1. Course Title

NATO Very Small Aperture Terminal (VSAT) Operator for Afghan National Defense and Security Forces (ANDSF)

2. Identification Number (ID)

053

3. Purpose of the Course

To provide Afghan National Defense and Security Forces (ANDSF) personnel with knowledge and skills to
- install and operate a VSAT SATCOM terminals;
- perform limited preventive maintenance on the VSAT terminals. Repair actions are limited to the replacement of the Lowest Replaceable Unit (LRU) sub-assembly.

4. Learning Objectives

Upon completion of the course, the qualified student will be able to:
- Deploy, teardown and operate the VSAT Spoke terminal designated for operations and exercises.
- Perform basic activity to check the performances of the VSAT systems.
- Maintain operational the VSAT systems to ensure Satellite communications.

5. Qualification

NATO SATCOM VSAT Operator for ANDSF

6. Student Criteria

1. Been identified by NATO and assigned to a ANDSF or NATO or National Signal Establishment with the role of technician or operator,
2. Have met the Background Knowledge Prerequisites,
3. Have successfully completed a national military or civilian course on basic electronics,
4. Have completed the pre-course study material (see item 16: Student has to complete the SATCOM basics (ID 601) course (pre-course study material) at https://jadl.act.nato.int/. There will be an Exam on arrival questions are taken from the above on-line training)
7. Rank

- Officers
- NCO’s
- Civilian technicians and engineers

8. Language Proficiency

Language Proficiency according to STANAG 6001: English SLP 3232 and a detailed knowledge of the applicable English electronic terminology.

9. Security Clearance

NATO Restricted

10. Course Length

5 working days

11. Special Instructions

12. Class Size
- Maximum
- Recommended
- Minimum

6/6/3

13. Nomination Procedures

See joining instructions and nomination procedure on www.nciss.nato.int

14. Pre-course Study Material

Student has to complete the SATCOM basics (ID 601) course at https://jadl.act.nato.int/ There will be an Exam on arrival questions are taken from the above on-line training.

15. Location

The course is conducted at the NATO Communications and Information Systems School (NCISS), Latina Italy or other locations to be defined.
16. Background Knowledge Prerequisites

Completion of the ADL Course ID 601- SATCOM Basics Ver 3.0 is mandatory

I. BASIC MATHEMATICS
1. Simple algebraic equations, functions exponential & logarithms.
2. Decibel Notation (dB, dBW & dBm).

II. THEORETICAL KNOWLEDGE BY TECHNICAL SUBJECT
A. ELECTRICITY
1. Direct Current (DC) - Ohm's law.
2. Alternate Current (AC) - Wave shapes, Peak Values, rms Values.
3. DC/AC power – Impedance.

B. ELECTRONICS
1. Passive components (resistors, capacitors, inductors) fixed and variable.
2. Operational and Solid State Power Amplifiers (SSPA).
3. UPS.

C. TELECOMMUNICATIONS - PRINCIPLES AND TECHNIQUES.
1. RF basics.
2. Multiplexing basics (TDM, FDM).
3. Modulation – BPSK, QPSK and 8PSK.
4. Error detection / correction techniques

D. READING AND INTERPRETING ELECTRONIC / ELECTRICAL CIRCUITS AND INTERCONNECTION DIAGRAMS.

E. PRACTICAL EXPERIENCE BY FIELD OF ACTIVITIES - USE OF TEST EQUIPMENT.
1. Digital Multi-meter.
2. Oscilloscope.
3. Digital Data Tester & Data generator - Analyser.
5. Spectrum Analyser.
6. Earth resistance measurements.
F. PRACTICAL EXPERIENCE BY FIELD OF ACTIVITIES - USE OF TEST EQUIPMENT.

III. Basic Communication Systems (e.g. SATCOM, VHF-UHF, HF, LOS)

17. Modules

N/A