1. Course Title

Upgraded Transportable Satellite Ground Terminal (UTSGT) Operator.

2. Identification Number (ID)

047

3. Purpose of the Course

To provide military and civilian personnel with knowledge and skills to operate the Upgraded TSGT system.

4. Learning Objectives

Upon completion of the course, the qualified student will be able to:

- Deploy, teardown and operate the NATO UTSGT terminal as designated for operations and exercises.
- Perform basic activity to check the performances of the system
- Maintain operational the UTSGT System to ensure Satellite communications.
- UTSGT manual satellite search

5. Qualification

NATO SATCOM UTSGT Operator

6. Student Criteria

1. Been assigned to a NATO or National Signal Establishment with the role of technician or Operator,
2. Have met the Background Knowledge Prerequisites (see item 16: 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).
3. Knowledge of the general safety procedures for working with hazardous voltages.

7. Rank
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 CONFIDENTIAL (minimum)

10. Course Length

5 working days

11. Special Instructions

Homework and self-study will be requested to the students. Internet access will be granted since SATCOM Basic and other study material are online.

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.
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. Trigonometry (sine, cosine, tangent & graphical representation).
4. Decibel Notation (dB, dBW & dBm).
5. Basic knowledge of BOOLEAN ALGEBRA.

II. THEORETICAL KNOWLEDGE BY TECHNICAL SUBJECT

A. ELECTRICITY

1. Direct Current (DC) - Ohm’s law - Kirchhoff’s laws. Units of measurements for voltage, current & resistance.
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.
5. Antenna and propagation basics.

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

E. PRACTICAL EXPERIENCE BY FIELD OF ACTIVITIES - USE OF TEST EQUIPMENT.

1. Analog and Digital Multi-meter.
2. Oscilloscope.
3. Digital Data Tester & Data generator - Analyser.
5. Spectrum Analyser and Sweep generator.
6. Microwave Power Meter.
7. Earth resistance measurements.

17. Modules
N/A