1. Course Title
NATO LINC-E X-Band Deployable Satellite Ground Terminal (DSGT) Operator

2. Identification Number (ID)
903

3. Purpose of the Course
To provide military and civilian personnel with knowledge and skills to
a. install and operate a DSGT as a standalone SATCOM terminal;
b. integrate the DSGT with the LINC-E Systems;
c. perform limited preventive maintenance on the DSGT. 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:
• Set-up the NATO Deployable Satellite Ground Terminal (DSGT)
• Acquire satellite
• Configure and operate the DSGT equipment
• Perform basic preventive maintenance on the NATO Deployable Satellite Ground Terminal
• Integrate the DSGT System with the LINC-E System and perform basic test.

5. Qualification
NATO LINC-E DSGT 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 (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)
3. Have successfully completed a national military or civilian course on basic electronics,
4. Have completed the pre-course study material.
5. Have knowledge of the general safety procedures for working with hazardous voltages.

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 SECRET (minimum)

10. Course Length
10 working days in parallel with the LINC-E IS Administrator (901) and LINC-E Comms Technician (902) modules.

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. 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. USE OF TEST EQUIPMENT.**
1. Digital Multi-meter.
2. Digital Data Tester & Data generator - Analyser.
4. Earth resistance measurements.

**F. PRACTICAL EXPERIENCE BY FIELD OF ACTIVITIES.**
1. Minimum 2 months basic experience on communication systems (e.g. SATCOM, VHF-UHF, HF, LOS).

**17. Modules**
N/A