Eclipse Installation, Operation and Maintenance Course

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

Course Specifics

Duration:	3 days
Class capacity:	10 students
Materials provided:	Student Handbook (e-Book)

Course Description

The Eclipse™ product family is a highly modular and scalable platform that delivers a unique combination of high capacity hybrid or all-packet transport, Carrier Ethernet/IP networking, and comprehensive mission critical microwave features, enabling operators to prepare for the all-IP future.

The **Eclipse Installation, Operation and Maintenance course** teaches students key functions of the Eclipse platform. The course includes an overview of all available equipment, basic configuration with the Portal craft tool, system commissioning, maintenance, diagnostics and troubleshooting. Extensive hands-on labs (nearly 50% of the course duration) 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 Eclipse 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 Eclipse platform.

Prerequisites

1. Participants must complete Eclipse System Overview e-learning course.

2. Participants should have a basic understanding of Electronics, Telecommunications and IP Fundamentals and have basic computer skills.

3. Each student must bring an IBM compatible laptop PC and have administrator rights on the PC (to allow installation of the Portal craft tool).

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, or Windows 7
- USB Port
- Network card (LAN Port)
- DB9 serial port connection or adapter (optional)

Objectives

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

- Basic installation and configuration for Eclipse equipment
- Preventative maintenance on the relevant Eclipse equipment
- Basic diagnostics and troubleshooting of the relevant Eclipse equipment.

EDUCATION SERVICES

Course Outline

Eclipse System Overview
- Introduction to Basic Overview
- Introduction to Node and Terminal Platform

Eclipse Node
- Node Concept
- Basic Architecture and Capabilities
- Indoor Units: INU and INUe
- Slot Assignment Rules
- Backplane Bus
- Node Capacity Rules and Licensing
- Plug-in Cards
- -NCC, -FAN, RACs, -DACs, -AUX, -NPC
- Node and DAC Protection
- RF Unit Overview

Installation and Commissioning
- INU Card Handling and Rules
- Indoor Installation
- Outdoor Installation
- Commissioning
- Configuration Work Flow
- Acceptance Testing
- Records Keeping
- Lab Exercise

Ethernet DAC's
- Eclipse Packet Node
- DAC GE3
- DAC GE
- Modes of Operation
- RWPR
- VLANs
- Link Aggregation
- Link Status Propagation
- QOS and Scheduling
- DAC GE3 Protection
- Lab Exercise

Eclipse Terminals

- Eclipse Terminal Overview
- Eclipse IDU GE3 16x
- Eclipse Terminal protection Operation

Eclipse ODU/RFUs

- ODU 300hp
- ODU 600
- IRU600v1, v2, and v3 (North America only)
- Antenna Mount and Coupler
- RSSI
- RAC-ODU/RFU Cable
- ODU/RFU Block Diagram

Eclipse ODU/RFU Configuration

- Protection Options
- Hot Standby 1+1
- Space Diversity
- Frequency Diversity
- Dual Protection
- TDM Ring Protection, NCM and SPDH
- CCDP with XPIC
- ACM

Portal

- Introduction to Portal Craft Tool
- Portal Installation
- Portal PC Configuration for Ethernet and V.24/RS-232 Connections
- Eclipse Network Management
- Portal Screens
- Lab Exercise

Eclipse Diagnostics and Troubleshooting

- Diagnostics Overview
- LEDs
- Alarms
- HTML Help
- Diagnostics Screens
- Loopbacks
- Event Browser
- Performance and History
- Troubleshooting Overview
- Troubleshooting Path Problems
- Troubleshooting Configuration Problems
- Lab Exercise

Preventative Maintenance
- Maintenance Overview
- Inspections
- Trend Analysis
- Fault Analysis and Reporting
- Spares
- Software Management
- Lab Exercise

Required Equipment for Training Sessions at Customer Sites

RADIO	One equipment rack with 48VDC power supply (note; all Eclipse equipment is positive earth) 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) INU configurations each INU should include as a minimum: •RAC card (with RAC jumper cable and 50ohm cable or M/M N-type adapters to connect to ODU. •DAC card (with relevant traffic cables •Any relevant optional cards. IDU configurations, each IDU should have the following available; •Flash card •Relevant traffic cables •50ohm N-type cable for connection to ODU •ODU's should be a matching pair i.e. same sub band and TR spacing with one being Tx High and the other Tx Lo. INU configurations it is preferred although not essential to have 3 x INU and 2x Pairs of ODU's to allow nodal configurations to be made during the training.
OTHER EQUIPMENT	Not Applicable.
CLASSROOM SET UP	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 students clients 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 and request pricing for the following items:

TRN-ECL-OVIEW-E	ECLIPSE OVERVIEW - ELEARNING -PRICE PER STUDENT
TRN-ECL-IOM-A	ECLIPSE: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 3 DAYS, AVIAT TRAINING CENTER - OPEN ENROLLMENT -PER STUDENT
TRN-ECL-IOM-B	ECLIPSE: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 3 DAYS, AVIAT TRAINING CENTER- 10 STUDENTS MAX
TRN-ECL-IOM-C	ECLIPSE: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 3 DAYS, CUSTOMER LOCATION- 10 STUDENTS MAX
TRN-ECL-IOM-D	ECLIPSE: INSTALLATION, OPERATION AND MAINTENANCE - ILT, 3 DAYS, CUSTOMER LOCATION-WITH EQUIPMENT- ONLY FOR US- 10 STUDENTS MAX

ProVision installation, configuration & Management

TRN-PV-ICM

Course Specifics

Duration:	2 days
Class capacity:	10 students
Materials provided:	Instruction Manual (USB) Student Handbook (USB) Datasheets

Course Description

Aviat ProVision™ is a powerful, standards-based Element Management System (EMS). Designed to simplify Carrier Ethernet and TDM network designs and services, it provides superior intelligence for mobile and private network operators. ProVision delivers network management across the full Aviat product portfolio, key partner products and many third-party SNMP-based platforms. It provides efficient, seamless end-to-end network management solutions for TDM, Carrier Ethernet, and hybrid microwave networks.

The ProVision™ Installation, Configuration and Management course provides full guidance on the installation, use and administration of ProVision EMS software. The course will cover in detail all aspects of using the EMS for fault management, configuration management, performance monitoring and reporting.
By leveraging the extensive hands-on labs exercises (50% of the course duration) provided, students will be able to master the ProVision EMS features and significantly reduce complex configuration time for deployment.

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 ProVision Installation, Configuration and Management 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 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 2003 Server
  - Windows 2008 Server

Objectives

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

- Installation and configuration of ProVision software

- Basic diagnostics, troubleshooting and preventive maintenance of microwave network elements using ProVision EMS
- Setup users and administer features for fault management, configuration management and reporting

EDUCATION SERVICES

Course Outline

ProVision Introduction

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

Navigating ProVision

- Main User Interface
- Menu Bar
- Tree Viewer – Physical and Logical Viewer
- Map Viewer, adding a map background to 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, scoreboards
- Viewing Security logs – log on/off, configuration changes
- Configure Event Notifications
- Configure and Interpret Scoreboards

Performance Monitoring

- Configure device data collection
- Interpret performance history & trends
- Set up Performance thresholds
- Interpret Ethernet Bandwidth Utilization
- Produce Inventory & fault reports

Eclipse Features

- Create, trace, view and diagnose circuits
- Perform bulk software loads
- Produce capacity, inventory & fault reports

ProVision Installation and User Administration

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

Deploying and Managing Radios and Generic Devices

- Information required for deployment
- Deploying containers – regions, sites and racks
- Deploy, Manage, Rename, Delete and Unmanage Radios and Generic Devices such as switches, routers, third party microwave radios, multiplexers etc
- Deploying EMS/Proxy in ProVision
- Re-parenting an object
- Create, verify and delete a link
- Reposition Map viewer objects – lock/unlock object moving
- Verify ProVision is receiving events

Configuration Management

- View and Change Network IP addresses
- Uploading Eclipse licenses
- Perform Bulk configuration for devices on the Network
- Network Auto-Discovery of Radios and Devices
- Circuit Provisioning and Collection
- Configure Logical Containers
- Creating Map Annotation

Reports

- Generate Helpdesk reports
- Generate Capacity, Inventory and Fault Reports
- Generate Network Health Reports – RF and Ethernet Network Health Reports
- Generate Security Status Report of Radios and Devices
- Configure Schedule Reports
- Customize reports from report fields and objects

ProVision Installation and Administration

- Understand ProVision server/Client relationship
- 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
- Northbound Interface (NBI)description and configuration
- Configure ProVision Redundancy Controller
- Discuss remote access options
- Understand licensing requirements and procedures.

Pro Vision VLAN Management

- Viewing Discovered VLANs for Eclipse and CTR 8540 and 8300
- Creating VLANs for Eclipse
- Creating VLANs for CTR 8540 and 8300
- Modifying a VLAN
- Validating VLAN Configuration
- Deleting a VLAN

Ethernet OAM Management

- Viewing Discovered EOAM Maintenance Associations
- Viewing EOAM Configuration Details
- Configuring EOAM
- Configuring EOAM to provide Fault Monitoring of VLANs for Eclipse
- Validating EOAM Configuration

ERP Ring Management

- Viewing Discovered Layer 1 and ERP Rings
- Viewing Ring Configuration Details
- Configuring ERP Rings
- Modifying an ERP Ring
- Deleting an ERP Ring
- Validating ERP Ring Configuration

EDUCATION SERVICES

Required Equipment for Training Sessions at Customer Sites

RADIO	One equipment rack with 48VDC power supply (if using 48VDC PoE units). 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). One hub or switch One computer per 2 students One computer (when TNET Proxy Server and/or TNET equipment is required) 240v power points Radio links can be hired for duration of training course if required.
OTHER EQUIPMENT	Computer requirements: 2 GHz processor (w/512K cache) 1GB memory or greater GB Hard disk space CD-ROM Video Card Capable of 1024x768 “True Color” or higher Windows 2000/ XP/ Vista LAN card USB port CAT 5 cables
CLASSROOM SET UP	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 students clients 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

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TRN-PV-OVERVIEW-E	Provision Overview eLearning -price per Student
TRN-PV-ICM-A	ProVision: Installation, Configuration and Management - ILT, 2 DAYS, Aviat Training Center - Open Enrollment -per Student
TRN-PV-ICM-B	ProVision: Installation, Configuration and Management - ILT, 2 DAYS, Aviat Training Center- 10 Students Max
TRN-PV-ICM-C	ProVision: Installation, Configuration and Management - ILT, 2 DAYS, Customer Location- 10 Students Max
TRN-PV-ICM-D	ProVision: Installation, Configuration and Management - ILT, 2 DAYS, Customer Location- with Equipment- only for US- 10 Students Max