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**FIRST PROGRESS REPORT OF THE CHAIRPERSON OF THE
COMMISSION ON THE PAN AFRICAN e-NETWORK ON TELE-
EDUCATION AND TELE-MEDICINE**

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I. INTRODUCTION

1. Members of the Permanent Representatives' Committee (PRC) will recall that at the Joint African Union (AU) Commission – PRC Retreat, held in Cairo, Egypt, from 10 to 11 December 2017, I undertook to ensure that the Commission submits regular reports to the PRC on its activities and the implementation of the relevant decisions of the AU Policy Organs. On 7 March 2018, during the interaction I had with the PRC, I provided the list of issues on which the Commission will be briefing the PRC between March and July 2018.
2. I am pleased to provide the first report on the Pan-African e-Network (PAeN). This report provides the genesis of the PAeN and an overview of the activities undertaken within the framework of the project, highlights the achievements made and the challenges encountered, and concludes with observations on the way forward.

II. BACKGROUND

3. The PAeN project is an Agenda 2063 flagship project. It is a joint undertaking by the Government of India and the AU Commission. Its main objective is to help with capacity building by providing quality education, medical tele-expertise and consultations with some of the best Indian academic and medical institutions to AU Member States. The participating institutions are connected, through optical fibre links, to a Data Center at the Telecommunications Consulting of India Limited (TCIL) in Bhawan, in New Delhi, and then to the African satellite hub earth station in Dakar.
4. In his address to the inaugural session of the Pan-African Parliament, held in Johannesburg, South Africa, on 16 September 2004, the former President of India, Dr. A. P. J. Abdul Kalam, proposed to connect African countries by a satellite and fiber optic network that would provide effective communication for tele-education, tele-medicine, internet, videoconferencing and VoIP (Voice over Internet Protocol) services, and also to support e-Governance, e-Commerce, infotainment, resource mapping, and meteorological services, to name but a few services.
5. The project's approved budget amounted to US\$200 million. India's Ministry of External Affairs was designated as the nodal Ministry. TCIL was appointed as the implementing agency. TCIL's role was to design the network, procure and install the equipment, provide operation & maintenance (O&M) support for a period of

five years after commissioning the network in respective countries (see Table V in Annexes below). It was agreed that, after a period of five years, the operation and maintenance of the network would be transferred to the African party, i.e. to the forty-eight countries that signed a Memorandum of Understanding (MoU) with India and where the network has been installed (See Table II in Annexes).

6. The network is state-of-the-art, open and scalable, and can be integrated with other networks. However, it has evolved as a Closed User Group (CUG) primarily for delivering tele-education and tele-medicine services from Indian institutions to the Member States. It is a star-based architecture with the hub installed and hosted in Dakar, and uses the African Continental Satellite RASCOM that connects it to 169 Centres.
7. On 26 February 2009, Honorable Shri Pranab Mukherjee, then India's Minister of External Affairs, inaugurated the network at the TCIL Bhawan, in New Delhi, in the presence of High Commissioners and Ambassadors of 33 African countries. The project aims to put in place connectivity for tele-education and telemedicine and make available the facilities and expertise of some of the best universities and specialized hospitals in India. The receiving centres are fully equipped by the Government of India, whose experts also train local African staff.
8. The project is equipped to support e-governance, e-commerce, infotainment, resource mapping and meteorological and other services in the African countries, in addition to VVIP (Very Very Important Personality) connectivity among African Heads of State and Government through a highly secure closed satellite network ("red line"). These facilities have now been commissioned in forty-seven (47) countries out of the forty-eight (48) that have signed the agreement for participating in the PAeN project. The infrastructure was installed in several presidential residences or offices of Prime Ministers and Ministers of Foreign Affairs, but it has never been used.

III. ACHIEVEMENTS AND CHALLENGES

Achievements

As of March 2017, the PAeN achieved the following (see Tables III and IV in Annexes below):

- (i) 22,000 students obtained degrees in various undergraduate and graduate disciplines from various Indian universities through the network;
- (ii) 770 Tele-medicine consultations and tele-expertise sessions were carried out annually; and

- (iii) 6,700 Continuous Medical Education (CME) sessions were held through the network for nurses and doctors.

Challenges

9. From its inception and formal launching, in 2009, until July 2017, the Government of India supported the operations of the PAeN project and managed to connect forty-eight (48) AU Member States by satellite and fiber optic cable.
10. The project's annual budget, estimated at US\$ 200 million, was expected to be fully funded by the Government of India. The funds were used for the procurement and installation of hardware and software, the leasing of satellite bandwidth and submarine fiber optic cable, the operation and maintenance of the network, as well as payments to hospitals and universities that offer tele-medicine and tele-education services to the participating African countries.
11. It should be noted that participating Member States have made no contribution to the budget and operational costs of the PAeN project since its launching in 2009. Consequently, in July 2017, the Government of India discontinued all the services provided through the network and handed it over to the AU Commission, which, then, placed the network hub located in Dakar's suburban area under the custody of the Government of Senegal. Meanwhile, Senegal continued to generously cover the electricity and water costs, while a solution is being sought with a view to resuming the activities of this project.
12. The Commission has undertaken a number of actions at several levels not only to avoid the interruption of the services, but also to extend the network all over the continent. The expanded services include the AU Continental Mass Education TV (CMETV), and opening the PAeN to other service providers in the world.
13. Funding, therefore, remains the main challenge for the PAeN project. AU donors and partners are unwilling to allow their contributions to be used for the network project while it is still under India's technical assistance. On the other hand, participating Member States using the network have still not fulfilled their financial obligations as requested by the decisions of the AU organs.
14. At its 22nd Ordinary Session held from 27 to 31 January 2014, the AU Assembly adopted Decision Assembly/AU/Dec.497 (XXII) requesting the Commission to prepare an action plan for the sustainability of the services of the network. Subsequently, a study was commissioned to develop an action plan for the sustainability of the PAeN. The recommendations of the study were submitted to the first AU Specialized Technical Committee on Communication and ICT (STC-CICT-1), held in Addis Ababa from 31 August to 4 September 2015.
15. In their Declaration, the Ministers:

- a) *considered the option of the PAeN Sustainability Action Plan, wherein participating (users) member states will subsidize the Operation and Maintenance (O&M) of the network to a Cooperative Entity, and exhorted Member States, notably those that have signed the PAeN agreements (Participating Members) to contribute to the financing and participate in the implementation of the PAeN Sustainability Action Plan;*
 - b) *called for Participating Members to subsidize the Operation and Maintenance of the network and for an appropriate governance structure for the implementation to be setup. An amount of around 90,000 USD was agreed as annual payment by each participating Member State to support the operation, maintenance and service charges; and*
 - c) *requested the AU Commission, in collaboration with the STC-CICT Bureau, to setup the structures of governance in charge of the management of the PAeN as per the Sustainability Action Plan for the handover to the African Party.*
16. Regarding the issue of transfer and sustainability of the PAeN, the Assembly of Users of the PAeN – comprising participating Member States – and the STC-CICT approved an arrangement for the continuity and sustainability of the services of the network after its transfer to the African party.
17. At its second meeting, the STC on Communication and Information Communication Technology, held in Addis Ababa from 20 to 24 November 2017, the Ministers requested the Commission to:
- *provide appropriate financial resources for the continuation of operation of the PAeN as an AU Agenda 2063 flagship project;*
 - *submit to PAeN Assembly of Users and the Bureau of the STC-CICT-2, for approval, a project proposal on the use of this infrastructure for satellite based services, including tele-education and new services, among others, including the Pan African Mass Education TV for Talent and Content Development, Diplomatic (VVIP) communications, and on the structures of governance in charge of the management of the new phase of the PAeN;*
 - *present to the next Bureau of the STC, for approval, a project proposal on the use of this infrastructure for the Pan African Mass Education TV for Talent and Content Development and VVIP communications; and*
 - *recommend to AU Policy Organs to allocate adequate financial resources to continue the operationalization of the Pan African e-Network, as an Agenda 2063 flagship project.*
18. All these decisions have been endorsed by the Executive Council. To recall, the PAeN's total operating expenditure (OPEX) amounts to US\$4,221, 440. The

yearly amount that is to be paid by each participating Member State to support the operating expenditure is therefore US\$87.946 (rounded up to US\$90,000).

IV. OBSERVATIONS AND RECOMMENDATIONS

19. The transfer of PAeN from the Indian Government to the Commission means that the Union now has full ownership of the PAeN's infrastructure and management. Restoring the operations of the network will therefore be a clear demonstration of the Union's capacity and will to manage and sustain it. Moreover, the PAeN project greatly contributes to the development of the education and health sectors. It is urgent that participating Member States make their payments without further delay, so that the PAeN can resume its operations for the benefits of all countries concerned.
20. As requested by the AU Policy Organs, the Commission has identified ways of making use of the PAeN infrastructure for further add-on services. A pre-feasibility study on the Continental Mass Education TV has been completed. In addition, the network could also be of great use for the Pan-African University and serve as both a foundation for the African Virtual (e-) University and platform for rural connectivity.
21. For these reasons, and considering the real benefits of the PAeN for the people of Africa, I intend to write to the Heads of State and Government to urge Member States, particularly the 48 countries that are already participating in the project, to fulfil their financial obligations and other commitments on this important Agenda 2063 flagship project. The benefits that will accrue through the project are substantial and critical for internet infrastructural development on the continent.

ANNEXES

Table I: List of Sites and Centers in the PAeN

Location	No. of sites	Name of site	Details of site/s
INDIA	1	Data Center	At TCIL Bhawan, New Delhi
	5	Universities for Tele-Education	1. Amity University, Noida 2. IGNOU, New Delhi 3. BITS, Pilani 4. University of Delhi 5. University of Madras
	12	Super Specialty Hospitals (SSH) for Tele-Medicine setup	1. All India Institute of Medical Sciences (AIIMS), New Delhi 2. Amrita Institute of Medical Sciences, Kochi 3. Apollo Hospitals, Chennai 4. CARE Hospital, Hyderabad 5. Escorts Heart Institute and Research Centre, New Delhi 6. Fortis Hospital, Noida 7. Narayana Hrudayalya, Bangalore 8. Sri Ramchandra Medical Centre, Chennai 9. Moolchand Hospital, New Delhi 10. HCG, Bangalore 11. Dr Bala Bhai Nanavati Hospital, Mumbai 12. Sanjay Gandhi Institute of Medical Sciences, Lucknow
AFRICA	1	Satellite Hub Earth Station	At Dakar, Senegal
	5	Regional University Centers (RUCs)	1. Kwame and Nkrumah University of Science and Technology, Ghana, 2. Makerere University, Uganda, 3. Yaoundé University, Cameroon. 4. Alexandria Faculty of Commerce, Egypt 5.Chancellor College, Zomba, Malawi
	5	Regional Super Specialty Hospitals (RSSH)	1. Super Specialty Hospital, Nigeria, 2. Super Specialty Hospital, Republic of Congo (UPS not yet cleared from Customs) 3. Super Specialty Hospital, Mauritius 4. Alexandria Faculty of Medicine, Egypt 5. Fann Hospital, Senegal
	48	Learning Centers (LC) (Various educational courses from 5 Indian Universities and RUCs from Africa.	Benin, Botswana, Burundi, Burkina Faso, Cameroon, Cape Verde, Central African Republic (CAR), Chad, The Comoros, Côte d'Ivoire, D.R.Congo, Djibouti, Egypt, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea Bissau, Kenya(under relocation), Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Nigeria, Niger, Republic of Congo, Republic of Guinea, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

Location	No. of sites	Name of site	Details of site/s
AFRICA	49	Patient-End Locations (PEL) (Medical consultancies and Continuous Medical Education (CME) from 12 Indian SSHs and RSSHs from Africa.	Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic (CAR), Chad, The Comoros, Côte d'Ivoire, Djibouti, D.R.Congo, Egypt, Eritrea, Ethiopia, AU-Ethiopia, Gabon, The Gambia, Ghana, Guinea Bissau, Kenya, Liberia, Libya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Rwanda, Republic of Guinea, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Sudan, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.
	43	VVIP Nodes (for video-conferencing and Telephone among the Heads of States)	Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic (CAR), Chad, The Comoros, Côte d'Ivoire** ,Djibouti, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali*, Mauritania, Mauritius, Mozambique, Niger, Republic of Congo, Republic of Guinea, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, South Sudan, Sudan, Somalia, Tanzania, Togo, Uganda, Zimbabwe and Zambia. (**VVIP site in Côte d'Ivoire has been destroyed during political crisis as per information dtd.06/06/2011 from the country coordinator). * Mali VVIP site equipment have been lost during the political crisis).

Table II: List of Member States Participating in the PAeN (by region)

MoU	Western Africa	Eastern Africa	Southern Africa	Central Africa	Northern Africa
African countries who signed MoU for Pan African Project	1.Benin	1.Comoros	1.Botswana	1.Burundi	1.Egypt
	2.Burkina Faso	2.Djibouti	2.Lesotho	2.Cameroon	2.Mauritania
	3.Cape Verde	3.Eritrea	3.Malawi	3.Central African Republic	3.Libya
	4.Cote d'Ivoire	4.Ethiopia	4.Mozambique	4.Chad	
	5.Gambia	5.Kenya	5.Namibia	5.Congo	
	6.Ghana	6.Madagascar	6.Swaziland	6.D.R.Congo	
	7.Guinea	7.Mauritius	7.Zambia	7.Gabon	
	8.Guinea-Bissau	8.Rwanda	8.Zimbabwe	8.Sao Tome & Principe	
	9.Liberia	9.Seychelles			

MoU	Western Africa	Eastern Africa	Southern Africa	Central Africa	Northern Africa
Project	10.Mali	10.Somalia			
	11.Niger	11. Sudan			
	12.Nigeria	12.Tanzania			
	13.Senegal	13.Uganda			
	14. Sierra Leone	14.South Sudan			
	15.Togo				
Remarks	15 out of 15	14 out of 14	8 out of 10	8 out of 9	3 out of 6

Table III: Details of Tele-Educational Courses (by degrees and diplomas/certificates)

S.No.	Courses	Language	University
i)	Post Graduate Courses		
1	MBA (HR/Mktg.)	English	IGNOU
2	M.Sc (IT)	English	University of Madras
3	MBA (International Business)	English	Amity University
4	Master of Finance & Control (MFC)	English	Amity University
5	Master of Tourism Management (MTM)	English	IGNOU
6	MBA (HR/Mktg.)*	French	Amity
ii)	Undergraduate Courses		
1	Bachelor of Business Administration(BBA)	English	University of Madras
2	Bachelor of Business Administration(BBA)	French	Amity University
3	B.Sc (IT)	English	Amity University
4	Bachelor of Finance & Investment Analysis	English	Amity University
5	Bachelor of Tourism Studies (BTS)	English	IGNOU
iii)	Diploma/Certificate Courses		
1	Certificate in Database & Information System	English	BITS Pilani
2	Certificate in Networking & Operating System	English	BITS Pilani
3	Certificate in Electronics & Instrumentation	English	BITS Pilani
4	English language	English	Delhi University

S.No.	Courses	Language	University
5	Diploma in French Language	French	Amity University
6	German Language	German	University of Madras
7	Arabic Language	Arabic	University of Madras
8	Certificate in Accountancy	English	Delhi University
9	PG Diploma – IT	English	Amity University
10	Diploma in Business Management	French	Amity University
11	Diploma in Tourism Studies	English	IGNOU
12	Diploma in early Childcare and Education	English	IGNOU
13	Diploma in HIV/AIDS	English	IGNOU
14	Certificate in Environmental Studies	English	IGNOU
15	Certificate in Tourism Studies	English	IGNOU
16	Certificate in Nutrition and Child Care	English	IGNOU

Table IV: *Medical disciplines offered to African countries by Tele-Medicine*

S. No,	Medical Discipline
1	General (Internal) Medicine
2	Radiology
3	Adult Cardiology
4	Pediatric Cardiology
5	Dermatology
6	Endocrinology
7	Infectious Diseases/HIV-AIDS
8	Neurology
9	Gastroenterology
10	Nephrology
11	Pathology
12	Psychiatry
13	Pediatrics
14	Medical Oncology
15	Urology
16	Genetics
17	Gynecology

S. No,	Medical Discipline
18	Ophthalmology

Table V: Typical PAeN Operating Expenditure (source: Indian Government)

	Items	Annual Cost by Item	Annual Total
Common to all	1. Operating and Maintenance HUB Station	\$ 33189	\$ 4 221 440
	2. Satellite links charges for one 36 MHz Transponder	\$1 600 000	
	3. Annual Maintenance Contract (AMC) of hardware at HUB station	\$ 40 947	
	4. Annual Maintenance Contract (AMC) of VSAT at HUB station	\$ 99 504	
	5. Annual Maintenance Contract (AMC) for Tele-medicine software	\$105 390	
	6. Annual Maintenance Contract (AMC) for Tele-education software	\$ 76 933	
	7. Overhead Head Running cost of Hub Station, including staffing	\$191 620	
	8. Operational cost of Data Center	\$ 45 990	
	9. Tele-education services (incl submarine cable fees)	\$1 608 386	
	10. Tele-medecine services (incl submarine cable fees)	\$ 452 670	