Pan-African E-Network Project

Presentation

By

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MCTIC BENIN

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Contents

- About TCIL
- General Network Architecture
- Equipment Provisioning at various centers
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About TCIL….

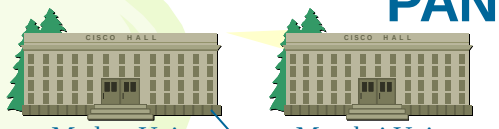
- Wholly owned Government of India Enterprise, TCIL was **set up in 1978** by the Department of Telecommunications **to share Indian expertise in all fields of telecommunications globally.**

- An **ISO9001:2000 certified** profit-making, Indian MNC having operated in over **50 countries across the globe** (22 countries in Africa)

- Presently provides **Consultancy and Project Execution services** from concept to commissioning in Telecommunications and IT.

- Annual Turnover: Around USD125 Million

PAN-AFRICAN e-NETWORK ARCHITECTURE

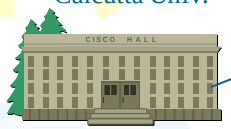


Madras Univ.

Mumbai Univ.

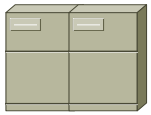
IGNOU

Calcutta Univ.



Delhi Univ.

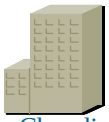
IISc, Bangalore



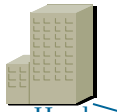
TCIL Data Center

CARE

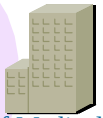
AIIMS



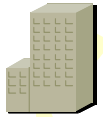
PGI - Chandigarh



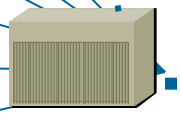
Narayana Hrudayalaya



rita Institute of Medical Sciences, Kochi

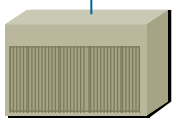


Apollo – New Delhi

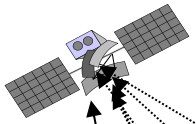


Landing Station - **India**

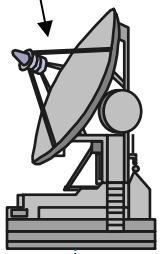
IPLC



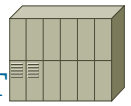
Landing Station - **Africa**



INTELSAT
704/906



HUB
EQPT



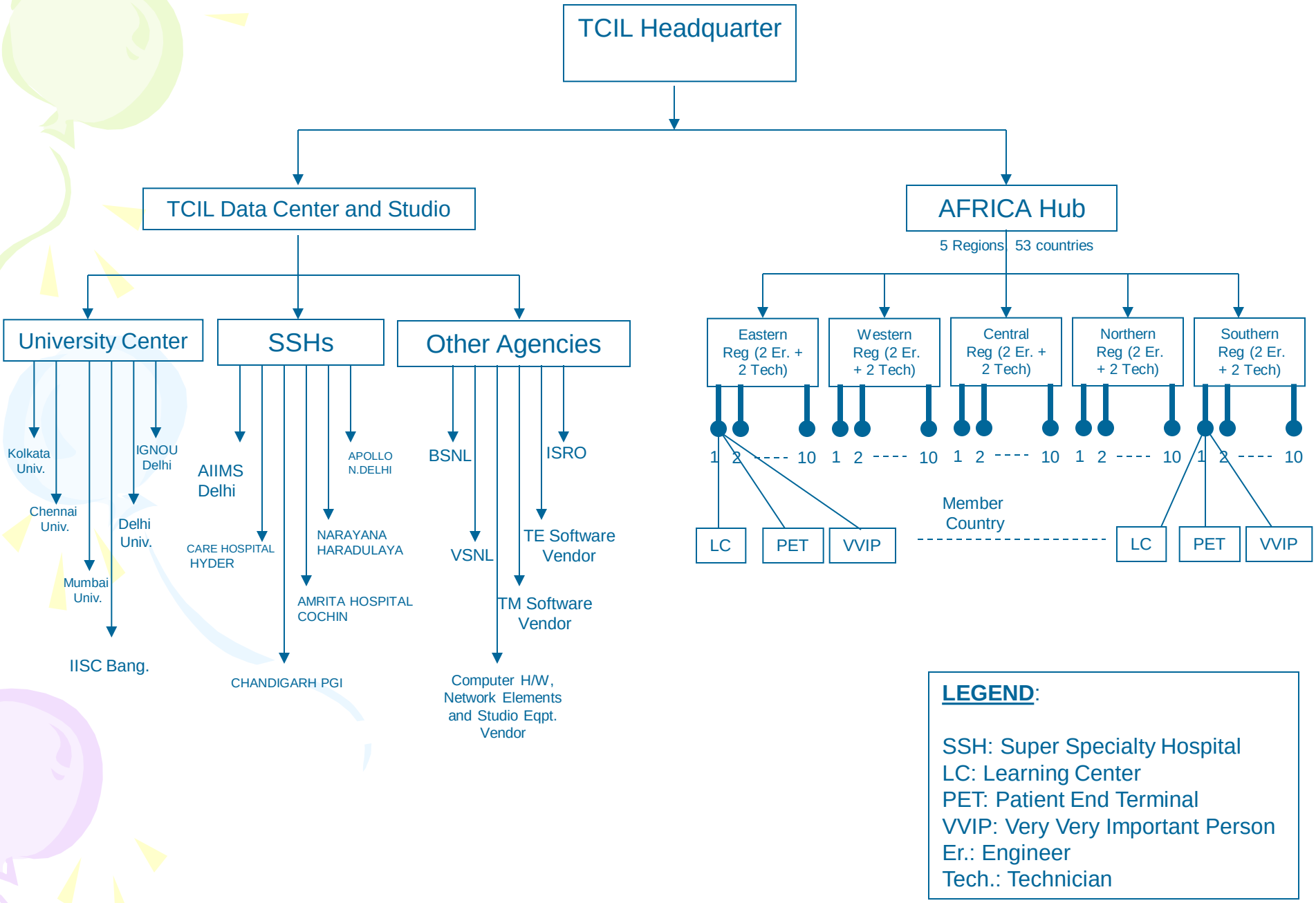
5 Regional Super-Specialty Hospitals (SSH)

5 Regional Leading University Centers

53 Remote Learning Centers

53 Remote Patient-end Locations

53 VVIP Nodes



LEGEND:

SSH: Super Specialty Hospital
LC: Learning Center
PET: Patient End Terminal
VVIP: Very Very Important Person
Er.: Engineer
Tech.: Technician

Role & Responsibilities of TCIL

- Design of Total Network Solution
- Turnkey implementation of the project
- Project **Planning and Scheduling** of various activities for timely completion

Role & Responsibilities of TCIL (Contd..)

- **Procurement of Equipments and Services**:
  - Technology and systems study, Finalizing the **systems specifications and Bill of Quantities**
  - Invitation of national and international **tenders** for various goods and services as per the purchase procedure of the company, processing the bids and **finalizing the tenders on rate contract basis for a period of 18 months**
  - **Ordering of equipments and services from time to time,** and follow up with vendors, suppliers and service providers

Role & Responsibilities of TCIL (Contd..)

Coordination and interaction with

- **Suppliers and Service providers**,
- **President's Secretariat**,
- **Ministry of External Affairs**, Govt. of India
- **African Union** Commission,
- **Member States** of AU,
- **RASCOM**,
- **Indian Universities** chosen for tele-education services,
- **Regional Leading African Universities** identified by AU,
- **Indian Super–Specialty Hospitals** chosen for tele-medicine services, and
- **African Super-Specialty Hospitals** identified by AU.

On all matters related to the project.

Role & Responsibilities of TCIL (Contd.)

- **Project supervision during Installation & Testing** of equipment/hardware and software (TE/ and TM application software) in all countries that sign the agreement with TCIL during the project implementation period
- **Acceptance testing, integration and commissioning of various systems**
- **Training** of Engineers, Technicians, IT Personnel and Paramedics for day-to-day operation and handling of equipment for Tele-education and Tele-medicine services (including CME)
- **Project monitoring** from H.Q. during the installation phase and the 5-year O & M phase of the project

Role & Responsibilities of TCIL (Contd..)

- **Organizing Conferences/Work-sho**ps in India for African nations' Authorities/representatives during the implementation period, and **guest lectures** from eminent Educationists/medical Specialists from TCIL Studio in Delhi from time to time during the 5-year project period.
- Maintenance of Pan-African e-Network **website/Portal**
- **Compilation of data, generating of statistics** and dissemination to all stake holders for information and remedial actions

TCIL MANPOWER PROPOSED FOR SUPPORT SERVICES OF THE NETWORK

- Hub Station
  - Station Manager
  - Engineers – 3
  - Technicians – 2
  - Data Entry Operator / Interpreter – 1
- Each country (Patient End Terminal, Learning center, VVIP Node)
  - Engineer-1
  - Technician-1
  - Local skilled Technician-1

TCIL MANPOWER PROPOSED FOR SUPPORT SERVICES OF THE NETWORK

- Super Speciality Hospital (SSH)
  - Engineer – 1
  - Technician – 1
  - Local skilled Technician – 1

- Regional University Center
  - Engineer – 1
  - Technician – 1
  - Local skilled technician – 1
- TCIL manpower shall extend all the required support services for maintenance of the equipments and the network.
- But, the day-to-day operations and management of the equipments and the systems in the network is the responsibility of the each member country

Responsibilities of the Member States

- To nominate a **National Project Coordinator** (focal point) and set up inter-ministerial task force of Experts in relevant fields as a nodal agency;
- **Identifying the sites** (with rooms of adequate size) for tele-education, tele-medicine and VVIP node
- Providing the **needed infrastructure in the sites**, such as power supply, electrical fittings, air-conditioners, furniture, flooring, fire-alarm system etc. **at their own cost of each member country**.
- To arrange necessary **clearances from various regulatory agencies** for implementation of the project.
- To arrange for **exemption of customs duties**, VAT & other Taxes and levies for all materials and services
- To facilitate the **grant of free VSAT licensing and other regulatory clearances.**
- To provide the required **logistic support for transportation and storage of equipment**

Responsibilities of the Member States

- Meeting the **recurring cost of consumables, utilities and security**, and the **expenses connected with the maintenance of the facilities** provided by the member state;

- To arrange **work permits / visas** for TCIL officials and other team members for execution of the project;

- To provide **skilled manpower** (Telecom/IT, Camera Technician, engineer technician, Paramedical staff etc.) for **on-the-job training during installation phase and for subsequent day-to-day operations. This is a capacity building measures as a part of the project. Hence it is the responsibility of the member country to provide a dedicated manpower to get themselves trained for day to day operations and management of the system during the project.**

Provisions proposed in the Project

- Construction of Hub Station Building at the identified location
- Supply, installation, testing, commissioning and integration of equipment for the following:
  - Hub Station
  - VSATs in 169 locations in Africa (53 countries, 5 regional universities, 5 super-specialty hospitals)
  - Data Center and Studio Set up in TCIL HQ
  - Computer and Networking Hardware (Servers, PCs, Printers, UPSs, Switches, Modems etc.)
  - Setting up Model Class Rooms with all necessary facilities
  - Operation and Maintenance of equipments for 5 years after commissioning

Provisions proposed in the Project(Contd.)

- **Tele-education content** from 6 Indian Universities, 8 hours per working day for 5 years
- **Medical consultation from 6 Super-Specialty Hospitals in India**, 8 hours per working day for 5 years
- **CME** from 6 Super-Specialty Hospitals in India, for 5 years
- **Pre-installation survey of sites** in each country by Indian experts
- **Conferences in Delhi during implementation period**, two delegates from each country (travel cost by respective country)
- **Special lectures from eminent guest faculty** at TCIL studio, one lecture per month for 5 years
- **Customization of tele-education and tele-medicine application software** in French, Arabic & Portuguese.
- Digital Library and content generation support

Provisions proposed in the Project(Contd.)

- **IPLC**: 2 Mbps initially, scalable upto 8 Mbps during the project period.
- **Internet Connectivity**: 2 Mbps initially, scalable upto 4 Mbps for tele-education.
- **Space Segment** from INTELSAT/ any other suitable satellite, to be subsequently transferred to RASCOM satellite once it becomes operational.
- It is essential to finalize the bandwidth provisioning with the satellite segment, other wise it may be difficult to get the space segment. Hence it is essential to speed up the process on all respect.

Current status of implementation

- **Agreement has been signed with 12 countries** (Ethiopia, Ghana, Mauritius, Tanzania, Burundi, Ivory Coast, Senegal, Djibouti, Seychelles, Uganda, Burkina Faso, Gambia)

Website www.panafricanenetwork.com, and also in . Org and . Net domains - has been registered and is under construction; will be up by 15th August tentatively.

Backdrop and logo for Pan African e-Network are under design

Tendering process for construction of Hub station building in Senegal has been initiated; building is likely to be ready by January 2007

- **Tendering process for supply, installation, testing and commissioning of hub and VSATs** has been initiated; hub will be ready by February 2007.

- **Specifications and BoQs are under finalization for computer hardware, medical equipments, studio set-up, tele-education and tele-medicine application software.**

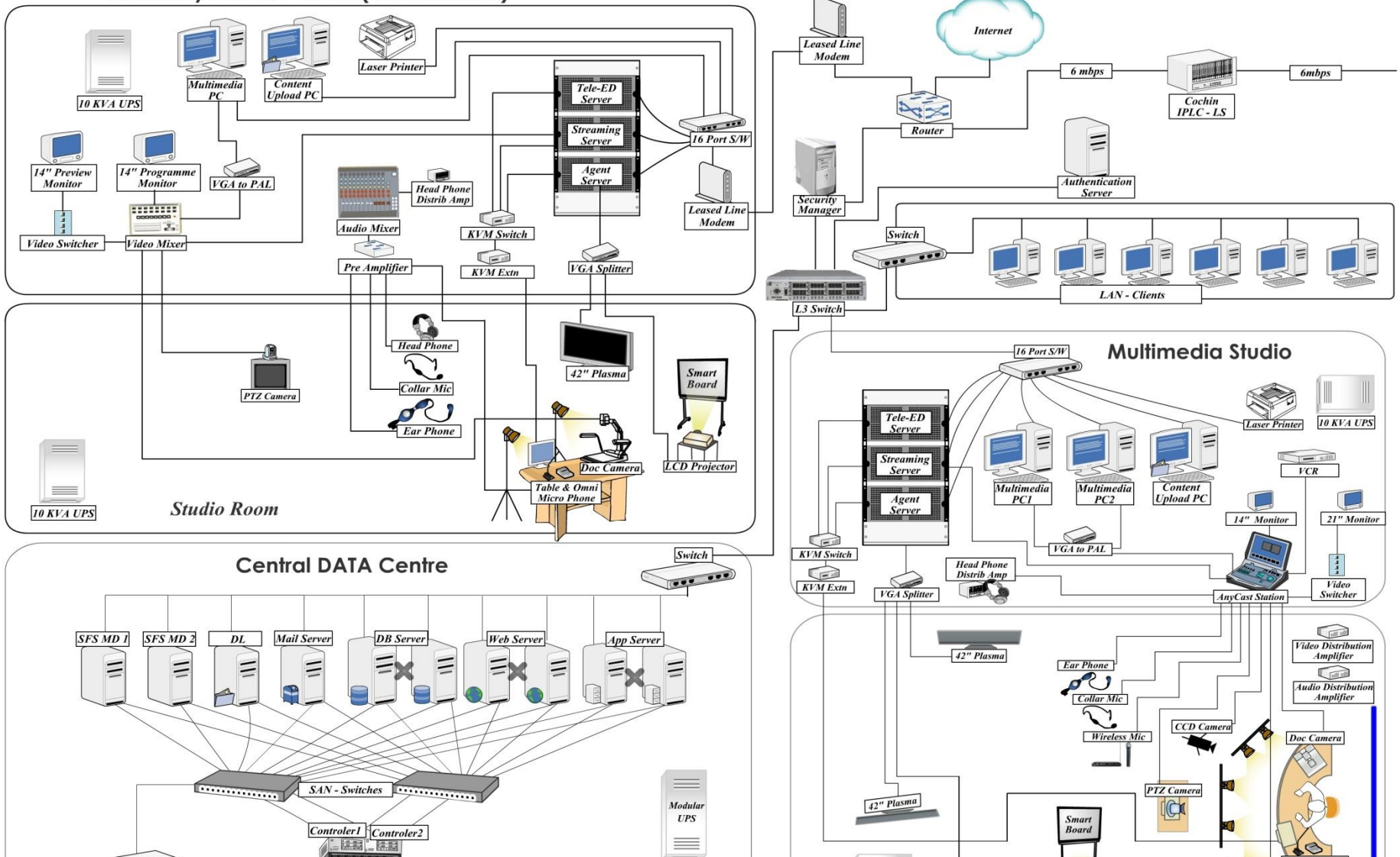
Schedule of Implementation

It has been planned to implement the project over a period of 18 months in 3 phases as under:-

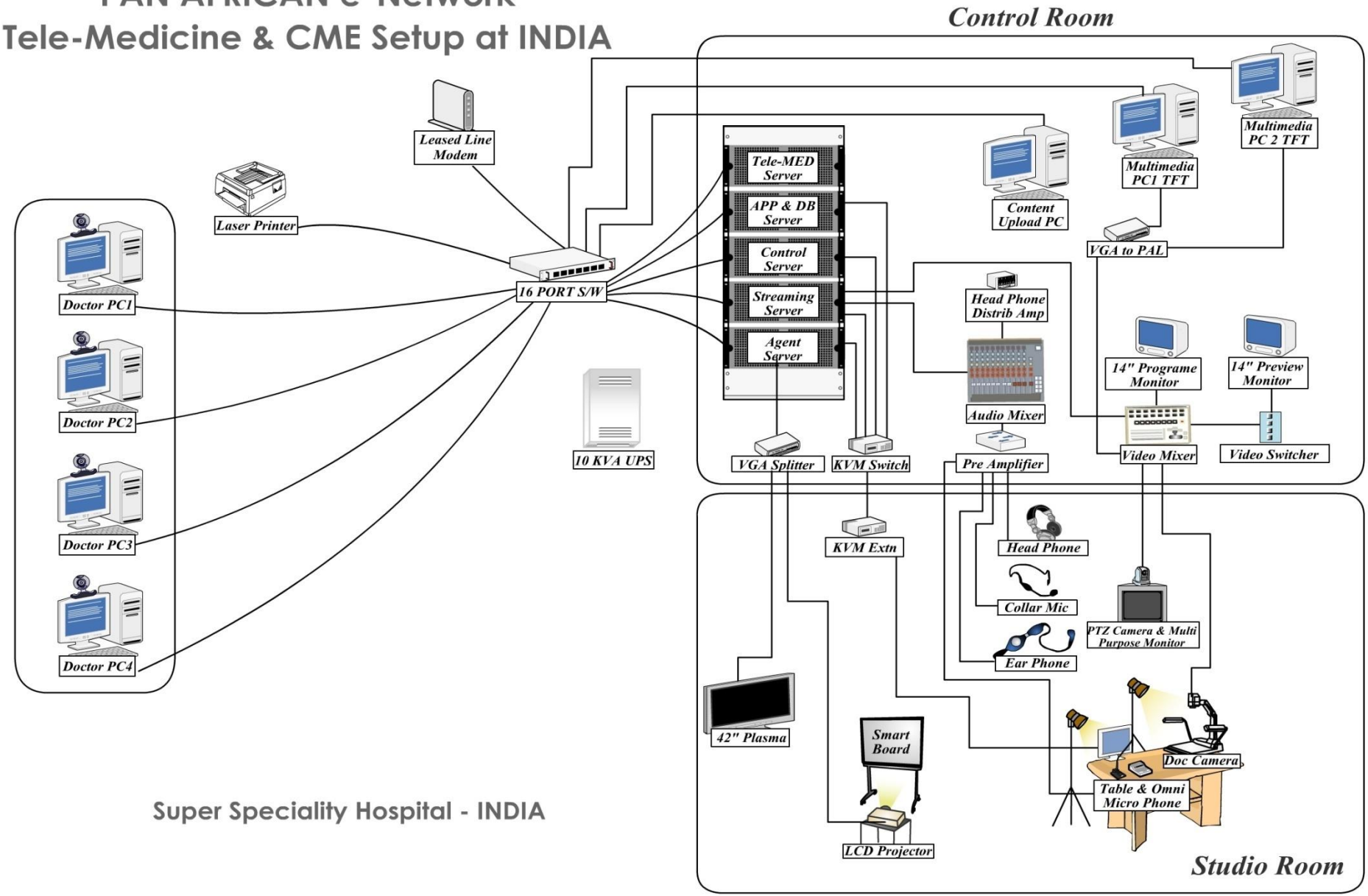
- Phase-1: Hub and 15 countries (11months)
- Phase-2: 25 countries (next 4 months)
- Phase-3: 13 countries (last 3 months)


THANK YOU !

PAN AFRICAN e-Network Tele-Education Setup at INDIA

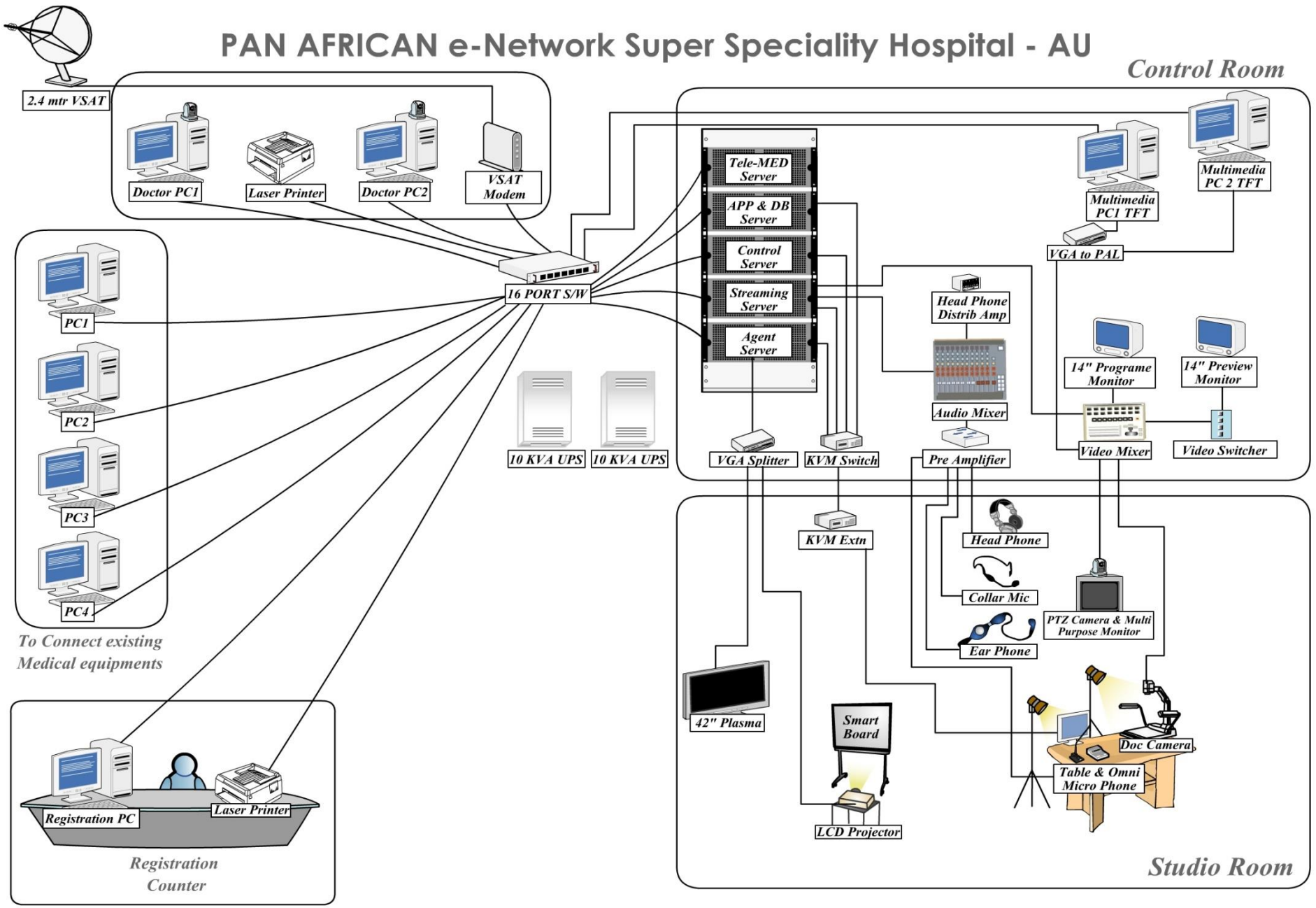


PAN AFRICAN e-Network
Tele-Medicine & CME Setup at INDIA

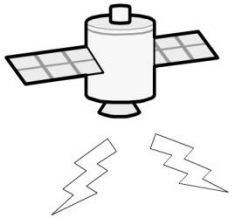


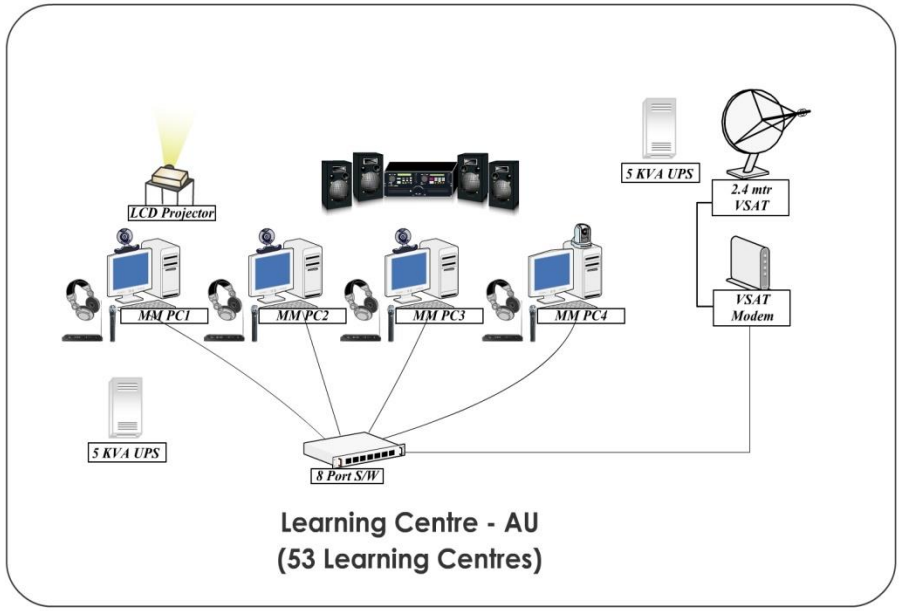
Super Speciality Hospital - INDIA

PAN AFRICAN e-Network Super Speciality Hospital - AU

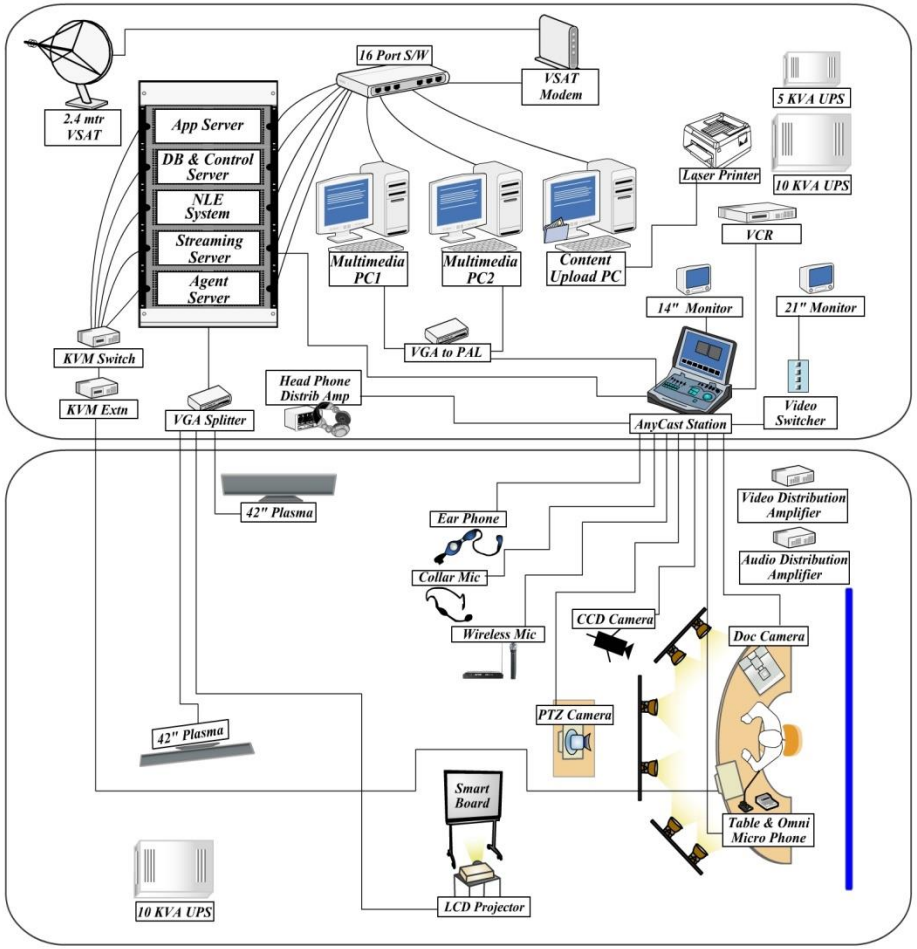


PAN AFRICAN e-Network Tele-Education Setup AU



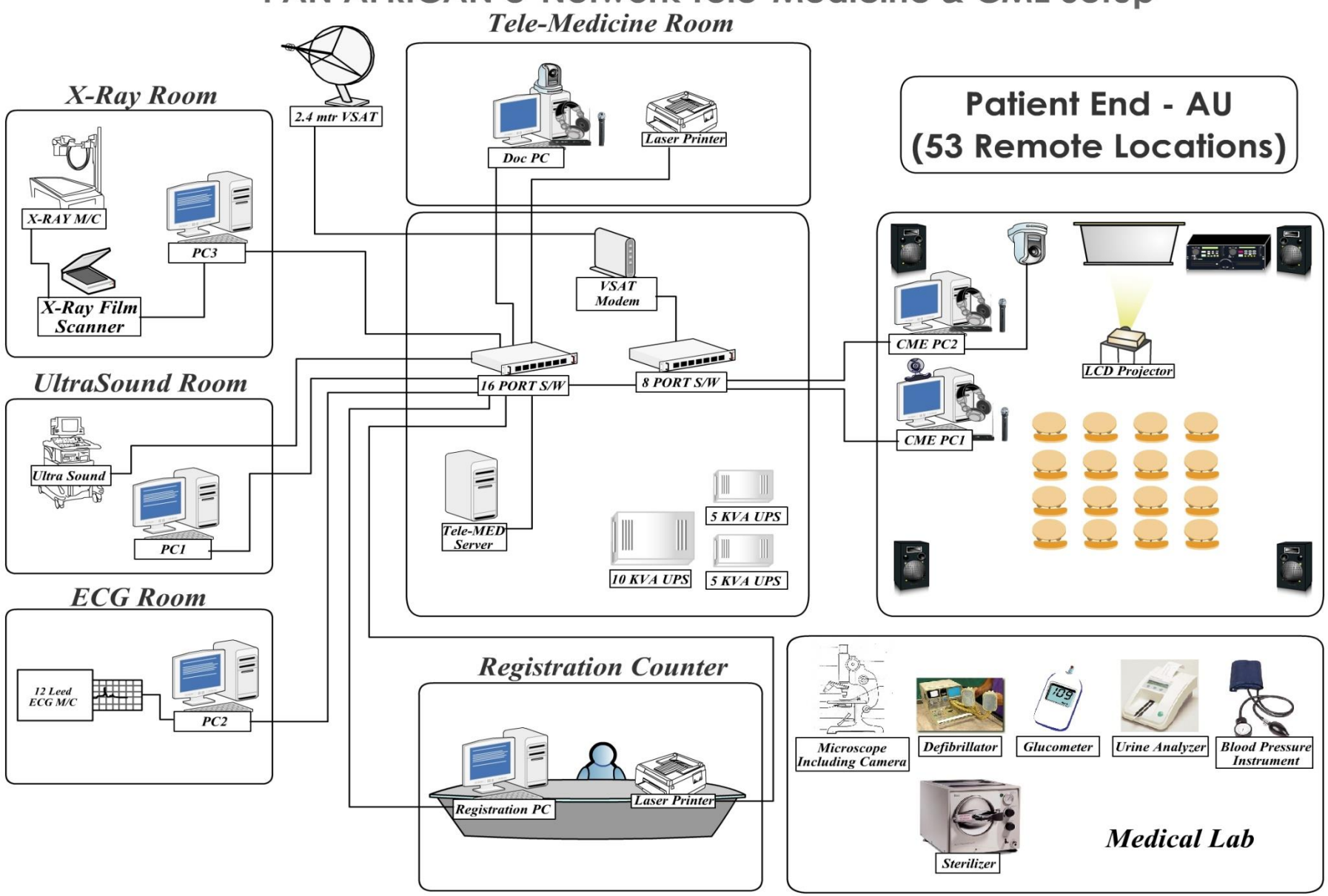


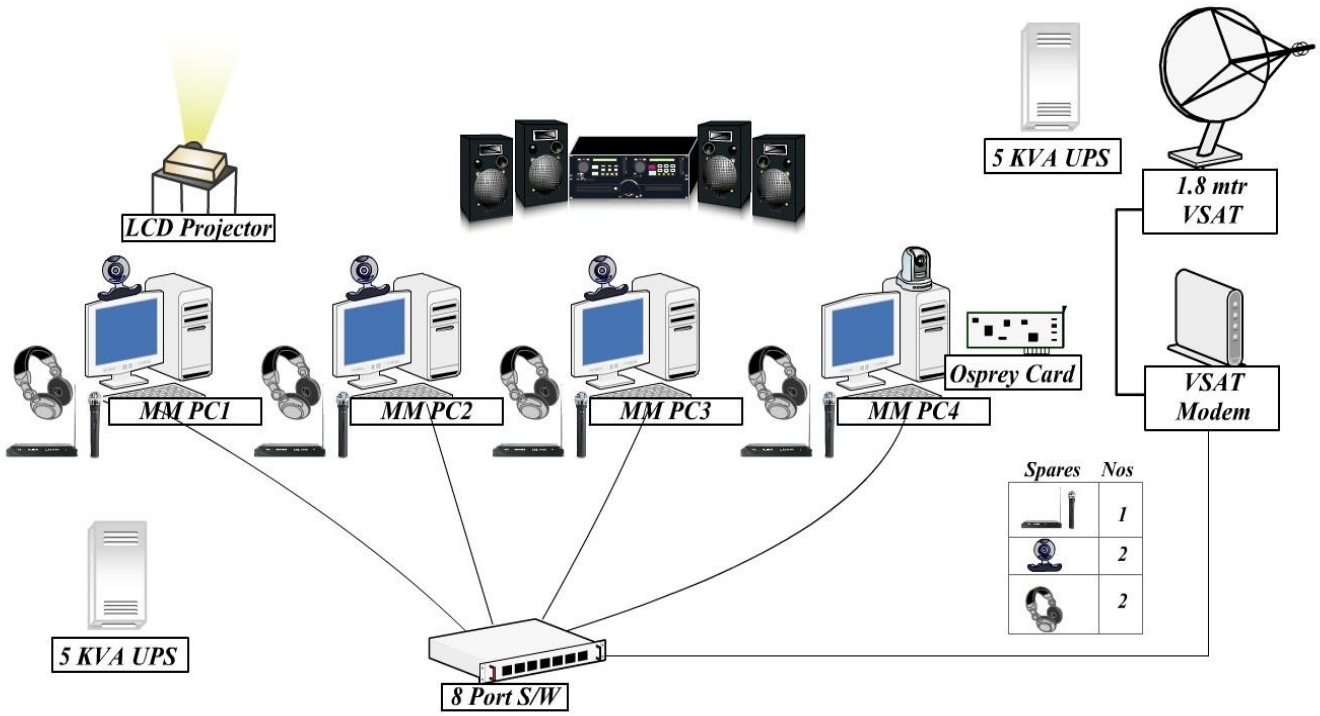
Learning Centre - AU
(53 Learning Centres)



University Centre - AU

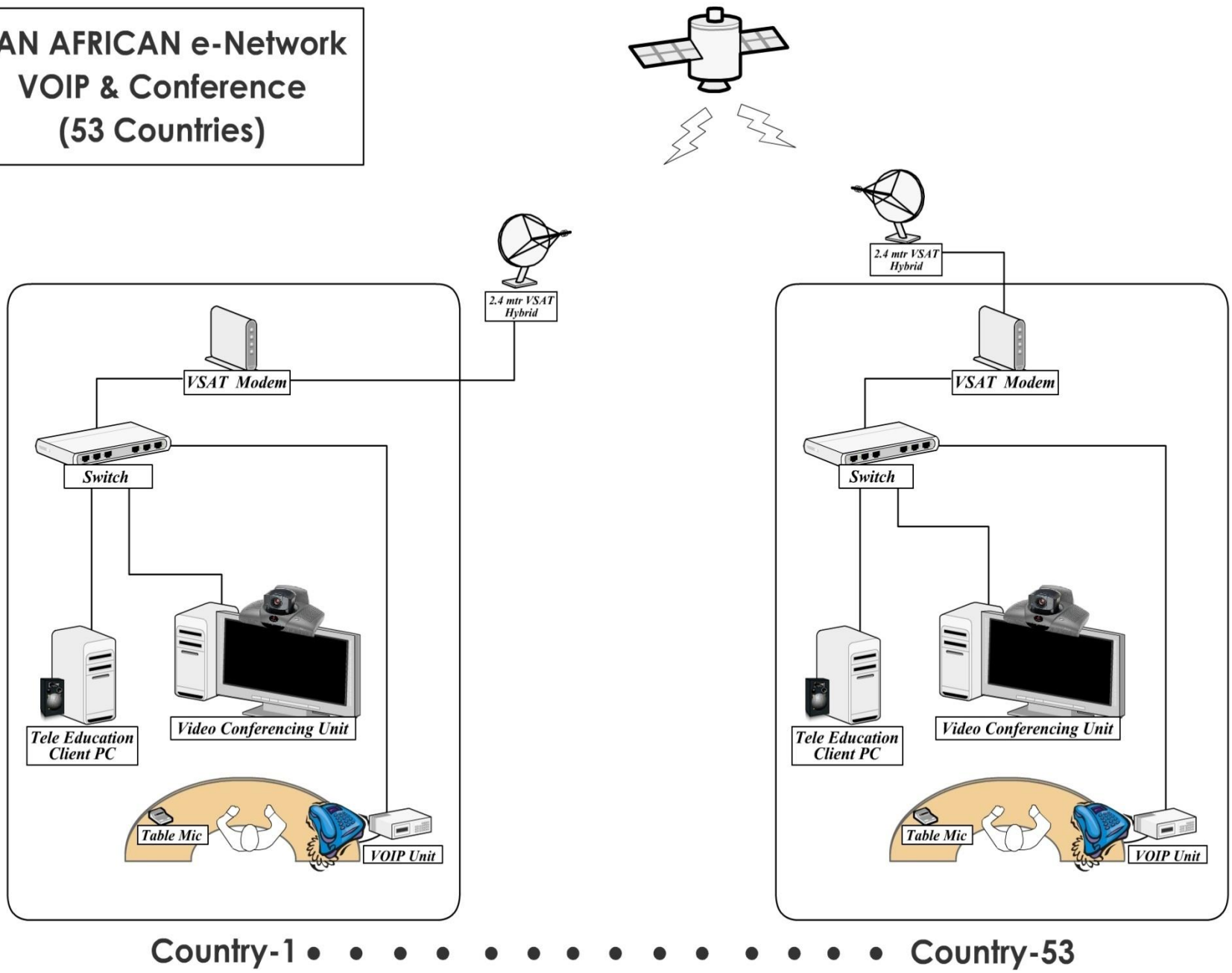
PAN AFRICAN e-Network Tele-Medicine & CME Setup





Learning Centres

PAN AFRICAN e-Network
VOIP & Conference
(53 Countries)



Hub Earth Station

Antenna Sub-Systems

- 9 m Antenna with control electronics

RF Sub-System

- TWTA in 2+1 configuration
- LNA in 2+1 configuration
- Up-Down Converters

Base- Band Sub-systems

Network Management System

Test & Measuring Instruments

Power system

- UPS
- Engine Alternators

University Center

VSAT Sub-System

- 2.4 mtr Antenna
- Outdoor Unit
- Indoor Unit

Hardware Setup

- Data Center (Servers & Storage)
- Model Classroom
- UPS

Studio Set-up

- PTZ Camera
- LCD projector
- Plasma TV
- Amplifier + Speakers
- Wirless Mics

Super Specialty Hospital (SSH) - AFRICA

VSAT Sub-System

- 2.4 m Antenna
- Outdoor Unit
- Indoor Unit

CME Setup

- Telemedicine Server
- Registration PC
- Doctor + Patient PC
- LAN connectivity for existing Medical Equipment

Patient End Location

VSAT Sub-System

- 2.4 mtr Antenna
- Outdoor Unit
- Indoor Unit

Hardware

- Telemedicine Server.
- Registration PC.
- Doctor + Patient PC.
- Medical Equipments
    - ECG
    - X-Ray
    - Ultrasound
    - Pathological equipments

Learning Center

VSAT Sub-System

- 2.4 mtr Antenna
- Outdoor Unit
- Indoor Unit

Hardware

- PTZ Camera
- LCD Projector
- Multi Student Class room setup
- Multimedia PC.

VVIP Nodes

These Remote VSAT locations are to provide VOICE and Video Conference services to VVIPs for 53 countries.

VSAT Sub-System

- 2.4 mtr Antenna
- Outdoor Unit
- Indoor Unit

Video Conferencing Equipment

VoIP Equipment

University Center –Basic Requirements

- The University center will have a VSAT terminal, Studio, Data center and associated hardware and software for content generation and to provide lectures on select courses.
  - Nodal Officer for co-ordination of work in implementation of the project.
  - An open area of 6m x 6m for VSAT antenna installation (preferably roof top) with unobstructed view of the satellite.
  - 3M x 3M for TCIL office.
  - Provision of commercial Power Supply 230V AC 50Hz +/- 3% and of capacity 20 KVA
  - Drinking water

Studio Setup – Basic Requirements

- Room Size:- Min. 12M x 8M (to accommodate 15 – 20 students)
- The room needs to have false ceiling.
- Transparent partition between studio and Production control room
- Provision of Air-conditioning as per the room dimensions.
- Provision of Furniture for Teacher. (elevated podium of 2m x 2m area)
- Furniture for students
- Sufficient nos. of Electrical points of appropriate power ratings

– Sound proofing arrangement for the lecture hall by way of fixing wooden and other acoustic tiles (sound absorbing material)

Data Center –Basic Requirements

- Room Size:- Min. 4M x 4M.
- Provision of Air-conditioning as per the room dimensions
- This room should have false ceiling, anti-static flooring, glass partitioning.
- Sufficient nos. of Electrical points of appropriate power ratings
- Intercom facility in all the rooms
- Faculty & Associated staff for delivering the lectures/courses and co-ordinate with Hub.
- Skilled Manpower, data entry operator, network technician/ engineers for proper operations of studio and Data center

Super Specialty Hospital (SSH)

- Nodal Officer for co-ordination of work in implementation of the project.
- An open area of 6m x 6m for VSAT antenna installation (preferably roof top) with unobstructed view of the satellite.
- 3M x 3M for TCIL office
- The space / rooms for servers and workstations.
- Provision of commercial Power Supply 230V AC 50Hz +/- 3% and of capacity 20 KVA
- Drinking water

Doctor consultation Room–Basic Requirements

- Room Size:- 200 Sq. ft. (5M x 4.5M) for Doctor for Tele-consultation at convenient location
- Provision of air-conditioning as per the room dimensions
- Proper lighting/ ventilation
- Wash basin / rest room nearby.
- Partition to be used during the examination of the patient.
- Furniture for waiting patients
- Sufficient nos. of Electrical points of appropriate power ratings

Medical Eqpt. Room – Basic Requirements

The Medical Equipments from the existing rooms will be connected by means of PCs/ servers through a LAN to the doctor's consultation room.

- Suitable modification/ rearrangement to the existing medical eqpt. room to install PCs
- Sufficient nos. of Electrical points of appropriate power ratings
- Proper lighting
- Wash basin / rest room nearby.
- Proper air-conditioning and ventilation

CME setup room – Basic Requirements

- Room size:- Min. 10M x 6M (to accommodate 15 students) The room needs to have false ceiling.
- 150 Sq. ft. (4M x 4M) for Network elements / servers / UPS
- Provision of Air-conditioning as per the room dimensions.
- Provision of Furniture for Teacher. (elevated podium of 2m x 3m area)

CME setup room – Basic Requirements

- Furniture for students
- Sufficient nos. of Electrical points of appropriate power ratings
- Sound proofing arrangement for the lecture hall by way of fixing wooden and other acoustic tiles (sound absorbing material).
- Intercom facility in all the rooms
- Faculty & Associated staff for delivering the lectures/courses and co-ordinate with Hub.
- Skilled Manpower for operations of studio and Data center

Learning Center – Basic Requirements

The Learning center will have a VSAT based Terminal with associated equipment and computer hardware, camera and LCD projector.

- The following facilities are to be provided by the Recipient countries at their cost for the Pan-African e-Network Project.
  - Nodal Officer for co-ordination of work in implementation of the project**.**

    Space
  - An open area of 6m x 6m for VSAT antenna installation (preferably roof top) with unobstructed view of the satellite.
  - Classroom size of minimum approx. 8M x 6M.to accommodate 15 to 20 students with teacher's podium and space for placing camera and lights.
  - A small 2 M x 2 M room for keeping server, PCs and Indoor Unit of VSAT and UPS.
  - 3m x 3m for TCIL office.

    Power
  - Provision of commercial Power Supply 230V AC 50Hz +/- 3% and of capacity 10 KVA.

Learning Center – Basic Requirements

- **Manpower**
  - Skilled manpower for proper operations and maintenance of the network.
- **Infrastructure**
  - Drinking water
  - Sufficient nos. of Electrical points of appropriate power ratings
  - Provision of air-conditioning (as per the room dimensions for class room)
  - Provision of Furniture for Teacher. (elevated podium of 2m x 2m area)
  - Furniture for students
  - Sound proofing arrangement for the lecture hall by way of fixing wooden and other acoustic tiles (sound absorbing material).
  - Intercom facility in all the rooms

Remote Patient End –Basic Requirements

The patient end terminal consists of a VSAT and will be provided with Medical equipments / Instruments (PLs. see the list attached) and equipment for Continuous Medical Education (CME).

- The following facilities are to be provided by the Recipient countries at their cost for the Pan-African e-Network Project.
  - Nodal Officer for co-ordination of work in implementation of the project**.**
  - An open area of 6m x 6m for VSAT antenna installation (preferably roof top) with unobstructed view of the satellite.
  - Patient waiting area (one or two long table)
  - Provision of commercial Power Supply 230V AC 50Hz +/- 3% and of capacity 10 KVA.
  - Drinking water

Remote Patient End –Basic Requirements

Doctor consultation room:-

- Room Size:- 3M x 4M for Doctor for Tele-consultation at convenient location
- Provision of air-conditioning as per the room dimensions
- Proper lighting
- Wash basin / rest room nearby.
- Partition to be used during the examination of the patient.
- Furniture for waiting patients
- Sufficient nos. of Electrical points of appropriate power ratings

Remote Patient End –Basic Requirements

- **Medical Eqpt. Room**
  - An area not less than (12M x 10M) in two or three separate rooms for keeping Medical Equipments as per convenience. If a large room is available, partitions can be made as per local conditions. (Area for X-Ray machine should not be less than 24Sq. Mt. and for Dark room not less than 8 Sq. Mt.)
  - Sufficient nos. of Electrical points of appropriate power ratings
  - Proper lighting
  - Wash basin / rest room nearby.
  - Proper air-conditioning and ventilation
  - Furniture for eqpt. operating staff.
  - Suitable partitions and furniture for medical equipments
  - Dark room for X-Ray (min. 8Sq. Mt.) with proper ventilation and cable conduits.
  - Storage space for electrical accessories, consumable etc

Remote Patient End –Basic Requirements

CME setup room

- Room size:- Min. 6M x 6M (to accommodate 15 students) The room needs to have false ceiling.
- 150 Sq. ft. (4M x 4M) for Network elements / servers / UPS
- Provision of Air-conditioning as per the room dimensions.
- Provision of Furniture for Teacher. (elevated podium of 4m x 4m area)
- Furniture for students
- Sufficient nos. of Electrical points of appropriate power ratings

CME setup room (Cont..)

- Sound proofing arrangement for the lecture hall by way of fixing wooden and other acoustic tiles (sound absorbing material).
- Intercom facility in all the rooms
- Faculty & Associated staff for delivering the lectures/courses and co-ordinate with Hub.
- Skilled Manpower for operations of studio and Data center

VVIP Locations – Basic Requirements

- **Space**
  - An open area of 6m x 6m for VSAT antenna installation (preferably roof top) with unobstructed view of the satellite.
  - Room size no less than 5M x 4M.
  - 3m x 3m for TCIL office.
- **Power**
  - Provision of Power Supply (5 KVA)
- **Manpower**
  - Skilled manpower for proper operations and maintenance of the network.

The project is time bound.
Any delay in according the sanction, identification of man-power,
To ensure that there are no time and cost over run

CAMPUSTIC21
INTERNET POUR ÉDUQUER AU DÉVELOPPEMENT DURABLE

Accompagner

A l'étranger, un projet d'aide et de soutien à l'éducation en Afrique par le gouvernement indien.

Programme d'autoformation développé par :
Réalisé avec le soutien du Secrétariat d'État chargé du Développement de l'Économie numérique