not limited to): (i) the contribution of each project/programme to the attainment of objectives; (ii) the stage of development of each programme (according to defined milestones); (iii) an assessment of "soft interventions" such as the difficulties of harmonising regulatory frameworks and administrative procedures; (iv) the prospects for financing.
- Role of stakeholders in programme implementation, together with human resource availability and capacity building requirements..
- The need for complementary policy, institutional, or regulatory measures required to enable efficient and fruitful implementation.
- Potential environmental impact.
- Other risks and challenges to implementation.

2.2.14 The output of this task will form part of the Phase II report.

### **Formulation of a preliminary draft implementation strategy and processes**

2.2.15 The Consultant shall prepare a preliminary draft implementation strategy and processes, based on analyses of the potential barriers to implementation. The successful implementation of the infrastructure development programme will depend on building a consensus among all stakeholders around a realistic platform of measures and projects. The implementation strategy and processes will involve the development of priority measures, resources and tools to support the successful implementation of PIDA, including:

- a. **Priority actions to be undertaken in the period 2010-2015** in terms of both physical investments and associated measures required to secure successful implementation (e.g.

policy, institutional, regulatory, financial, legal). This set of actions shall form the Priority Action Plan, which will replace the NEPAD STAP, and should be designed in a form to be a roll-over action plan.

- b. **Respective roles of regional and continental entities and institutions** in the implementation of the Priority Action Plan, and more generally in the preparation and implementation of further investment programmes as well as in the elaboration and application of regional and continental policies. The study will review all institutional arrangements that affect the development and delivery of infrastructure services at the regional and continental levels, and will make recommendations on how they could be modified to improve infrastructure services. The recommendations will draw on the causal analysis undertaken in Phase 1.
- c. How the regional and continental policies, entities and institutions could contribute to resolving **the issue of financing proposed investments and their sustainability**, covering both construction and operation and maintenance of the infrastructure.
- d. **Mobilizing regional and external financing and private sector participation.** The study will address the mobilization of funding within the region, and from development partners and the private sector. The existing situation will be evaluated, and projections made of the likely financial resource envelopes for regional infrastructure projects, based on an analysis of past trends and other relevant factors. It is desirable to produce scenarios of future financial resources within which development projects and programmes can be prioritised. These projections should be based on realistic assumptions, and, as far as possible, innovative ways of finding solutions to these recurrent issues. The Consultant will propose measures likely to help mobilise private sector participation in infrastructure, and strengthen cooperation with international development partners.
- e. **Civil society participation** in the preparation and implementation of proposed measures in terms of policies as well as physical investments. In this context, the Consultant shall propose communication and dissemination measures that regional and continental entities and institutions shall undertake in order to enhance civil society participation.
- f. **Defining an implementation and monitoring process:** This involves proposing to stakeholders, the mechanisms and tools to: (i) review and update over time the strategic framework and infrastructure development programme; and (ii) actively manage the roll-over Priority Action Plan. With respect to the action plan, this will mainly consist of knowing how to initiate and complete an action, as well as how to monitor the progress of the action. This process will include:
  - **Capacity building:** The formulation of recommendations for the institutional capacity building of continental and regional entities responsible for monitoring, coordinating and managing the implementation of the agreed measures and actions (while implementation of the recommendations will be the direct responsibility of the entities concerned, and will be carried out outside this study).
  - **Monitoring mechanism.** Starting from the work already done to design the NEPAD Project Management System (NPMS), and the upgrading of this system under MLTSF, the Consultant will assess the adequacy of the present database as an effective monitoring mechanism, and formulate observations, comments and recommendations on its upgrading to the extent that this is assessed to be necessary. The final design and implementation of any improved monitoring mechanism will be carried out separately from this study.

2.2.16 The output of this task will form part of the Phase II report. The full report Phase II report will be delivered to the Client 24 weeks after Phase I validation, and will contain:

- Preliminary draft strategic framework (including sector policies)
- Preliminary draft infrastructure development programme
- Preliminary draft implementation strategy and processes.

**INDICATIVE LIST OF SECTOR ORGANISATIONS**

1. AFUR African Forum for Utility Regulators
2. ATU African Telecommunications Union
3. RASCOM Regional African Satellite Communications Organisation
4. Network of African ICT regulators
5. Forum on telecommunications regulation in Africa
6. ITU International Telecommunications Union
7. WATRA West Africa Telecommunications Regulators Assembly
8. SATA Southern Africa Telecommunications Association
9. NEPAD e-Africa Commission
10. CRASA Communications Regulators' Association of Southern Africa
11. Assembly of African ICT Regulators

### LIST OF REFERENCE DOCUMENTS

In order to inform the study, the Consultant shall research any other available information on the topic either from institutions working on Africa (RECs, UNECA, World Bank, etc.), from other regions, or from the web.

#### **Documents related to the African Union Strategy**

- 1 Declaration of African Union CIT Ministers Conference, Cairo, 14 May 2008

#### **Documents related to the NEPAD infrastructure programme**

- 1 NEPAD ICT Infrastructure Programme
- 2 NEPAD ICT Broadband Infrastructure Network
- 3 Identifying key regulatory and policy issues to ensure open access to regional backbone infrastructure initiatives in Africa, 2004.
- 4 Protocol on Policy and Regulatory Framework for NEPAD ICT Broadband Infrastructure for Eastern and Southern Africa, August 2006
- 5 Report on Licencing and Interconnection Framework for the NEPAD ICT Broadband Infrastructure Network for Eastern and Southern Africa, October 2006.
- 6 NEPAD e-Africa Commission Regional ICT Infrastructure Planning: *Learning from capacity and consensus-building activities to establish the NEPAD ICT Broadband Infrastructure Network*, Final Report, September 14 2007
- 7 The NEPAD ICT Infrastructure Programme for Central, West and North Africa: Validation of Existing and Planned ICT Infrastructure Projects, January 2008

#### **Africa Infrastructure Country Diagnosis**

The Africa Infrastructure Country Diagnostic (AICD) is a project designed to expand the world's knowledge of physical infrastructure in Africa. AICD will provide a baseline against which future improvements in infrastructure services can be measured, making it possible to monitor the results achieved from donor support.

##### Background papers

	Date of posting on AICD site
<i>General</i>	
Fiscal costs of infrastructure	
Access, affordability and alternatives (household survey)	<b>February 2008</b>
Unit costs of infrastructure	
<i>Investment Needs Studies</i>	
Information and communication	<b>February 2008</b>
<i>State of the Sector Reviews</i>	
Information and communication technologies	March 2008

##### Working Papers

	Topic	Authors	Date of posting on AICD site
Infrastructure and Growth in Africa	Macro/ Growth	Calderon	<b>February 2008</b>
Making Sense of Sub-Saharan Africa's Infrastructure Endowment: A Benchmarking Approach	Macro/ B'mkg	Yepes/ Pierce/ Foster	<b>February 2008</b>
Building Sector Concerns into Macro-Economic Financial Programming: Lessons from Senegal and Uganda	Macro/ fiscal	Estache/ Munoz	March 2008

Impact of Infrastructure Spending in Sub-Saharan Africa: A CGE Modelling Approach	Macro/ fiscal	Perrault/Savard	March 2008
Fiscal Costs of Infrastructure Provision: A Practitioner's Guide	Macro/ Fiscal	Briceno	
Impact of Infrastructure Constraints on Firm Productivity in Africa	Micro/ PSD	Escribano/ Guasch	March 2008
Potential for Local Private Finance of Infrastructure in Africa	Finance/PSD	Manroth/ Irving/Carter	
Understanding Africa's High Unit Cost of Road Freight Transportation	Roads	Teravaninthorn/ Raballand	
A Tale of Three Cities: Understanding Differences in Provision of Modern Services	Urban	Gulyani/Talukdar	

### Web Tools

	Date of posting on AICD site
<i>On-line interactive databases</i>	
Fiscal costs of infrastructure	
Household survey data	
Information and communication technologies sector performance indicators	
<i>On-line interactive simulation models</i>	
Investment needs for information and communication	
<i>GIS Africa infrastructure atlas</i>	

### Other documents relevant to the ICT Sector

- 1 Study on harmonisation of telecommunication, information and communication technologies policies and regulation in Africa, AU, 2008
- 2 STAP review and measures to accelerate its implementation, MLTSF Part I, 2007 (Draft report)
- 3 Infrastructure development, gap analysis, MLTSF Part I, 2007 (Draft report)
- 4 e-Strategies: National Information and Communication Infrastructure (NICI): Best Practices and Lessons Learnt, Economic Commission for Africa (ECA), 2007
- 5 Backbone network policy options study, World Bank, 2008
- 6 Regulation best practice guidelines adopted in Accra, Ghana, at the 3rd Ordinary General Assembly of the West Africa Telecommunications Regulators Assembly (WATRA)
- 7 ECOWAS harmonized ICT regulatory decisions adopted by the 6th Meeting of the ECOWAS Ministers in charge of Telecommunications and ICT, held in Abuja Nigeria on 11th May 2006
- 8 UIT and InfoDev ICT Regulation Toolkit, [date]
- 9 WSIS action plan and commitments
- 10 Communiqués related to Connect Africa Summit, Kigali, October 2007
- 11 Regional African initiatives of the World Telecommunication Development Conference, Doha, 2006
- 12 African Regional Action Plan on the Knowledge Economy (ARAPKE)
- 13 Protocol on Policy and Regulatory Framework for NEPAD ICT Broadband Infrastructure For Eastern and Southern Africa, 2006
- 14 Partnership framework for ICT infrastructure development in Africa, Needs assessment, ITU, 2005
- 15 Building an inclusive information society for all in Africa: Regulatory challenges and opportunities, ITU, 2005

### Indicative format for project record sheet

1	Project number (according to NPMS referencing system as far as possible)
2	Title
3	Funding requirement - Pre-implementation (USD)
4	Funding requirement - Implementation (USD)
5	Sector (Telecommunication /ICT, etc.)
6	Nepad Priority
7	Beneficiaries
8	Implementation stage (last stage/milestone reached, date, and narrative description)
9	RECs involved (leader and other RECs/other regional organisations involved)
10	Countries
11	Next stages/milestones scheduled dates (incl. Start and end dates)
12	Background
13	Expected Results (outputs, outcomes, impact)
14	Regional significance
15	Project assumptions and risks
16	Role of key players
17	PPP viability
18	Private sector involvement
19	Implementing agency
20	Project type (physical project, capacity building, other soft intervention)
21	Project manager (contact details)
22	Site Manager (contact details)