ANNEX 1

Satellite communications training course for earth station operators and engineers in Telecommunication Sector for English Speaking countries in Africa.

Kampala , Uganda 18-22 octore 2010

PROGRAM

This would be a technical course intended for Vsat operators, technicians and engineers to help them come up to speed with most of the technical concepts and practices.

18-10-2010	**8h30 – 15h30**	**DAY 1** 1) Satellite Technology: Satellites fundamentals, Orbits, Satellite design, Operation, Life Cycle Management, Tracking Telemetry and Control (TTCM)
19-10-2010	**8h30 – 15h30**	**DAY 2** 2) Earth Station Technology: • Types of Antennas (TVROs, Tx/Rx, Tracking), Antenna performance measures (G/T, Isolation, Transmit Sidelobes, Gain), Antenna Feeds, Antenna Tracking • RF Equipment: BUC, LNBs, Transceivers, Filters, Modems, Waveguides and Coax, Couplers, Combiners and Dividers, Beacon Receivers • Earth Station Measurements: Spectrum Analysers, Power meters, dBM, dBW, EIRP, db

20-10-2010	**8h30 – 15h30**	**Day 3 (AM)** Transmission and Network Planning: Digital Technology: Modulation schemes, Voice and Video Compression, VoIP, Introduction to IP technology Frequency Band Planning: C vs. Ku, Extended band operation Network design: Types of Network and their Parameters: Cellular backhaul, corporate networks- Star, Mesh, IP Trunking, SCPC links, DVB links, Video Distribution and Contribution networks 4) Link Budget Analysis and Design: Input parameters, Link analysis tools, Eb/No, C/N, link availability, Performance margins
21-10-2010	**8h30 – 15h30**	Day 4 Vsat Installation, Maintenance

22-10-2010	**8h30 – 14h30**	**Day 5 (AM)** 6) Audit Vsat maintenance Periodic and Corrective Maintenance activities checklist, covering control tasks follow-up pending actions, namely through external suppliers (if applicable), as follow: Maintenance Actions schedule • Hardware swap • Local configurations • Troubleshooting and Debugging • Incident reporting • ETA and ETTR concepts and external suppliers control • Spares management • Escalation procedures and lists • Periodic Maintenance actions Control • SLA Day 5 (PM) 7) Regulatory Factors: Licensing, orbital slot registration and ownership, Frequency Registration, Intersystem Coordination, Earth Station and Vsat Registration- best practices, Wimax and other terrestrial interference issues