



**Telecommunication
Development Bureau (BDT)**

Ref. BDT/PKM/HCB/DM-469

Geneva, 18 August 2014

ITU Member States, Regulators and ITU-D
Sector Members in the Arab Region

Subject: **ITU/ITSO VSAT and Satellite Systems Training Workshop
Cairo, Egypt - 21 to 25 September 2014**

Dear Sir/Madam,

On behalf of the International Telecommunication Union (ITU), I am pleased to invite you to participate in the training workshop on **“VSAT and Satellite Systems”** for Arab countries to be held in **Cairo, Egypt, from 21 to 25 September 2014** at the kind invitation of the Republic of Egypt. The training workshop will be hosted by the National Telecommunications Regulatory Authority (NTRA).

The workshop is part of a capacity building partnership entered into between the ITU and the International Telecommunications Satellite Organization (ITSO) for the delivery of satellite communications training. It will be delivered by experts from ITSO and ITU and will be conducted in English only.

This workshop will target practicing engineers and information technologists as well as managers and employees from regulators, government institutions, and telecommunication companies, who are interested in acquiring a technical understanding of VSAT and Satellite systems and detailed knowledge of current systems design.

The objective of the ITU/ITSO Workshop on VSAT and Satellite Systems is to provide participants with in-depth understanding of Satellite systems and protocols to include VSAT concepts, satellite communications systems, technologies and protocols. This will assist participants to understand and assess VSAT systems and their deployment within corporate wide area networks. It will cover a wide range of issues relating to satellite communications, and regulatory issues, including the role of the regional and international satellite communications organizations.

A draft programme is attached. In order to benefit from each other’s experience, participants are invited to prepare and present case studies during the workshop.

If you wish to participate in this workshop, please complete the Registration Form that can be found on the ITU Academy Portal at <http://academy.itu.int/component/k2/item/1567>. Additional information on the meeting venue and hotel accommodation is also available on this website.

Should you require any further information, Eng. Mustafa Al Mahdi, ITU Arab Regional Office Representative (mustafa-ahmed.al-mahdi@itu.int) and Ms. Samar Sobeih (samars@tra.gov.eg), International Relations Dep., National Telecommunications Regulatory Authority (NTRA) of Egypt are at your full disposal.

I look forward to your active participation in this training workshop.

Yours faithfully,



Brahima Sanou
Director

Annex: draft programme

Cc: Ebrahim Alhaddad, Head, Regional Office for the Arab Region



**ITU Centre of Excellence Workshop
On "VSAT and Satellite Systems"
For Arab Countries**



Cairo, Egypt, 21 - 25 September 2014

DAY 1

9:00 AM - 10:30 AM	1. Basics of satellite communications	
	1.1 Birth of satellite communications	
	1.2 Development of satellite communications	
	1.3 Configuration of a satellite communications service	
	1.3.1 Communications links	
	1.3.2 The space segment	
	1.3.3 The ground segment	
	1.4 Types of orbits	
	1.5 Orbital positions and radio interferences	
	1.6 Types of antennas	
	1.7 Antenna performance measures	
	1.7.1 Gain	
	1.7.2 Radiation pattern and angular beam width	
	1.7.3 Polarization	
	HEALTH BREAK	
11:00 AM - 1:00 PM	1.8 RF equipments	
	1.8.1 BUC	
	1.8.2 LNB	
	1.8.3 Transceivers, Filters, Waveguides and Coaxial cables	
	1.8.4 Couplers, combiners and dividers	
	1.9 Earth station measurements	
	1.10 Services	
	1.11 Modulation Techniques	
	LUNCH BREAK	
2:00 PM - 4:00 PM	2. Policy and regulatory guidelines for satellite services	
	2.1 Radio regulations organizations	
	2.2 Satellite policy principles	
	2.2.1 Non Discriminatory Market Entry	
	2.2.2 Open borders for competitive access	
	2.2.3 Transparency of telecommunications rules and policies	
	2.2.4 Content neutral regulations	
	2.2.5 Technology neutral regulations and licensing requirements	
	DAY 2	
9:00 AM -10:30 AM	Policy and regulatory guidelines for satellite services (Cont'd)	
	2.3 Legal framework of satellite communications	
	2.4 Key regulatory and licensing trends	
	2.4.1 Space segment	
	2.4.2 Ground segment	

	2.4.3 Establishing appropriate fees	
	2.4.4 Enforcement	
	2.5 Means of monitoring and controlling the spectrum	
	BREAK	
11:30 AM-1:00 PM	3. Network planning	
	3.1 VSAT Network topologies	
	3.1.1 Point to point links	
	3.1.2 Star networks	
	3.1.3 Mesh networks	
	3.1.4 Broadcast	
	3.1.5 Hybrid networks	
	3.2 Access schemes	
	3.2.1 SCPC	
	3.2.2 TDMA	
	3.3.3 FDMA	
	BREAK	
2:00 PM-4:00 PM	3.3 Frequency bands	
	3.3.1 C-Band	
	3.3.2 Ku-Band	
	3.3.3 Ka Band	
	3.4 Base band signals	
	3.5 Digital communications techniques	
DAY 3		
	4. Link Budget analysis; Satellite Technology Trends	
9:00 AM -10:30 AM	4.1 Link budget Analysis	
	4.2 Satellite Technology Trends	
	HEALTH BREAK	
11:00 AM-1.00 PM	5. VSAT installation and maintenance	
	5.1 VSAT Installation	
	5.1.1 Site survey and preparation	
	5.1.2 Calculating, measuring and working with a clear line of sight azimuth and elevation	
	5.1.3 Equipment assembly and configuration parameters	
	LUNCH BREAK	
2:00 PM-4.00 PM	5.1.4 Grounding and lightening protection	
	5.1.5 Using a spectrum analyzer	
	5.1.6 Align the antenna to the satellite	
	5.1.7 Commissioning the service with the satellite provider	
	5.1.8 User Acceptance tests	
	5.2 VSAT Maintenance	
	5.2.1 Preventive Maintenance actions	
	5.2.2 Troubleshooting and incident resolution	
	5.2.3 Service Level Agreements	
DAY 4		
9:00 AM- 10:30 AM	6. Analog TV to DTT migration	
	HEALTH BREAK	

11:00 AM-11.30 AM	7. WRC 15 Key satellite issues	
11.30 AM-01.00 PM	8. VSAT equipment and bandwidth procurement	
	8.1 Define your needs	
	8.1.1 Business requirements	
	8.1.2 Bandwidth requirements	
LUNCH BREAK		
2:00 PM-4:00 PM	8.1.3 Technical considerations	
	8.2 Acquire the VSAT	
	8.2.1 Procurement approaches and strategies	
	8.2.2 Prepare bids and inviting proposals	
	8.2.3 Evaluating proposals	
	8.2.4 Negotiate and award the contract	
DAY 5		
9:00 AM-10.30 AM	9. ITU-Radio Regulations	
	9.1 Overview	
	9.2 Orbit spectrum- International Regulatory framework	
	9.3 Space FSS and BSS plans	
	9.3.1 Broadcasting-Satellite Service Plans (Appendices 30 & 30A)	
	9.3.2 Fixed-Satellite Service Plans (Appendix 30B)	
	9.4 Non-Planned Satellite Services (Coordination and Notification)	
HEALTH BREAK		
11:00 AM-1.00 PM	9.5 Receivability of space notices	
	9.6 Notification and recording of assignments	
	9.7 BR Space Software and Databases	
	9.8 Submission of comments using SpaceCOM	
LUNCH BREAK		
2:00 PM-5.00 PM	9.9 BR IFIC on DVD-ROM, Space website, Preface	
	9.10 SpaceWisc	
	9.11 Earth Station Coordination and Tools	
	9.12 Capture, Validation, and Submission of Earth Stations	
	9.13 WRC-15 and WRC-18 preparation	
END		