



ICT Africa

May 17-21, 2006

Kenyatta, International Conference Centre (KICC)

NAIROBI, KENYA

Conference Report

1) Introduction

This report summarizes the ICT Africa 2006 conference held in Nairobi, Kenya, from May 17 to 21 2006. The meeting attracted about 100 attendees from all over Africa, the USA, Australia, Germany and the UK. The conference featured very well known keynote speakers and presenters in Telecommunications and Information technology. This first NEPAD Council ICT conference set a very positive stage for future annual events.

Detailed conference presentations will be uploaded to the conference website:

<http://www.nepadcouncil.org/ICTeAfrica2006/index.html>

2) Conference Committees

a) Conference General Co-Chairs

Dr. Jabulani Dhliwayo, NEPAD Council/Corning Incorporated

Dr. Appolinaire Djikeng, NEPAD Council/Center for Genomic Research

b) Conference Finance Chair

Professor Lynette Louw, NEPAD Council/NELSON Mandela Metropolitan University

c) Technical Chair

Dr. Vincent Oria, NEPAD Council/New Jersey Institute of Technology

d) Technical Program Committee

Dr. Guy Alain Amoussou, Humboldt State University, USA

Dr. Kalogiannakis Michail, University Paris 5 - Rene Descartes

Dr. Celestin Brou, Fraunhofer Institute, Germany

Dr. Jabulani Dhliwayo, Corning Incorporated

Dr. Omar Fakh Hamad, Gwangju Institute of Science & Technology

Dr. Ousmane Koné, IRIT, France

Dr. Alexander Maphosa, Edward Mondlane University

Dr. Vincent Oria, NJIT, USA

Dr. Fad Seydou, University of Maryland at College Park, USA

Dr. Mark D. Vaugn, Corning Incorporated

Dr. Kokou Yetongnon, Université de Bourgogne, France

Dr. Qian Zhong, Tyco Telecommunications

e) Advisory Committee

Eng. James Rege, Former Permanent Secretary – Kenya Ministry of Information and Communications

Eng. John Waweru, Director General - Communication Commission of Kenya
Mr. Alonso Azner, Communication Advisor for Eastern Africa - UNESCO
Dr. Grace Ongile, CEO – NEPAD Kenya
Ms Fauzi Abdi, ICT Specialist – NEPAD Kenya
Mr. Philip Kisia , Director – Kenyatta International Conference Center
Dr. Terry Kero, Institute of Electrical and Electronic Engineers
Mr. Akossi Akossi, Secretary General – Africa Telecommunication Union
Dr. Blaise Dondji, VP – Coordinator of Commissions – NEPAD Council
Research Associate – Yale University
Dr. James Kajete, European Representative – NEPAD Council

3) Conference Sponsors

a) Main Sponsors

UNESCO
Corning Incorporated
JC Broadband
Kenya Data Networks
NEPAD Kenya

b) Technical Co-Sponsor

IEEE

c) Media Sponsors

Business Monitor International
The Herald (South Africa)
Career Communications Group

4) Conference Advertising – Web Sites

The conference was listed on the following websites:

NEPAD Council

<http://nepadcouncil.org/ICTeAfrica2006/>

ELSNET-List Message

<http://www.elsnet.org/cgi-bin/elsnet/showevent.pl?31Oct2005-09u52.08.html>

Career Communications Group

http://www.ccgmedia.com/article_display.php?id=19

Columbia University

<http://www.columbia.edu/cu/lweb/indiv/africa/cu/vl/confs.html>

<http://www.columbia.edu/cu/lweb/indiv/africa/cu/vl/Kennews.html>

Rigzone

http://www.rigzone.com/events/event_detail.aspx?e_id=3172

Omidar Network

http://www.omidyar.net/group/small_pond/news/20/

Digital Divide

<http://www.mail-archive.com/digitaldivide@mailman.edc.org/msg05053.html>

Kabissa

http://www.kabissa.org/component/option,com_events/Itemid,66/task,view_month/year,2006/month,05/day,23

APC

<http://www.apc.org/english/rights/africa/index.shtml?apc=e21843ea1>

AATASHAKUR

<http://www.assatashakur.org/forum/showthread.php?p=70558#post70558>

Africa Education

http://africaeducation.org/conferences_in_africa.htm

HANA

<http://hana.ru.ac.za/articles.cfm>

Women of Uganda Network

<http://www.wougnet.org/Events/projectnews06.html>

UNECA

<http://www.uneca.org/aisi/picta/pictabulletin/pb51.htm>

iBusiness

<http://www.ibusiness.de/termine/tm/ADB22611.html>

CRF

<http://www.crf.com/pages/publication.asp?PublicationID=94&CountryID=1>

All Conferences

<http://www.allconferences.com/conferences/20051002210251/>

UNESCO

http://www.education.nairobi-unesco.org/index.php?option=com_content&task=view&id=43&Itemid=108

University of Texas

<http://www.ece.utexas.edu/~rheath/conferences/>

5) Key Organizations Represented and the Conference

NEPAD Kenya

NEPAD Council - USA

Ministry of Information and Communications in Kenya

Communication Commission of Kenya

Corning Incorporated - USA

Career Communications Group - USA

IDRISA (South Africa)

HANA – South Africa

The Independent Communication Agency of South Africa (ICASA)

Obafemi Alowolo University - Nigeria

Nelson Mandela Metropolitan University

RMIT University – Australia

Kenya Data Networks - Kenya

Rhodes University – South Africa
University of Fort Hare – South Africa
Cyber Creations – Nigeria
University of Technology – Australia
Ministry of Communications and Information
University of Johannesburg, South Africa
SRI - USA
Samea Group – Kenya
Centurion Systems
IEEE

6) Conference Key-Note Speakers



Dr. Elijah Bitange Ndemo, Permanent Secretary, Ministry of Information and Communication, Kenya.

Dr. Ndemo holds a Bachelor's degree in Finance, and a Masters in Management Information Systems from Minnesota USA, and a PhD degree in Industrial Economics from the University of Sheffield, England. Between 1989 and 1993, he was a Financial Systems Analyst with Medtronic Inc. a fortune 500 company in the USA. He joined University of Nairobi in 1993 as a Tutorial Fellow rising through the ranks to become a Senior Lecturer in the Business School. In 2005, Dr Ndemo was appointed Permanent Secretary in the Ministry of Information and Communication where he quickly started new development programmers including marketing Kenya as a destination for Business Processing outsourcing.



Dr. Don Keck retired in 2002 as Vice President, Research Director for Corning Incorporated.

He had served there in a number of technical and management positions for 34 years. Most recently he served as a consultant for the Infotonics Technology Center that he helped start in upstate New York, He was a key member of the Corning (Keck, Maurer and Schultz) team that invented low-loss optical fiber in 1970. This work created the optical fiber telecommunications revolution and enabled the Internet. He has authored more than 150 papers and holds 36 patents.

Dr. Keck received his physics degrees from Michigan State University. He is a Distinguished Alumnus and currently serves on the College of Natural Science Advisory Board. He received an honorary doctorate from Rensselaer Polytechnic Institute.

Dr. Keck is an inductee of the National Inventors Hall of Fame. He is a member of the National Academy of Engineering and has served on several National Research Council Panels. He is a Fellow of the Optical Society of America and the IEEE. Among his awards are the U.S. Department of Commerce American Innovator Award and the U. S. President's National Medal of Technology.

Presently he is serving as vice-chair, National Inventors Hall of Fame Foundation Board of Directors. He is a member of the oversight board for the U. S. National Institute of Standards and Technology (NIST). He is a past Board Chairman of the Optoelectronics Industry Development Association (OIDA) and Past President of the National Inventor's Hall of Fame Foundation. Formerly he served on the boards of directors of PCO, Inc., a joint venture of Corning, Inc. and IBM, and the Optical Society of America. Locally he serves on the American Red Cross, the Community Foundation, and the Science Center Boards.



Dr. Kai Uwe Wulff, Managing Director, Kenya Data Networks

Dr. Wulff has been Kenya Data Networks Managing Director for close to 2 years. In this period he has overseen rapid growth of KDN's infrastructure which has included the roll out of Wimax and roll out fiber optics.

He joined Kenya Data Networks from African Safari Club Group of companies where he was the Marketing Director & CIO then rising to be the Managing Director African Safari Club, African Safari Airways.

Before joining African Safari Club Limited Mr. Wulff had owned and worked with WULFF EDV Systemhaus AG in Germany, a solution provider for networks, hard- and software, business/management consulting and IT audits.

Mr. Wulff is a Doctor in Economic Science, is a licensed commercial pilot and a trained officer of the German Air force.

About KDN

KDN is a "Full Service, Data Communications Carrier" that was licensed by the Communication Commission of Kenya in 2003 as a "Public Data Network Operator". KDN is a local

company and has a stated policy to use local investors and local expertise to build world-class infrastructure in Kenya.

Tomorrow's IT professionals will not care which telecommunications technology is driving their Wide Area Network (WAN), or their internet connection, they just want to know that it works. Furthermore they want to know that when it stops working someone is going to fix it quickly. In Kenya's IT industry of tomorrow what will count are Quality Of Service (QOS) and Service Level Agreements (SLA).



Dr. Qian Zhong, Director of System Design and Implementation, Tyco Telecommunications.

Dr. Qiang Zhong is a director of System Design and Implementation at Tyco Telecommunications (Tyco Telecom), a business unit of Tyco International. Tyco Telecom is the industry pioneer in undersea communications technology and marine services with its heritage of technical innovation and industry recognized performance, providing the most reliable, high-quality solutions to organizations with undersea communications needs vital to their core mission. Dr. Zhong's organization is responsible for the overall design and implementation undersea communication systems.

Dr. Zhong received his Ph.D. from the University of Pennsylvania and also has an M.B.A. from the Stern School of Business at New York University. He joined AT&T Bell Laboratories in 1992 and has worked in various organizations at AT&T and Tyco. Prior to his current position, he was Director of Cable Design at Tyco Telecom.



Dr. Tyron Taborn, President and CEO, Career Communications (USA)

Tyrone Taborn was a contributing author for *The Covenant With Black America* (Third World Press), the New York Times best seller compiled by PBS-TV's Tavis Smiley. He has also written op-ed pages for the Baltimore Sun and has been a panelist on the television program "Square Off" at WJZ-TV, the CBS affiliate in Baltimore, Maryland. He now writes a national technology column that appears in newspapers, magazines, and on Web sites, and he is currently a member of The National

Association of Hispanic Journalists. Taborn has been a member of the Baltimore Engineering Society and has served on the boards of the Baltimore Urban League and the Granville Academy.

His other current and past board positions include Centro de la Comunidad Inc., Advancing Minorities' Interest in Engineering (AMIE), Baltimore Area Council Boy Scouts of America, the Montessori School in Baltimore County, Afro-American Newspapers, the Executive Board of the Morgan State University Foundation, and the Board of Trustees of the Baltimore Educational Scholarship Trust.

Taborn is the founder of Black Family Technology Week program, which is sponsored by the IBM Corporation. He is also the founder of La Familia Technology Awareness Week and the Native American Technology Awareness Project.

Taborn was recently honored by the Baltimore Marketing Association as Business Person of the Year and received the Hispanic Engineer of the Year Chairman Award. He was one of only nine Internet and Technology leaders honored by Sprint and MOBE IT, which recognizes minority leaders in technology, awarded the Visionary Award by Mercedes Benz, and named one of the 50 Most Important African Americans in Technology by the editors of Blackmoney.com and souloftechnology.net, which sponsors the awards to demonstrate the critical role that Blacks play in the growth of cutting edge industries. Congressman Major Owens presented him with a Congressional Black Caucus Honor as a Pioneer in Publishing.

With roots in both the Latino and Black communities, Taborn, who grew up in Los Angeles, California, attended college at Cornell University in Ithaca, New York. At Cornell, Taborn majored in government. He also held membership in the Senior Honor Society "Quill and Dagger" and was one of 32 academic scholars honored with membership in the prestigious Telluride Association. In 1978, Taborn was selected the first LBJ Intern in the office of late Congressman Julian C. Dixon.

Taborn has a Ph.D. (h.c) from Morgan State University, and he recently released a book entitled **Speech: A Dialog**.



**Prof. Mounir Hamdi, Director of Computer Engineering,
Hong Kong University of S&T**

Professor Mounir Hamdi received the B.Sc. degree with distinction in electrical engineering from the University of Southwestern Louisiana in 1985, and M.Sc. and Ph.D. degrees in electrical engineering from the University of Pittsburgh in 1987 and 1991, respectively. While at the University of Pittsburgh, he was a research fellow involved with various research projects on interconnection networks, high-speed communication, parallel algorithms, switching theory, and computer vision. In 1991 he joined the Computer Science Department at Hong Kong University of Science and Technology as an assistant professor. His main areas of research are high-speed networks, ATM packet switching architectures, wireless networking, and parallel computing.

Dr. Hamdi has published over 60 papers on these areas in various journals and conference proceedings. He co-founded and co-chairs the International Workshop on High-Speed Network Computing, is on the editorial board of IEEE Communications Magazine, and has been on the program committees of various international conferences.

Dr. Hamdi is a member of the ACM.



**Dr. Robert B. Kozma,
Emeritus Director & Principal Scientist**

SRI International (USA)

Dr. Robert Kozma is an Emeritus Director and Principal Scientist and Fulbright Senior Specialist at the Center for Technology in Learning at SRI International in Menlo Park, California, where he has been for the last 12 years. For 20 years prior to this, he was at the University of Michigan as a professor at the School of Education and a research scientist at the Center for Research on Learning and Teaching. His expertise includes ICT policy that links education reform to economic and social development, international educational technology research, the evaluation of large-scale technology-based education reform, the design of advanced interactive multimedia systems, and the role of technology in science learning. He has directed or co-directed over 25 projects and authored or co-authored more than 75 articles, chapters, and books. He has consulted with

Ministries of Education in Egypt, Singapore, Thailand, Norway, and Chile, as well as Intel Corporation, the World Bank, OECD, UNESCO, and the Ford Foundation on the use of technology to improve educational systems and connect to development goals. Most recently, his pro-bono work with the Millennium Villages Project, a UN-sanctioned project at Columbia University, on the role that ICT can play in supporting poverty reduction and development in Africa.

7) Conference Summary

Conference presentations were divided into two plenary sessions and conference tracks. There were two plenary sessions; the opening plenary session on Wednesday May 17 and a second plenary session on Thursday, May 18. After the plenary session, the conference was divided into two tracks, a technical track featuring research and development work from academic institutions and a general track featuring business and policy presentations. On Saturday, May 20 attendees were treated to technical tutorials in fiber optics and voice over Internet.

Africa desperately needs to plug into the global information highway – or forever be left on the wrong side of the digital divide. This was the strong message to and from delegates at the conference as Africa remains a digitally isolated place. And that was the main reason why, at the invitation of the **Nepad Council**, policy-makers, technicians, academics, students and NGOs gathered in the impressive Kenyatta Conference Centre to find ways to connect Africa to the matrix.

The opening plenary session included a speech from the Minister of Information and communication of Kenya (read on his behalf by his permanent secretary, Mr. Bitange Ndemo), a speech from the New Partnership for Africa's development, Dr. Don Keck's presentation and the presentation from the Telecommunication regulator in Kenya, Engineer John Waweru. The minister of communications was also scheduled to give some opening remarks but she cancelled her trip at the last minute

The Eassy Project - Mr. Ndemo capitalized on the occasion to express his frustration at the slow progress of the EASSy project. During a press conference after the session, Mr. Ndemo repeated his threat to go it alone if the EASSy consortium does not put their act together and make some progress on the project. The main issue behind the controversy is the requirement by the World Bank (who will be augmenting the funding of the project) and the New Partnership for Africa's Development, NEPAD, for "open access". While it is questionable that the Kenyan's can indeed go it alone, the discussions generated have reinvigorated the EASSy program.

One of the first keynote speakers, Dr Donald Keck, retired research director of Corning Incorporated in America, set the scene: since the first Internet experiments in 1969 more than 860 million people have been linked to the Net; there are 770 million PCs in use,

and 700 million kilometres of optical fibre cables have been deployed to keep this worldwide information and communication network connected.

E-commerce - Dr Keck said global e-commerce is growing rapidly. In 2002 it was worth only US\$2 billion but it grew to US\$13 billion this year. Still, however, the lack of viable ICT infrastructure in Africa makes it difficult for the continent to participate effectively. Dr Keck identifies the digital divide as wide and exploding.

Of every single inhabited coastline on the planet, East Africa is the only one without a submarine telephone cable. Ironically, submarine-cable technology is not in the least modern. The first one across the Atlantic was laid by the American Cyrus Field in 1856. At the conference Dr Qian Zbong, director of system design and implementation of Tyco Telecommunication Systems, suggested that Africa's IT solution lay in a simple 17mm thin ("the width of my little finger") fibre-optic cable from Durban to Port Sudan. It will branch off to Dar-es-Salaam, Mogadishu, Mombassa, Djibouti, and wherever else it is needed. If not hijacked by money-making consortia, it could reduce the cost of East African connectivity by something like 90%.

That figure of 90% re-emerged in a speech by conference chairman Dr Jabulani Dhlwayo. He explained that Africa spent billions to route telephone calls – the continent's connection to the Internet – from one African country to another, through Western Europe and North America and via their satellites and cables because of its own poor telecommunication infrastructure: "Fix the infrastructure and you will have solved 90% of the problem," Dr Dhlwayo urged.

Kai Wulff of Germany, MD of Kenya Data Networks, warned it was not as simple as that. All the connectivity and broadband technology in the world would not solve Africa's communication problems without ensuring secure electricity, security, and other basic infrastructure. Cell phone towers are stolen overnight, erratic electricity supply makes computer-use impossible in rural areas and bad roads create numerous other problems. Beyond this, African governments will have to come up with less draconian taxation of service providers to bring connectivity prices down.

Kai Wulff has a point. Absence of electricity makes any IT dreams virtually impossible to achieve. Indeed, a regional 600 mW interconnection project to link east African countries with Southern Africa via Zambia will cost almost US\$0.683 billion. After the money is found, it could consolidate Zambia's position as an electricity exporter to Eastern and Southern Africa, but this must still actually be implemented. And the World Wildlife Fund is quoted in the quarterly Uganda Securities Exchange bulletin that the number of Africans without power will raise from the present 535 million to 586 million within the next 20 years.

On a more positive note

The conference also had its delegates who were less negative. They were notably from the Eastern Cape. Krishna Rau, Alfred Terzoli and Martin Mandioma, of the **Telkom Centre of Excellence at Rhodes University in Grahamstown** and the **University of Fort Hare in Alice**, have started developing a prototype of simple, cost-effective, integrated e-business initiatives through existing telecommunication platforms.

A field-test at Dwesa and Cwebe in the Mbashe municipality on the Wild Coast has been positive and has proved that e-business skills could be transferred via telecommunications to marginalised and semi-marginalised communities. The researchers say that using and developing existing ICT gives access to information, which leads to knowledge. Knowledge is a prerequisite for development. Therefore ICTs are considered to be promising technologies that can facilitate and kick-start social and economic development. The delegates' successes were achieved in an area with a lack of public and regular transport, a scarcity of technical personnel, low levels of economic activity, low income per capita, an absence of electricity, and poor cell phone coverage.

Kick-start development

William Smale, a Rhodes BCom and IT graduate who runs a non-profit organisation to rebuild second-hand computers to install in rural Eastern Cape school computer labs, warned that we could not wait for ideal IT circumstances to descend on Africa before tackling the digital divide. We have to make use of what we have, adapt and survive. His project brings basic computer skills to pupils in rural schools.

What is more, William Smale's sentiment rings true. According to a Reuters report published in the Kenyan Standard newspaper during the conference, analysts believe mobile operators should launch simple data products tailored for ordinary Africans rather than hoping that sophisticated Internet technology will catch on in the world's poorest continent.

The analysts say that while cell phone use is high in Africa, data – which includes text messages – accounts for only 6% of usage. The immediate solution is to give Africa bottom-of-the-range technology.

Not everybody agrees with this. Kai Wulff says that the philosophy in Europe of dumping old technology in Africa “because it is good enough for Africa” costs Africa a lot of money.

Ultimately the solution lies in finding a golden mean: using existing technology to its fullest potential for information, education and e-commerce, while upgrading systems to make use of next-generation technology as soon as the emerging infrastructure allows for it.

8) Complete Conference Program

	Tuesday, May 16th, 2006	
17:00 - 20:00	Registration	

	Wednesday, May 17th, 2006	
From 7:00am	Registration	

	Plenary Session I
09:00 - 09:05	Welcome and introduction of conference committees Dr. Jabulani Dhliwayo, General conference co-chair
09:15-09:45	Opening speech by Hon. Mutahi Kagwe, Minister of Information and Communication of Kenya. [Speech presented by Mr. Bitange Ndemo – Permanent Secretary)
09:45-10:15	Engineer John Waweru Managing Director, Communication Commission of Kenya. Deregulation of the Telecommunication Industry
10:15 - 10:20	NEPAD Kenya Presentation
10:30 - 11:30	Dr. Donald Keck Vice President and Research Director (Retired), Corning Inc.
11:30 - 12:00	Questions and answers
12:00 - 02:00	Lunch Break
02:00 - 06:00	Technical Tutorials Here you can download the Programme for the Tutorial Sessions .

	Thursday, May 18th, 2006	
	Plenary Session II	
08:00 - 08:30	Mr. Kai Wulff Managing Director, Kenya Data Networks	
08:30 - 09:00	Dr. Qian Zhong Director of System Design and Implementation, Tyco Telecommunications	

	- PRESENTATION -	
09:00 - 09:30	Dr. Tyron Taborn President and CEO, Career Communications	
09:30 - 10:00	ICT and Rural Development Dr. Robert Kozma Emeritus Director & Principal Scientist, SRI - PAPER -	
10:00 - 10:30	Coffee Break	
10:30 - 11:00	Dr. Kevit Desai Director of Engineering - Centurion Systems Ltd. IEEE Chairperson - East Africa	
11:30 - 12:00	General Questions	
12:00 - 01:30	Lunch Break	
	Track I: Networks	Track II: ICT Policy and Applications
01:30 - 02:00	Interpreting PMD data in a deployed fibre network: influence of polarization scrambling Lorinda Wu, Lawrence Viljoen, Comfort Mankga, Tim Gibbon, Ann Conibear, Andrew Leitch	The Role of Higher Educational Institutes in ICT-Business Incubation, ICT Parks and Sustainable Development Fisseha Mekuria - PRESENTATION -
02:00 - 02:30	TWO-LINK INTEGRATION & THE ROUTING INFORMATION MANGEMENT FOR USE OF AWG-BASED CUSTOMER-OWNED OPTICAL	ICT AND FOOD SECURITY TOOLS KAT LOMBO KADISHA

	IP NETWORKS Yutaka KATSUYAMA, Shingo HIRONAKA, Keiji NISHIKAWA, Osanori KOYAMA	
02:30 - 03:00	Coffee Break	Coffee Break
03:00 - 03:30	A low cost, IP-based access loop for consumer telephony in rural communities Bradley Whittington	Quality Assurance processes for eLearning Sheila Howell, Cleo Chadwick - PAPER / PRESENTATION -
03:30 - 04:00	A SIP user agent for Rural South African Schools Nyalazi Mpofo, Alfredo Terzoli, Hippolyte Muying, Radha Rao	E-Government Policy for a Developmental State Romi Barjaktarevic - PAPER -
04:00 - 04:30	Analytical Survey of RDMA: Algorithms and Designs Omar F Hamad, Ji-Seung Nam, JongWon Kim	Regulation and the Digital Divide Guy Maughfling, Cezanne Maherali - PRESENTATION -
04:30 - 05:00	International Medical Video: Worldwide Echocardiography and Education via Broadband Internet: James Loehr , M.D., F.A.C.C. President, Icardiogram, Incorporated - PRESENTATION -	Securing Public Revenue: Kenya's Fiscal Project Anthony Aidinis - PRESENTATION -

	Friday, May 19th, 2006	
	Track I: Networks	Track II: ICT Policy and Applications

08:00 - 08:30	To be confirmed	Addressing the future educational needs of the Telecoms industry for communication in Africa Andrew Leitch, Ernest Van Dyk, Lorinda Wu, Ann Conibear
08:30 - 09:00	Cramer-Rao Bound on Timing Recovery for GSM Receivers Thomas Olwal, Michael Antonn van Wyk, Damien Chatelain, Marcel Odhiambo, Ben van Wyk - PRESENTATION -	THE EMERGENCE AND EVOLUTION OF E-CAPITAL IN SAUDI ARABIA MOHAMMED AL-JADEED, ALFONSO MOLINA
09:00 - 09:30	Information Rich Radio-Wave Path Loss Model Emmanuel Mukubwa, Anish Kurien - PRESENTATION -	Providing an accessible company Intranet for employees with disabilities C Scheepers, Group Information Technology, ABSA Bank, Johannesburg, South Africa. DJ Theron, Department of Business Management, University of Johannesburg, Johannesburg, South Africa. - PRESENTATION -
09:30 - 10:00	A Dynamic Composition of an Adaptive Course Salim Chiali, Zakaria Elberrichi, Mimoune Malki	ICT Policy and Applications Dr. Abdel Bassit Senior International Relations Expert, Ministry of Communications and Information Technology, Egypt - PRESENTATION -
10:00 - 10:30	Coffee Break	Coffee Break
10:30 - 11:00	Dynamic Pricing Control in Cellular Networks Pamela Aloo, Antony Van Wyk, Mercel Odhiambo, Ben Van Wyk - PRESENTATION -	Policy and Infrastructure Workshop

11:00 - 11:30	Development of WiMAX rural telecommunications system in Sierra Leone Steve Chandler, Donald Browne-Marke, Jonas Redwood-Sawyerr	Policy and Infrastructure Workshop
11:30 - 12:00	NetHost-Sensor: Enhancing Intrusion Detection via a Active Target Host Abiola Abimbola, Jose Munose, Bill Buchanan - PRESENTATION -	Policy and Infrastructure Workshop
12:00 - 01:30	Lunch Break	Lunch Break
01:30 - 02:00	Simulation and Comparative Analysis of DSDV and DSR Routing Protocols in MANETs Adarsh Kumar, ANIL K. Verma	IEEE Forum
02:00 - 02:30	Frequency scaling of capacity for a co-located 2.4 GHz and 5.2 GHz wideband indoor MIMO circular array system. B.T. Maharaj, MIEEEE and L.P. Linde, SMIEEEE	IEEE Forum
02:30 - 03:00	The Nuts and Bolts of VoIP Dr Johnson I Agbinya, University of Technology, Sydney - PRESENTATION / PAPER -	IEEE Forum
03:00 - 03:30	Coffee Break	Coffee Break

03:30 - 04:00	ICT for Development – A Practical Example – DRISA William Smale - PRESENTATION -	IEEE Forum
04:00 - 04:30	A Study on Addressing Digital Divide through ICT initiatives in South Africa G Subrahmanya V Radha Krishna Rao, Alfredo Terzoli, Hippolyte Muyingi, Martin T. Mandioma	IEEE Forum
19:00	Formal evening function and dinner	

	Saturday, May 20th, 2006	
	Technical Tutorials Here you can download the Programme for the Tutorial Sessions .	

9) Summary of Technical Tutorials

Dr. Jabulani and Professor Johnson Agbinya presented technical tutorials in fiber optics and voice over Internet, respectively. Abstracts of the tutorials are given below:

a) Fiber Optics 101

Dr. Jabulani Dhliwayo

Product Line Specialist – Single Mode Fiber, Corning Incorporated, Corning, New York

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dhliwayoj@corning.com

In this tutorial, attendees learnt the fundamental physics behind optical fiber and how each fiber physical attribute affects the overall performance of optical networks. Some aspects of fiber manufacturing and cabling were also reviewed. In this educational presentation, the following topics were discussed.

Why optical fiber?

- Benefits of optical fiber
- Optical fiber vs copper
- Optical fiber vs satellite

Important attributes and definitions

- Attenuation
- Dispersion
- Wavelength
- Refraction
- Numerical aperture
- Mode field diameter
- Bandwidth

How do optical fibers work?

Optical fiber types

- Single mode and multimode
- Non-dispersion shifted and dispersion shifted

Optical fiber manufacturing

- Outside vapor deposition (OVD) and the Corning manufacturing process
- Lay down
- Consolidation
- Draw
- Measurements

Optical fiber cabling and installation

- Loose tube cables
- Tight buffer cables
- Ribbon cables
- Optical ground wire
- Patch codes and jumper cables

Optical fiber applications

- Submarine
- Terrestrial long haul
- Premises
- Other applications – sensors and gyroscopes

b) Understanding and Delivering Voice over IP and Multimedia Services – From the Operators and ISP Points of View

Prof. Johnson Agbinya, Faculty of Engineering, University of Technology, Sydney, Australia

This tutorial covered the basics of voice and multimedia communications over the Internet, IP telephony and the Internet as a communication infrastructure. Voice coders (vocoders) used for VoIP are explained clearly from the implementation and deployment points of views. Evolution paths to IP networks are given. System and regulatory requirements for delivering VoIP is then covered in significant details to

avail a would-be provider and user required knowledge upon which to develop appreciation and delivery of service requirements. Protocols that support VoIP are covered including real-time protocols such as SIP, H.323, RTCP, IPv6 and IPv4. These are distinguished and the features supporting VoIP and user mobility are overviewed. Advantages of VoIP are presented in a logical manner to help a manager, technical personnel and provider a clear picture of what the service offers in terms of cost savings, revenue and bandwidth requirements; VoIP system limitations are presented to help in the selection and recommendation of suitable architectures to support VoIP. The tutorial is extended to the requirements for delivering multimedia services over an IP networks. Essential protocols and codecs are described in clear details with examples. A general overview of billing and security of IP services is given.

10) Next Conference

Next ICT Africa conference will again be held in Nairobi, Kenya in 2007. The date and venue will be determined soon. Information will be updated on the conference website: <http://www.nepadcouncil.org/ICTeAfrica2007/index.html>