

Photos: Past VSAT Training Sessions hosted by AeRC



VSAT

FIELD ENGINEERING TRAINING COURSE

A theoretical and practical skills transfer event for field engineers, support engineers and operational managers as applicable to DVB/TDMA VSAT networks, organized by Africa eDevelopment Research Centre in association with 3Triple Play.

THEORY & BACKGROUND

NETWORK ARCHITECTURE

- Architecture defined
- Star networks
- Mesh networks
- Application references

NETWORK CONCEPTS

- **Bandwidth:**
 - ✓ MHz vs. Mbps.
 - ✓ Speed vs. throughput
- **Links budget basics:**
 - ✓ What?
 - ✓ Why?

EQUIPMENT TERMINOLOGY

- **Remote site components:**
 - ✓ Antenna, dish?
 - ✓ BUC, block-up convertor
 - ✓ LNB, Radio, Modem
- **Operating Frequencies**
 - ✓ Ku-band
 - ✓ C-band
 - ✓ Ka-band

SIGNAL TRANSMISSION

- ✓ DVB
- ✓ TDMA

IMPLEMENTATION

SITE SURVEY

- Location & look angles
- Infrastructure

SITE BUILD

- Minimum antenna mount
- Requirements Lightning protection
- Cable routing
- Peak & poll: Why? What? How?

TEST EQUIPMENT

- **Theory & hands-on:**
 - ✓ The field strength meter
 - ✓ The GPS
 - ✓ the compass
 - ✓ what do we measure?
 - ✓ how do we measure?

SERVICE COMMISSIONING

- what does it mean?
- why is it needed?
- how do we do it?
- what can go wrong?

CLIENT COMMUNICATION

- Client communication
- Site hand-over

PRACTICAL TRAINING

COMPLETE INSTALLATIONS

- All participants will complete one complete installation
- Installations will be done on an active & operational network
- All will provide sufficient time for hands-on experience

TEST EQUIPMENT

- Inclinator
- Compass
- GPS
- Field strength meter
- Selection and training with respect to PAS1R, PAS10, NSS 7 satellites

INSTALLATION

- Physical site installation
- Antenna built (1.2m)
- Peak & poll
- Signal strength monitoring
- Site commissioning with an operational NOC group
- Commissioning & hand-over





PRECISION INSTRUMENTS FOR ACCOMPLISHED ENGINEERS

Quality of workmanship, field engineering and system performance are determined by the skills and expertise of the engineer but no engineer can perform precision works without precision instruments. The course will also cover the following instruments:

UnaOhm SBM105C Satellite Analog Digital Signal Analyser

The SBM105 analyses the quality of satellite receive signals and offers all measurements required by digital communication channels. It also offers level measurement of analog signals as well as spectral analysis of the band.

SMARTTool

Precision level meter for setting and alignment of antenna to ensure optimum signal strength and maximum system reliability.

SUUNTO Bearing Compass & Clinometer

The Suunto Tandem is a liquid-filled precision compass and clinometer in one compact aluminum housing that is easy to use and rugged enough to protect against impact, corrosion and water.

GARMIN's eTrex Personal Navigator

This compact, easy-to-operate GPS is perfect for measuring and recording of location coordinates with the accuracy required for VSAT network control systems.

Handheld Tools

The perfect set of handheld tools to ensure that you have the correct tool for every need while at the same time being lightweight and convenient to carry under all circumstances. All of which are supplied in an easy and convenient canvas bag.

COURSE DESIGNER



Piet Retief

Joined the telecommunication industry in 1984 and remained there for the following twenty plus years till 2008. Specializing in the maintenance and installation of high speed long and short-haul telecommunication equipment which entailed utilizing all the mediums available for the transmission of such data being wired, wireless or hybrid network infrastructure.

During this period he also developed a VSAT course for the company which he also presented throughout Africa.