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## WTM 4000 Installation, Operation and Maintenance

TRN-WTM4K-IOM-A/B/C/D

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### Course Specifics

Duration:	2 days
Class capacity:	10 students
Materials provided:	Instruction and user Manuals (USB) Student Handbook (e-Book) Datasheets (USB)



### Course Description

The WTM 4000 is the industry's first microwave router. It is a fully integrated microwave networking solution, delivering a unique combination of high capacity all-packet transport, Carrier Ethernet, IP/MPLS and PWE services and comprehensive mission critical microwave features. The WTM 4000 is purpose-built for microwave, enabling operators to prepare for the all-IP future.

**The WTM 4000 Installation, Operation and Maintenance** course teaches students key functions of the WTM 4000 platform. The course includes an overview of all available modules and the chassis, initial setup, install and login, basic configuration with the CLI, system commissioning, configuration, diagnostics, maintenance and troubleshooting. Extensive hands-on labs (nearly 50% of the course duration) and case studies offer students with scenarios they will face in real deployments in their networks.

Courses are conducted by **AVIAT expert trainers** in a mentoring environment backed by their deep technology expertise and experience in implementation of microwave wireless and IP networks.

The WTM 4000 Installation, Operation and Maintenance course is conducted at the Aviat Training locations or can be arranged at customer sites.

### Target Audience

This course is intended for installation and service personnel responsible for installation, configuration, test and maintenance procedures for the WTM 4000 product.

### Prerequisites

1. Participants must complete WTM 4000 System Overview E-Learning course.
2. Participants should have a basic understanding of Microwave and IP Fundamentals and have basic computer skills.
3. Each student must bring an IBM compatible laptop PC or an equivalent and have administrator rights on the PC.

The PC must have minimum parameters of:

- Pentium 4 or later w/ 1GB of RAM and 250 Mb of free hard drive space
- Microsoft Windows XP, Vista, Windows 7, or Windows 8
- USB Port
- Network card (LAN Port)
- DB9 serial port connection or adapter

## Objectives

Upon successfully completing this course, participants will be able to:

- Basic installation and configuration of WTM 4000 equipment
- Provisioning of features such as Management, RF Links, Ethernet VLANs, QoS, and Link Aggregation
- Basic diagnostics, troubleshooting and preventive maintenance for WTM 4000

## Course Outline

### System Overview

- WTM 4000 product over view
- Product variant
- Implementation option
- System & RF

### Product installation

- Unpacking
- Antenna installation
- ODU installation
- DC power to the ODU (external)
- DC power to the ODU (POE)

### Unit's management

- Connecting to the WTM4000
- Management option (GUI / CLI)
- Default login/ parameter
- Management Vlan

### Basic set-up and management

- Date and Time
- SNMP and Wi-Fi configuration
- Admin management

### RF link provisioning

- Provisioning the RF link
- Setting the A2C option

### Performance Statistics and Monitoring

- RF Link Performance Statistics and Monitoring using CLI and GUI
- RFC2544 Ethernet tests and interpretation

### Switching and routing

- Basic routing function
- Layer 2 Link Aggregation (LACP)
- L2 control protocol tunnel
- Vlan management

### QOS

- Classification
- Scheduling
- Policing
- Flow classification

### Troubleshooting and Maintenance

- Troubleshooting Overview
- Troubleshooting Techniques and Options
- Troubleshooting Configuration and Link Problems
- Maintenance Overview

## Required Equipment for Training Sessions at Customer Sites

RADIO	<p>One equipment rack with 48VDC power supply</p> <p>At least 1 Traffic free hop – 2 radios talking to each other. (Path has been simulated with at least 60dB of attenuation, for troubleshooting training variable attenuators are preferred however not mandatory)</p> <p>Chassis configurations should include as a minimum:</p> <ul style="list-style-type: none"> <li>•ODRs should be a matching pair that is same sub band and TR spacing with one being Tx High and the other Tx Lo.</li> </ul>
OTHER EQUIPMENT	<p>Ethernet tester</p> <p>Digital Multimeter.</p>
CLASSROOM SET UP	<p>Sufficient in size to handle all participants, instructor, desks, chairs, classroom equipment. The room must have enough 110 AC (220) AC power and air conditioning to operate equipment, all student's client's PC's and the server or radio as required.</p> <p><b>Classroom Equipment</b></p> <p>Marker board, SVGA or Overhead projector and screen.</p> <p><b>Desk and Chairs</b></p> <p>Desks or workstations with enough room for each student to write have open books, client PC and / or, keyboard and monitor.</p> <p><b>Internet Access</b></p> <p>Internet access through the server or through client PC.</p>

## Pricing & Scheduling

Please contact your Aviat local sales team for a quote or email [aviatcareeducate@aviatnet.com](mailto:aviatcareeducate@aviatnet.com) and request pricing for the following items:

TRN-WTM4K-IOM-A	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER - OPEN ENROLLMENT -PER STUDENT
TRN-WTM4K-IOM-B	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER- 10 STUDENTS MAX
TRN-WTM4K-IOM-C	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, CUSTOMER LOCATION- 10 STUDENTS MAX
TRN-WTM4K-IOM-D	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, CUSTOMER LOCATION-WITH EQUIPMENT- ONLY FOR US- 10 STUDENTS MAX
TRN-WTM4K-IOM-A	WTM4000: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER - OPEN ENROLLMENT -PER STUDENT

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## ProVision Plus

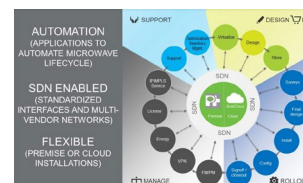
Management & Applications Platform

### TRN-PVPLUS-ICM-A/B/C/D

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#### Course Specifics

Duration:	2 days
Class capacity:	10 students
Materials provided:	Student Handbook (e-Book)



#### Course Description

The Aviat Networks ProVision Plus is Aviat's next generation management and application platform, designed from the ground up to minimize the total cost of ownership and maximize the intelligence and flexibility of modern complex microwave networks. ProVision Plus is designed to be open and programmable to enable custom built applications to automate the microwave lifecycle.

ProVision Plus is an easy to use web-based system accessed via modern web browsers such as Google Chrome and Microsoft Edge. No client application installation is required, minimizing deployment and support cost. Multiple server deployment options are available. Provision Plus is designed for premise deployments and compliments AviatCloud for cloud-based installations.

Courses are **conducted by AVIAT expert trainers** in a mentoring environment backed by their deep technology expertise and experience in implementation of microwave wireless and IP/MPLS networks.

The course is conducted at **Aviat Training locations or can be arranged at customer sites**.

#### Target Audience

This course is intended for Network Operations Center (NOC) operators and engineers involved in managing microwave networks using the ProVision Plus EMS.

#### Prerequisites

- Participants must complete ProVision System Overview e-learning course
- Participants should have knowledge and experience in the areas of network operations fundamentals and telecommunications fundamentals.
- The student will need a Notebook computer with an Ethernet port and running on one of the following Operating Systems:
  - Windows XP Pro
  - Windows Vista
  - Windows 7
  - Windows 10

#### Objectives

Upon successfully completing this course, participants will be able to perform:

- Installation and configuration of ProVision Plus software
- Basic diagnostics, troubleshooting and preventive maintenance of microwave network elements using ProVision plus EMS
- Setup users and administer features for fault management, configuration management and reporting
- Monitoring MPLS networks

## Course Outline

### ProVision Plus Introduction

- Functions & features
- Minimum hardware specifications
- Understand ProVision + Architecture
- Deployment Options

### Navigating ProVision

- Main User Interface
- Menu Bar
- Tree Viewer
- Map Viewer
- View and change radio configuration
- View and change network IP addresses

### Fault Management

- Managing Events – event properties, acknowledge, clear
- Event Browser – filters, browser options

### Performance Monitoring

- Check the equipment performance

### ProVision + Installation and User Administration

- Requirements for ProVision + Installation
- ProVision + Installation
- Verifying ProVision + is running
- Logging in to the Software
- Navigating ProVision
- Basic User Account creation and access level

### Deploying and Managing Radios

- Information required for deployment
- Deploying containers – regions, sites and racks
- Deploy, Manage, Rename, Delete and Unmanage Radios

### Synchronizing Live and baseline database

- Network monitoring
- Network layer management

### ProVision Installation and Administration

- Creating Regional access for users
- Session Manager Administration
- Email Server Configuration
- Understand communication with Network elements
- Administer database manual and scheduled backup and security profiles
- Understand licensing requirements and procedures.

### MPLS network management

- Physical link
- LSP link
- LSP
- TE link
- TE Tunnel

### MPLS service operation management

- PW (Pseudowire)
- L2VPN services layer
- RT Link
- L3VPN services layer

### Maintenance and troubleshooting

- Ping
- Trace
- Diagnostics History
- System message

## Required Equipment for Training Sessions at Customer Sites

RADIO	Not Applicable.
OTHER EQUIPMENT	Not Applicable.
CLASSROOM SET UP	Enough in size to handle all participants, instructor, desks, chairs, classroom equipment. The room must have enough 110 AC (220) AC power and air conditioning to operate equipment, all student's client's PC's and the server or radio as required.

### Classroom Equipment

Marker board, SVGA or Overhead projector and screen.

### Desk and Chairs

Desks or workstations with enough room for each student to write have open books, client PC and / or, keyboard and monitor.

### Internet Access

Internet access through the server or through client PC.

## Pricing & Scheduling

Please contact your Aviat local sales team for a quote or email [aviatcareeducate@aviatnet.com](mailto:aviatcareeducate@aviatnet.com) and request pricing for the following items:

TRN-PVPLUS-ICM-A	PROVISION PLUS: INSTALLATION, CONFIGURATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER - OPEN ENROLLMENT -PER STUDENT
TRN-PVPLUS-ICM-B	PROVISION PLUS: INSTALLATION, CONFIGURATION AND MAINTENANCE - ILT, 2 DAYS, AVIAT TRAINING CENTER- 10 STUDENTS MAX
TRN-PVPLUS-ICM-C	PROVISION PLUS: INSTALLATION, CONFIGURATION AND MAINTENANCE - ILT, 2 DAYS, CUSTOMER LOCATION- 10 STUDENTS MAX
TRN-PVPLUS-ICM-D	PROVISION PLUS: INSTALLATION, CONFIGURATION AND MAINTENANCE - ILT, 2 DAYS, CUSTOMER LOCATION-WITH EQUIPMENT- ONLY FOR US- 10 STUDENTS MAX
TRN-PVPLUS-OVIEW-E	PROVISION PLUS OVERVIEW ELEARNING -PER STUDENT

## EDUCATION SERVICES

