



# TELECOM

## TRAINING SERVICES

218 AGCR Enclave  
Opp. Karkardoma Courts  
Delhi 110092  
INDIA  
Near Karkarduma Metro Station  
Cell: +919811841782  
[www.telecomtraining.in](http://www.telecomtraining.in)

### TRAINING COURSE ON AVIATION CNS ATM – FANS

**DURATION : 10 DAYS**

Telecom technologies are penetrating all businesses including the backbone of Aviation Sector. ***Apart from generating investment opportunities, the new telecommunications based Communication Navigation & Surveillance (CNS ATM) systems can explore various job opportunities for young aviation and telecom engineers worldwide. We need to train aviation engineers, airline personnel, aviation authorities the technologies of telecommunications. Vice versa is also true, as telecom engineers need to be trained in aviation technologies. Surely, we are heading towards the convergence of Aviation and Telecom Sectors.***

CNS technologies and ATM procedures are evolving in many important ways. Aviation professionals need to understand emerging CNS technologies and associated ATM improvements and learn how they impact airport and airspace operations.





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### Course Description

This course builds upon the Introduction to Air Traffic Management, and describes specific CNS technologies including air-ground, ground-ground communications; ground-based and satellite-based navigation and surveillance. The discussion of today's systems also includes ATC automation, airspace management, and air traffic management technologies and procedures. This course acknowledges the need to improve all of these technologies and procedures, and it examines modernization and enhancements for the near future, including Performance-based Air Traffic Management and Area Navigation/Required Navigation Performance (RNAV/RNP) implementation.





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Next Generation Air Transportation System

# NGATS



SINCE 1990



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### **Module 1** *Familiarization with Telecom Technologies*

#### **Overview of Telecom Infrastructures**

### **Module 2**

#### **Assessment & Evaluation of various Telecom Technologies in Aviation**

### **Module 3**

#### **Introduction to Next Generation Air Transport Systems**

### **Module 4**

#### **Understanding Future Air Navigation System ( FANS )**

- **Free Flight,**
- **Evolution of FANS Capabilities,**





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- Emerging Navigation & Landing Systems,
- Emerging Surveillance Systems – Automatic Dependant Surveillance (ADS – C & ADS - B),
- Emerging Communication Systems – SATCOMB & Datalink Services,
- Next Generation Avionics, Information Sharing among Components,
- Air Traffic Management (ATM) - Traffic Flow Management (TFM),
- Evolution of Enroute Flight Architecture,
- Evolution of Oceanic Flight Architecture,
- Terminal Architecture, Air Traffic Control & Tower Facilities,
- Flight Services Architecture, Weather Information Services,
- Overall Aviation Infrastructure Management Airport Operations,
- Components of Air Traffic Management & Gate – To – Gate Scenarios

### Module 5

#### Aeronautical Telecommunication Network ( ATN )





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The module covers OSI reference model for ATN, Concept of Aeronautical Internet, ACARS Protocol, ATN Concept and Infrastructure, ATN Layers, IPv4 & IPv6 Protocols, Air Traffic Management (ATM) Applications over ATN, Airline Operational Communications (AOC), Airline Administrative Communications (ADC), Airline Passenger Communications, Unicast & Broadcast Requirement Sets, Details of Controller – Pilot Datalink Communications (CPDLC).

### Module 6

#### Detailed Architecture of Communication Navigation & Surveillance – Air Traffic Management Systems ( CNS ATM )

- **CNS ATM Functional Blocks**
- **Airborne CNS ATM Components**
- **Aeronautical Environment Processing**
- **ATFM**
- **Surveillance**
- **Flight Data Processing**
- **ATC Tools**
- **Communications Blocks**
- **Navigation Blocks**
- **CNS ATM Support**
- **Airspace Management**





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### Module 7

#### Airspace Structure, Planning, Redesign & Management

- Characterize Problem
- Perform Initial Evaluation
- Initiate Airspace Study
- Conduct Airspace Study
- Summarize Results
- Select Airspace Change
- Plan Implementation at Field
- Evaluate after Implementation
- Case Study
- Integrate with Air Traffic Management ( ATM )



**Developing Careers in Telecom  
Since 1996**



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### Module 8

#### Understanding Performance Based Navigation ( PBN )

- Description of PBN
- Airspace Concepts
- Non RNAV & RNAV Procedure Design
- Stakeholder uses of PBN
- Implementation guidance

### Module 9

#### Global CNS ATM / FANS Plans & Strategies

Additional Coverage on GPS, Galileo, Global Navigation Satellite Systems (GNSS)





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### CONTACT FOR REGISTRATION

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