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| **Oficina de Normalización de las Telecomunicaciones** | **logo_S_** |
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Ginebra, 29 de julio de 2010

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| Ref.:  Tel.: Fax: | **Circular TSB 126**  TSB Workshops/P.R.  +41 22 730 5235 +41 22 730 5853 | - A las Administraciones de los Estados Miembros de la Unión;  - A los Estados Miembros del UIT-T;  - A los Asociados del UIT-T; |
| Correo-e: | [tsbworkshops@itu.int](mailto:tsbworkshops@itu.int) | **Copia**:  - A los Presidentes y Vicepresidentes de las Comisiones de Estudio del UIT-T;  - Al Director de la Oficina de Desarrollo de las Telecomunicaciones;  - Al Director de la Oficina de Radiocomunicaciones;  - A la Misión Permanente de Rwanda en Ginebra  - Al Jefe de la Oficina Regional de la UIT para África, Addis Abeba, Etiopía |
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| Asunto: | **Seminario del UIT-T sobre Recomendaciones relacionadas con sistemas y cables de fibra óptica (Kigali, Rwanda, 6-17 de setiembre de 2010)** |

Muy Señora mía/Muy Señor mío:

1 Por amable invitación del Gobierno de Rwanda, el UIT-T y el Ministerio de Tecnologías de la Información y la Comunicación están organizando conjuntamente un "**Seminario sobre Recomendaciones relacionadas con sistemas y cables de fibra óptica**", que tendrá lugar del **6 al 17 de setiembre de 2010** en el **Hotel Gorillas**, Musanze, Rwanda, ubicado en Ruhengeri, Distritto de Musanze (parte norte de Rwanda, cerca del Parque Gorillas, a 95 km de Kigali).

2 El seminario empezará a las 09.30 horas del primer día. La inscripción de los participantes comenzará a las 08.00 horas. A la entrada del lugar de celebración se proporcionará información detallada sobre la sala de reunión, y los debates tendrán lugar únicamente en inglés.

3 La participación en el seminario está abierta a todos, pero se concederá prioridad a los países de la Comunidad del África Oriental, cuyos representantes constituyen la audiencia seleccionada del evento. Se exigirá el pago de un derecho de inscripción de 300 USD por participante, el cual se deberá efectuar mediante transferencia bancaria a más tardar el **24 de agosto de 2010** a la siguiente cuenta:

**Cuenta Nº 240-C8108400.2  
 Nombre de la cuenta: Unión Internacional de Telecomunicaciones  
 UBS SA  
 Casilla de correos 2600  
 CH-1211 Ginebra 2  
 Suiza  
 Swift: UBSWCHZH80A  
 IBAN: CH58 0024 0240 C810 8400 2**

Tenga a bien enviarnos por correo electrónico una copia escaneada de su recibo de pago a [tsbworkshops@itu.int](mailto:tsbworkshops@itu.int).

4 En este seminario, que está basado en el Manual del UIT-T "[Sistemas y cables de fibra óptica](http://www.itu.int/dms_pub/itu-t/opb/hdb/T-HDB-OUT.10-2009-1-PDF-E.pdf)" y destinado a ayudar a los ingenieros, técnicos, tecnólogos directivos de nivel medio y reguladores en la implementación de sistemas basados en fibras ópticas, se proporcionará un panorama detallado de las Recomendaciones del UIT-T que han configurado las redes de transporte ópticas en todo el mundo.

Los participantes podrán comprender mejor las Recomendaciones, así como el diseño y la ejecución de proyectos, y la manera de tomar decisiones adecuadas en las diversas partes de un enlace óptico. Asimismo, los participantes aprenderán a evaluar un balance de potencia, a elegir interfaces y accesorios y a definir los parámetros fundamentales con miras a la preparación de las especificaciones técnicas y administrativas necesarias para concertar contratos o RFP.

5 El **anexo 1** contiene un proyecto del programa del seminario. El programa actualizado y la información pertinente se pondrán a disposición en el sitio electrónico del UIT-T en la siguiente dirección: <http://www.itu.int/ITU-T/worksem/optical-fibre/201009/index.html>

6 Se adjunta en el **anexo 2** información práctica relacionada con el evento.

7 **Alojamiento**: El hotel designado es el [**Gorillas Hotel**](http://www.gorillashotels.com/), Musanze, Rwanda. Se pide a los delegados que reserven sus habitaciones directamente en **Central reservations, Gorillas Hotels Group, Teléfono: +252 501 717 o +252 501 718; Fax: +252 501 716; Móvil: +250 788 487 777; Correo-e:** [**gorillashotel@rwanda1.com**](mailto:gorillashotel@rwanda1.com)**; o** [**book@gorillashotels.com**](mailto:book@gorillashotels.com).

La administración anfitriona se encargará del transporte desde el aeropuerto al hotel designado, que también es el lugar de celebración de la reunión. Para garantizar su transferencia, se solicita a los delegados que proporcionen toda la información relativa al viaje, con inclusión del número de vuelo, las fechas y horas de llegada y partida, completando y enviando el **Formulario informativo de los delegados que figura en el anexo 3, a más tardar el 31 de agosto de 2010. *(Al enviar correos electrónicos tenga a bien utilizar todas las direcciones electrónicas, para asegurarse de que éste llega al destinatario.)***

8 **Inscripción**: Para que la TSB pueda tomar las disposiciones necesarias en relación con la organización del seminario, mucho le agradecería que se inscriba utilizando el formulario en línea en <http://www.itu.int/ITU-T/worksem/optical-fibre/201009/index.html> **lo antes posible, pero a más tardar el 31 de agosto de 2010. Tenga a bien tomar nota de que la preinscripción de los participantes en el seminario sólo se puede realizar *en línea.***

9 Le informamos asimismo que los ciudadanos de algunos países pueden necesitar un visado para entrar en Rwanda. Si ese es su caso, podrá solicitar el visado en la Embajada o Consulado de su país. La dirección electrónica [**www.migration.gov.rw**](http://www.migration.gov.rw) contiene información detallada sobre los requisitos de visado.

Le saluda muy atentamente.

Malcom Johnson  
Director de la Oficina de Normalización  
de las Telecomunicaciones

**Anexos**: 3

**ANNEX 1**

(to TSB Circular 126)

**ITU-T Tutorial on Optical Fibres Cables and Systems Recommendations**

**(Kigali, Rwanda, 6-17 September 2010)**

**Draft Programme**

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| **Time** | **Subjects** | **Objectives** |
| **Week 1** |  |  |
| Monday | Introduction on the ITU-T and on the objectives / structure of the Tutorial | It is an overview of the ITU, its Sectors and an introduction to ITU-T SG15, to the Handbook and to the structure of the Tutorial |
| Monday | Optical fibres characteristics ( Note. Test methods are outside the scope of the Handbook. Moreover the description of the test methods (G.650.1, G.650.2, G.650.3) requires an advance knowledge of mathematics) | This session will provide the participants with the description of the dimensional, optical, mechanical and transmission characteristics of the optical fibres. The ITU-T types of optical fibres will be described. This will give the elements to choose the type of fibre that best meets the needs of an optical plant based on the services and systems requirements. |
| Tuesday | General characteristics of optical cables | The optical cables must protect fibres from mechanical, chemical and human activities. In particular the structure of optical cables is to be designed to protect fibres to withstand the environment where the cable has to be installed: aerial, ducts, underground, shallow water, submarine. |
| Wednesday | Optical cables installation [ Note. Test methods are outside the scope of the Handbook.] | The installation is linked to the session before. Specific techniques, such as underground ducts, trenchless techniques, mini-trench, micro-trench, aerial, tunnels, bridges, along railways, in sewer ducts, shallow water and submarine, will be analysed. |
| Thursday | Optical splices, connectors and passive nodes [ Note. Test methods are outside the scope of the Handbook.] | Fibres and cables are produced according to factory lengths that need to be jointed in order to realize the optical links. This session will provide a description of the best techniques for the interconnection of the optical fibres and in particular the optical fibre splices, optical connectors, optical distribution frames, fibre closures, fibre organizers, etc. All these elements are necessary to guarantee an optimized transmission of the optical signal along the fibre. |
| Friday | Optical active and passive components / subsystems | There are various passive and active components in an optical/plant: optical transmitters, optical receivers, optical amplifiers, chromatic dispersion compensators, regenerators, transponders, etc. This session will provide the description of these components, will outline how they are used in the optical systems / plants and will indicate the criteria for their choice. |

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| **Week 2** |  |  |
| Monday | General characteristics of optical systems and their specification | This part of the tutorial is of fundamental importance. Knowing the characteristics of the optical systems will give the participants the skills they need to make the right choice of equipment which are specified on the basis of applications, optical fibres, number of channels, wavelength of operation, future needs for new services, etc. |
| Tuesday | Optical systems design | In this part there is the description of the various approaches which can be followed for the design of the optical systems. Moreover the impact of the various impairments on the length of the links and on their capacity are evaluated. The main elements necessary for the design of an optical system will be given |
| Wednesday | Optical systems applications | Ability to design an optical plant for a specific application will depend on the knowledge of the subjects dealt with in all the previous sessions. An optical system design based on a given Quality of Service and on a given life-time is a “must” for any engineer in order to choose the best optical system for each application in their network and for the needs of his country. Some information on submarine systems will be also provided |
| Thursday | B- and G-PONs - xDSL,  Passive Optical Networks, Broadband PON, Gigabit-PON, Digital Subscriber Lines, Wireless broadband. | This part will complete the training showing, from a general point of view, the user-side (last-mile) of a plant/system. This is the part closer to the end-users and to the needs of the service providers. The various techniques that are presently used will be described together with their advantages and drawbacks both for wired and wireless networks. |
| Friday | Operation & Maintenance, safety and environmental aspects | Operation and maintenance are elements that the engineers have to learn in order to take actions to limit the effects of systems failures or low performance. |

**ANNEX 2**

(to TSB Circular 126)

**ITU-T Tutorial on Optical Fibres Cables and Systems Recommendations**

**(Kigali, Rwanda, 6-17 September 2010)**

## Practical Information

1. **Meeting venue**

**The ITU-T Tutorial on Optical Fibres Cables and Systems Recommendations** will take place from **6 – 17 September 2010** at [**the** [**Gorillas Hotel**](http://www.gorillashotels.com/), Musanze, Rwanda,](http://www.ichotelsgroup.com/intercontinental/en/gb/locations/nairobi)  located at: {Ruhengeri, Musanze District (Northern part of Rwanda near gorillas park, 95 km from Kigali)

Central reservations :

Gorillas Hotels Group

P.O. Box 1782 Kigali,

Telephone : +252 501 717; +252 501 718;

Fax: +252 501 716

Mob: +250 788 487 777

Email: [gorillashotel@rwanda1.com](mailto:gorillashotel@rwanda1.com); or [book@gorillashotels.com](mailto:book@gorillashotels.com)

**Website:** [**www.gorillashotels.com**](http://www.gorillashotels.com)

1. **Hotel Accommodation**

[Gorillas Hotel](http://www.gorillashotels.com/), Musanze

1. **Visa**

**For visa requirements, consult** [**www.migration.gov.rw**](http://www.migration.gov.rw)

1. **Travel and airport transfers**

Participants are responsible for making their travel arrangements. Delegates are requested to provide all travel information, including flight number, arrival and departure dates and times by completing and returning by **31 August 2010** the attached Delegate Information Form to

**Ministry in the Office of the President in charge of ICT**

**PO Box 15 KIGALI**

**Email:** [**amakuza@presidendency.gov.rw**](mailto:amakuza@presidendency.gov.rw)

[**abusingye@presidency.gov.rw**](mailto:abusingye@presidency.gov.rw)

[**rkirabo@presidency.gov.rw**](mailto:rkirabo@presidency.gov.rw)

Transport will be provided to delegates:

1. On arrival and departure from the Kanombe International Airport.
2. From the designated/recommended hotel to the venue.
3. During the various social events organized for the delegates.

Note: Delegates are advised to look out for paging boards or signage with the name of the meeting. Due to the number of delegates expected, the local host may not prepare signage for each individual delegate arriving.

1. **Climate**

Rwanda has tropical climate and the average temperatures in September vary between 12°C - 27°C during the day and fall to 10°C at night.

1. **Local time**

GMT+2

1. **Currency, banks and credit cards**

The unit of currency is the Rwandan Francs.

The indicative exchange rate, as of 20th March 2010, is:

1USD = 580 - 590 FRW

* Major international credit cards are widely accepted for transactions.
* Banks are open from 08.00am to 08.00pm Monday through Friday, and to 12 noon on Saturday
* Forex Bureaux located in different parts of the city are open from 08:00hrs to 09.00 pm Monday through Friday.

1. **Vaccination**

Yellow fever vaccination is usually required by Health authorities on arrival.

**9. Electricity**

220V/50hz

Wall round sockets with or without earth pins

**HOST COUNTRY CONTACT:**

**Mr. Abraham MAKUZA**

**Senior Expert in charge of ICT Infrastructure and Regulation**

**Ministry in the Office of the President In charge of ICT**

**P.O box 15**

**KIGALI**

**Email:** [**amakuza@presidency.gov.rw**](mailto:amakuza@presidency.gov.rw)

**Tel: + 250788 835 52**

**Ms Alice BUSINGYE**

**ICT Partnership Coordinator**

**Ministry in the Office of the President In charge of ICT**

**P.O box 15**

**KIGALI**

**Email:** [**abusingye@presidency.gov.rw**](mailto:abusingye@presidency.gov.rw)

**Tel: +250 788 303 954**

**ANNEX 3**

(to TSB Circular 126)

**ITU-T Tutorial on Optical Fibres Cables and Systems Recommendations  
 (Kigali, Rwanda – 6 – 17 September 2010)**

DELEGATE INFORMATION FORM

**MEETING VENUE:**[**Gorillas Hotel**](http://www.gorillashotels.com/)**, Musanze, Rwanda**located at: Ruhengeri, Musanze District (Northern part of Rwanda near gorillas park,   
95 km from Kigali)

**Country** …………………………………………………………….…………

**Name of delegate** …………………………………………………………….

**Title**………………………………………………………………………………

**Organization**…………………………………………………………………..

**Email and Tel. contacts**:………………………………………………………

**Date of Arrival/Flight number**…………………………………………….

**Date of Departure/Flight number**………………………………………..

# Signature………………..……………………………………………………..

**Please return by 31st August 2010**  **to:**

**Ministry in the Office of the President in charge of ICT, PO Box 15 Kigali, Rwanda**

**Email:** [**amakuza@presidendency.gov.rw**](mailto:amakuza@presidendency.gov.rw)

[**abusingye@presidency.gov.rw**](mailto:abusingye@presidency.gov.rw)

[**rkirabo@presidency.gov.rw**](mailto:rkirabo@presidency.gov.rw)