Mileage from Lynchburg Airport to Technical Training Center is approximately 6.3 miles.
TRAINING DEPARTMENT MISSION
To deliver high-quality, performance-based training that gives our customers the knowledge and skills to effectively operate, manage and self-maintain their Harris communications network.
# Table of Contents

**Introduction** .................................................................................................................................................. 1  
Mission Statement ........................................................................................................................................... 1  
Purpose ............................................................................................................................................................ 1  
Customer Satisfaction ................................................................................................................................... 1  
Technical Training Center ............................................................................................................................. 1  
Training Methodology ................................................................................................................................... 1  
On-Site Training ............................................................................................................................................ 2  
More Information .......................................................................................................................................... 2  

**Course Listing** .......................................................................................................................................... 3  

## P25 System Management Training ......................................................................................................... 6  
Overview ....................................................................................................................................................... 6  
Blended Learning Approach .......................................................................................................................... 6  
P25 System Management Training Program .............................................................................................. 7  
P25 System Management Asynchronous Training ..................................................................................... 8  
Bundled P25 System Manager Training Program ..................................................................................... 8  
P25 Fleet Mapping Workshop (YTSN6A) ................................................................................................. 9  
Console Configuration (YTSN3H) ........................................................................................................ 10  
P25 System Overview (YTSN4F) ........................................................................................................ 10  
Unified Administration System (YTSN4G) .............................................................................................. 10  
Regional Network Manager (YTSN4H) .............................................................................................. 11  
Over-The-Air Rekeying (YTSN6C) ....................................................................................................... 12  
ISSI Configuration & Administration (YTSN9L) ............................................................................. 12  

## P25 System Maintenance Training ......................................................................................................... 13  
Overview ....................................................................................................................................................... 13  
P25 System Maintenance Training Flowchart ....................................................................................... 13  
Bundled P25 System Maintenance Training Program .......................................................................... 14  
P25 System Maintenance (YTSN6D) .................................................................................................. 14  
Regional Network Manager (YTSN3V) .............................................................................................. 15  
Network Operation & Maintenance (YTSN3W) ................................................................................ 15  
MASTR V Station Maintenance (YTSN8G) ..................................................................................... 15  
MASTR III Station Maintenance (YTSP3T) .................................................................................. 15
# Table of Contents (continued)

- **P25 Simulcast System Maintenance (YTSN8H)** ................................................................. 16
- **P25 Master Technician (YTSN9T)** .................................................................................... 16

## Operational Training ........................................................................................................ 17
- **Overview** .......................................................................................................................... 17
- **Console Equipment Operator Training (YTSP5P)** ............................................................ 17
- **User Equipment Operator Training (YTSP7R)** ............................................................... 17
- **XL-200P Radio Programming & Operation (YTSN6X)** ...................................................... 19

## Network & RF Core Training ................................................................................................. 20
- **Overview** .......................................................................................................................... 20
- **Introduction to Networking (YTSN2X)** .......................................................................... 20
- **RF Test & Troubleshooting (YTSP5U)** ......................................................................... 20
- **Advanced RF Fundamentals (YTSN3E)** ....................................................................... 21
- **Grounding & Surge Suppression (YTSN5Y)** ................................................................. 21

## Portable & Mobile Radio Maintenance Training ..................................................................... 22
- **Overview** .......................................................................................................................... 22
- **XL-200P Radio Maintenance (YTSN4A)** ...................................................................... 22
- **XL-200M Radio Maintenance (YTSN4V)** ...................................................................... 22
- **OMAP Portable Radio Maintenance (YTSN8J)** ............................................................. 23
- **OMAP Mobile Radio Maintenance (YTSN8K)** ............................................................. 23
- **Mobile Radio Installation (YTSN7U)** ........................................................................... 23
- **On-Site Radio Maintenance Training** ............................................................................ 24

## OpenSky System Management Training ............................................................................... 25
- **Overview** .......................................................................................................................... 25
- **OpenSky System Administration (YTSN6E)** ................................................................. 25
- **Console Configuration (YTSN3H)** ................................................................................ 25
- **Unified Administration System (YTSN6B)** .................................................................. 25
- **Regional Network Manager (YTSN3V)** ...................................................................... 26

## OpenSky System Maintenance Training ............................................................................... 27
- **Overview** .......................................................................................................................... 27
- **OpenSky Site Equipment Maintenance (YTSN5C)** ....................................................... 27
# 2020 Technical Training Catalog

## Table of Contents (continued)

Regional Network Manager (YTSN3V) ........................................................................................................... 27  
Network Operation & Maintenance (YTSN3W) .............................................................................................. 27  

**Tait-Powered DMR Tier III Training** ........................................................................................................ 28  
Overview .................................................................................................................................................... 28  
DMR Tier III Configuration & Maintenance (YTSN4J) .................................................................................... 28  
DMR Tier III EnableFleet Configuration & Management (YTSN4K) .............................................................. 29  
DMR Tier III Gridlink Configuration & Operation (YTSN4L) ......................................................................... 29  

**Tait-Powered P25 Conventional Training** ................................................................................................. 31  
Overview .................................................................................................................................................... 31  
P25 Conventional Configuration & Maintenance (YTSN4M) ....................................................................... 31  

**Tait-Powered P25 Trunking Training** ......................................................................................................... 32  
Overview .................................................................................................................................................... 32  
P25 Trunking Configuration & Maintenance (YTSN4N) .................................................................................. 32  
P25 Trunking EnableFleet Configuration & Management (YTSN4P) .............................................................. 32  
P25 Trunking KMF Configuration, Administration & Management (YTSN4R) .............................................. 33  

**Tait-Powered Analog Simulcast IP Training** ............................................................................................. 34  
Overview .................................................................................................................................................... 34  
Analog Simulcast Configuration & Maintenance (YTSN4S) ....................................................................... 34  

**L3Harris Technical University** ................................................................................................................ 35  
Overview .................................................................................................................................................... 35  
Benefits ........................................................................................................................................................ 35  
Available Asynchronous Training Packages ............................................................................................... 35  
P25 System Management Asynchronous Training Package ....................................................................... 36  
Radio Operation Asynchronous Training Package ...................................................................................... 37  
Console Operation Asynchronous Training Package ................................................................................... 37  
Radio Programming Asynchronous Training Package ................................................................................ 38  
BeOn Operation Asynchronous Training Package ...................................................................................... 38  
Learning Management System ................................................................................................................... 39  
Course Customization ................................................................................................................................ 39
Table of Contents (continued)

Virtual Classroom Training ........................................................................................................ 40
  Overview .............................................................................................................................. 40
  Equipment Requirements ..................................................................................................... 41
  Procurement ....................................................................................................................... 41

Enrollment Information ........................................................................................................... 42
  When to Enroll ..................................................................................................................... 42
  How to Enroll ...................................................................................................................... 42
  Enrolling in the P25 Master Technician Course .................................................................. 42
  Enrollment Verification ....................................................................................................... 42
  Cancellation Policy .............................................................................................................. 42
  Class Start & Stop Times ..................................................................................................... 43
  Attendance Requirements ................................................................................................... 43
  Travel & Lodging Arrangements ......................................................................................... 43
  Schedule Changes ............................................................................................................... 43
  Canadian Customers ......................................................................................................... 43

2020 Training Schedule & Tuition .......................................................................................... 44

2020 On-Site Training Prices .................................................................................................. 46

Technical Training Team ........................................................................................................ 48
  Customer Commitment ...................................................................................................... 48
  Frank Ober .......................................................................................................................... 48
  Steve Clark .......................................................................................................................... 48
  Bruce Eck ............................................................................................................................. 48
  Ken Frank ............................................................................................................................ 49
  Chris Jamerson ................................................................................................................... 49
  Todd Keller .......................................................................................................................... 49
  Randall Russell ...................................................................................................................... 49
  Scott Steph ........................................................................................................................... 50
  James Stinnett ...................................................................................................................... 50

Training Registration Form .................................................................................................... 51

P25 Master Technician Course Application ............................................................................. 52
## Introduction

### Mission Statement
Our mission is to deliver high-quality, performance-based training that gives our customers the knowledge and skills to effectively operate, manage, and self-maintain their L3Harris communications network.

### Purpose
This catalog is designed to provide you with information about our training services and to help you select the appropriate course of instruction for operating, managing, and maintaining your radio system. A brief description of each course is provided along with flowcharts that illustrate the recommended sequence of courses for management and maintenance training. Additionally, information is provided about L3Harris Technical University, our web-based training offering. A Training Registration Form and the 2020 Training Center Schedule are also included.

### Customer Satisfaction
It is very important to the Training Team that our services meet and exceed customer expectations. To measure our performance, students complete a Class Evaluation Form after every training course. We are very proud of the fact that for greater than a decade our customer satisfaction rating has either met or exceeded our goal.

### Technical Training Center
The L3Harris Technical Training Center is located at 221 Jefferson Ridge Parkway in Lynchburg, Virginia. The facility includes multiple radio systems dedicated to training, as well as well-equipped classrooms and laboratories to support hands-on training.

### Training Methodology
To provide high-quality performance-based training, we develop and maintain our training courses using a systematic approach. This methodology identifies the training necessary for each job position and focuses on the performance of tasks. We design and develop training courses with explicit learning objectives and appropriate content. Training effectiveness is evaluated and the results are used to maintain and improve our training programs.

The systematic approach to training methodology also ensures that training is delivered in the most effective learning environment, such as a traditional or virtual classroom or laboratory, and a proper mixture of discussion, lecture, and hands-on training are used to provide optimal learning. In addition, we create easy-to-follow student materials that support the training and provide appropriate technical documentation.
Introduction (continued)

On-Site Training

In addition to the regularly scheduled open-enrollment courses delivered at the Technical Training Center in Lynchburg, most of the courses offered in this catalog can be conducted on site. Please refer to the Course Listing section of the catalog to see which courses are offered on site.

Courses can also be customized to meet specific customer training requirements. For example, we can combine training modules from the RF Test & Troubleshooting and MASTR III Station Maintenance courses into a single five-day course, which is not a standard course offering.

The customer must provide the facility and any tools and equipment needed to support the hands-on portion of the training, if conducted on-site.

On-site training prices can be found starting on page 46 of this catalog. On-site training courses are scheduled on mutually agreeable dates by the customer and L3Harris Training Manager.

More Information

For more information about our training programs, contact the Training Registrar or the Training Manager by e-mail at pspc_training@L3Harris.com or call 1-800-528-7711 (option #1).
Course Listing

Our performance-based training focuses on three categories: management, maintenance and operation. Management training provides administrative and management personnel with the knowledge and skills to plan and manage the radio system. Maintenance training prepares a technician to perform preventive and corrective maintenance on radio system equipment. Operational training is designed for radio users and dispatchers to facilitate the transition to a new radio system.

The following table provides a list of standard training courses. The table includes the course number and the location where the training can be conducted as indicated by the course length.

<table>
<thead>
<tr>
<th>P25 System Management Training</th>
<th>Course No.</th>
<th>Virtual Classroom</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25 Fleet Mapping Workshop</td>
<td>YTSN6A</td>
<td>-</td>
<td>-</td>
<td>4 days</td>
</tr>
<tr>
<td>Console Configuration</td>
<td>YTSN3H</td>
<td>-</td>
<td>-</td>
<td>2 days</td>
</tr>
<tr>
<td>P25 System Overview</td>
<td>YTSN4F</td>
<td>5 four-hour sessions</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Unified Administration System</td>
<td>YTSN4G</td>
<td>3 four-hour sessions</td>
<td>-</td>
<td>2 days</td>
</tr>
<tr>
<td>Regional Network Manager</td>
<td>YTSN4H</td>
<td>2 four-hour sessions</td>
<td>-</td>
<td>2 days</td>
</tr>
<tr>
<td>P25 System Implementation Workshop</td>
<td>YTSN9N</td>
<td>-</td>
<td>5 days</td>
<td>-</td>
</tr>
<tr>
<td>Over-The-Air Rekeying (OTAR)</td>
<td>YTSN6C</td>
<td>-</td>
<td>-</td>
<td>1 day</td>
</tr>
<tr>
<td>ISSI Configuration &amp; Administration</td>
<td>YTSN9L</td>
<td>-</td>
<td>-</td>
<td>1 day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P25 System Maintenance Training</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25 System Maintenance</td>
<td>YTSN6D</td>
<td>7 days</td>
<td>7 days</td>
</tr>
<tr>
<td>Regional Network Manager</td>
<td>YTSN3V</td>
<td>2 days</td>
<td>2 days</td>
</tr>
<tr>
<td>Network Operation &amp; Maintenance</td>
<td>YTSN3W</td>
<td>4 days</td>
<td>4 days</td>
</tr>
<tr>
<td>MASTR V Station Maintenance</td>
<td>YTSN8G</td>
<td>2 days</td>
<td>2 days</td>
</tr>
<tr>
<td>MASTR III Station Maintenance</td>
<td>YTSP3T</td>
<td>4½ days</td>
<td>3 days</td>
</tr>
<tr>
<td>P25 Simulcast System Maintenance</td>
<td>YTSN8H</td>
<td>3 days</td>
<td>3 days</td>
</tr>
<tr>
<td>P25 Master Technician</td>
<td>YTSN9T</td>
<td>4½ days</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operational Training</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Console Equipment Operator Training</td>
<td>YTSP5P</td>
<td>-</td>
<td>4 hours</td>
</tr>
<tr>
<td>User Equipment Operator Training</td>
<td>YTSP7R</td>
<td>-</td>
<td>2 – 8 hours</td>
</tr>
<tr>
<td>XL-200P Radio Programming &amp; Operation</td>
<td>YTSN6X</td>
<td>2 days</td>
<td>2 days</td>
</tr>
</tbody>
</table>
## Course Listing (continued)

### Core Training

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Networking</td>
<td>YTSN2X</td>
<td>4½ days</td>
<td>4½ days</td>
</tr>
<tr>
<td>RF Test &amp; Troubleshooting</td>
<td>YTSP5U</td>
<td>4½ days</td>
<td>4½ days</td>
</tr>
<tr>
<td>Advanced RF Fundamentals</td>
<td>YTSN3E</td>
<td>4½ days</td>
<td>4½ days</td>
</tr>
<tr>
<td>Grounding &amp; Surge Suppression</td>
<td>YTSN5Y</td>
<td>-</td>
<td>2 days</td>
</tr>
</tbody>
</table>

### Portable & Mobile Radio Maintenance Training

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL-200P Radio Maintenance</td>
<td>YTSN4A</td>
<td>2 days</td>
<td>2 days</td>
</tr>
<tr>
<td>XL-200M Radio Maintenance</td>
<td>YTSN4V</td>
<td>2 days</td>
<td>2 days</td>
</tr>
<tr>
<td>OMAP Portable Radio Maintenance</td>
<td>YTSN8J</td>
<td>4½ days</td>
<td>4½ days</td>
</tr>
<tr>
<td>OMAP Mobile Radio Maintenance</td>
<td>YTSN8K</td>
<td>4½ days</td>
<td>4½ days</td>
</tr>
<tr>
<td>Mobile Radio Installation</td>
<td>YTSN7U</td>
<td>-</td>
<td>2 days</td>
</tr>
</tbody>
</table>

### OpenSky System Management Training

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenSky System Administration</td>
<td>YTSN6E</td>
<td>-</td>
<td>3½ days</td>
</tr>
<tr>
<td>Console Configuration</td>
<td>YTSN3H</td>
<td>-</td>
<td>2 days</td>
</tr>
<tr>
<td>Unified Administration System</td>
<td>YTSN6B</td>
<td>-</td>
<td>2 days</td>
</tr>
<tr>
<td>Regional Network Manager</td>
<td>YTSN3V</td>
<td>-</td>
<td>2 days</td>
</tr>
</tbody>
</table>

### OpenSky System Maintenance Training

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenSky Site Equipment Maintenance</td>
<td>YTSN5C</td>
<td>-</td>
<td>4 days</td>
</tr>
<tr>
<td>Regional Network Manager</td>
<td>YTSN3V</td>
<td>-</td>
<td>2 days</td>
</tr>
<tr>
<td>Network Operation &amp; Maintenance</td>
<td>YTSN3W</td>
<td>-</td>
<td>4 days</td>
</tr>
</tbody>
</table>

---

“Student Feedback

"The instructor was extremely helpful in clearly explaining a very complicated system. Great trainer who kept the class engaged."
### Course Listing (continued)

<table>
<thead>
<tr>
<th>Tait-Powered DMR Tier III Training</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMR Tier III Configuration &amp; Maintenance</td>
<td>YTSN4J</td>
<td>-</td>
<td>5 days</td>
</tr>
<tr>
<td>DMR Tier III EnableFleet Configuration &amp; Management</td>
<td>YTSN4K</td>
<td>-</td>
<td>5 days</td>
</tr>
<tr>
<td>DMR Tier III GridLink Configuration &amp; Operation</td>
<td>YTSN4L</td>
<td>-</td>
<td>5 days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tait-Powered P25 Conventional Training</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25 Conventional Configuration &amp; Maintenance</td>
<td>YTSN4M</td>
<td>-</td>
<td>5 days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tait-Powered P25 Trunking Training</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25 Trunking Configuration &amp; Maintenance</td>
<td>YTSN4N</td>
<td>-</td>
<td>5 days</td>
</tr>
<tr>
<td>P25 Trunking EnableFleet Configuration &amp; Management</td>
<td>YTSN4P</td>
<td>-</td>
<td>5 days</td>
</tr>
<tr>
<td>P25 Trunking KMF Configuration, Administration &amp; Management</td>
<td>YTSN4R</td>
<td>-</td>
<td>5 days</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tait-Powered Analog Simulcast IP Training</th>
<th>Course No.</th>
<th>Training Center</th>
<th>On-Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Simulcast Configuration &amp; Maintenance</td>
<td>YTSN4S</td>
<td>-</td>
<td>4 days</td>
</tr>
</tbody>
</table>
P25 System Management Training

Overview

P25 system administrators and managers have overall responsibility for defining and maintaining the system's configurable parameters. This role has evolved as radio systems have become larger and more complex. Their responsibilities include the following:

- Defining the fleet map
- Defining wide-area roaming capabilities
- Planning radio feature usage and personalities
- Configuring dispatch consoles
- Maintaining unit and group databases
- Enabling and disabling subscriber units
- Generating reports
- Monitoring system performance

Blended Learning Approach

The recommended training program for P25 system administrators and managers uses a blended learning approach comprised of virtual classroom, traditional classroom, and asynchronous training.

Virtual classroom training is ideal for transferring knowledge when hands-on instruction isn’t required and provides customers with a cost savings by eliminating travel and living expenses for the instructor and students. Additionally, we limit each virtual classroom session to four hours, allowing participants to perform their normal job duties during part of the day.

Traditional classroom training is used to conduct system planning workshops, train on special system features, and perform hands-on instruction. This training occurs at the L3Harris Technical Training Center in Lynchburg, Virginia or on-site at a customer facility.

Asynchronous training is self-paced web-based training hosted by L3Harris Technical University. It provides prerequisite training for both virtual and traditional classroom training, and provides just-in-time training on assorted subjects to assist system administrators and managers in performing their day-to-day duties.
The following figure illustrates the training program for P25 system administrators and managers, and the recommended sequence of completing the training, as applicable, using the blended learning approach.

* This course only occurs on-site at a customer facility.
** This course only occurs at the L3Harris Technical Training Center.
Students who register in the hands-on *P25 System Implementation Workshop* (YTSN9N) conducted in Lynchburg will receive one year of unlimited access to P25 System Management Asynchronous Training Package, which consists of the following training modules:

- P25 Fleet Mapping Overview
- XL-200P Radio Operation
- Symphony Console Operation
- Radio Programming Overview
- Radio Personality Manager (RPM and RPM 2)
- Advanced Access Control (AAC)
- Unified Administration System (UAS) Overview
- UAS “How to…”
- Regional Network Manager (RNM) Overview
- Active Directory
- Activity Warehouse
- Enterprise Network Manager (ENM) Overview
- Over-The-Air Programming (OTAP)
- Over-The-Air Rekeying (OTAR) Fundamentals
- OTAR “How to…”
- Inter-RF Subsystem Interface (ISSI) Fundamentals

These modules provide students with supplemental training to optimize learning during the *P25 System Implementation Workshop* and provide an on-the-job training aid. Additional self-paced training modules are added to the asynchronous training program for system administrators and managers, as developed, at no additional cost if you have an active account. The account can be renewed annually.

A person must complete multiple training courses to develop the required knowledge and skills to effectively perform day-to-day system management tasks. Attending training requires a time commitment by the employee and a financial commitment by the employer. Therefore, L3Harris offers a discount to reward our customers who are committed to training their personnel and makes it more affordable for people to complete a series of training activities to meet their responsibilities.

*continued on next page*
P25 System Management Training (continued)

The bundled P25 System Manager Training Program consists of one seat in the following virtual and traditional classroom courses:

- P25 System Overview (virtual classroom)
- Unified Administration System (virtual classroom)
- Regional Network Manager (virtual classroom)
- P25 System Implementation Workshop (traditional classroom and includes one year of unlimited access to the P25 System Management Asynchronous Training Package)

The total tuition if these courses are purchased individually is $6,500.00. However, with this package you only pay $5,850.00 for a savings of $650.00. Use course number YTSN8L to purchase the bundled P25 System Manager Training Program.

The bundled P25 System Manager Training Program must be paid in full prior to attending the first course. Courses must be attended by the same student and must be attended within one year of purchase. The program price is not valid with any other discounts and is not retroactive.

P25 Fleet Mapping Workshop (YTSN6A)

This on-site workshop assists new customers in defining the system fleet map and planning radio personalities. The workshop begins with an abbreviated overview of the P25 system that focuses on system design and operation so that participants can make informed decisions about the fleet map. The workshop explores advantages of different talk group structures and configuration parameters (e.g., property classes, priority levels, etc.) associated with talk groups and radio users. We include discussion of other configuration options such as announcement groups and the workshop will also ensure definition of interoperability talk groups.

Did you know?

The transition to a P25 trunked radio system is facilitated by the energy and effort put into system planning during the P25 Fleet Mapping Workshop.
P25 System Management Training (continued)

**Console Configuration (YTSN3H)**

This on-site course provides system administrators and managers and dispatch supervisors with the knowledge and skills to configure the Symphony Dispatch Console to meet operational needs. The training includes a detailed operational overview that introduces participants to the various features and capabilities of the console. Participants will work within the Configuration Utility to explore the various settings and how these settings impact the operation of the console. With an understanding of the Configuration Utility settings, participants will have the requisite knowledge to define the parameters that best suit their operational needs.

**P25 System Overview (YTSN4F)**

This virtual classroom course provides system administrators and managers with an understanding of terminology, equipment, components, and operational processes associated with the P25 system. Topics include RF communication basics, VIDA network and site equipment, call processing, wide-area coverage solutions, interoperability, and much more. This course provides prerequisite knowledge for system management application training on the Unified Administration System and Regional Network Manager.

**Unified Administration System (YTSN4G)**

This virtual classroom course provides system administrators and managers with the knowledge to create and maintain system databases using the Unified Administration System (UAS). Course topics include logging into the UAS, establishing user accounts, navigating through the user interface, creating and changing parameter values, and adding/deleting radio users and talk groups.

The *P25 System Overview (YTSN4F)* virtual classroom course is a required prerequisite. Prior completion of the following asynchronous training courses is highly recommended: *P25 Fleet Mapping Overview, Unified Administration System (UAS) Overview*, and *Active Directory*.

**Student Feedback**

“Very good class. Instructor was challenging and knowledgeable. Highly recommend.”
P25 System Management Training (continued)

Regional Network Manager (YTSN4H)

This virtual classroom course provides system administrators and managers with the knowledge to monitor and manage the P25 system using the Regional Network Manager (RNM). Course topics include system access, monitoring the status of system equipment, identification and acknowledgement of system faults, historical views of system performance, and exploring real-time viewers.

The P25 System Overview (YTSN4F) virtual classroom course is a required prerequisite. Prior completion of the following asynchronous training courses is highly recommended: Regional Network Manager (RNM) Overview and Active Directory.

P25 System Implementation Workshop (YTSN9N)

This hands-on workshop allows participants to implement the knowledge acquired during prerequisite virtual classroom and asynchronous training. The workshop begins with students completing structured hands-on exercises on the Unified Administration System (UAS), Regional Network Manager (RNM), and radio programming.

Participants then divide into teams to plan, implement, and operate the Training Center’s P25 radio system based on the communication requirements of an imaginary town. Activities include defining a fleet map, planning radio personalities, establishing UAS databases, configuring dispatch consoles, programming radios, and operating the system.

Since this workshop is primarily hands-on and builds upon previously acquired knowledge, it is important for students to meet the prerequisites for optimal learning and to gain the most benefit from this course.

The P25 System Overview (YTSN4F), Unified Administration System (YTSN4G) and Regional Network Manager (YTSN4H) virtual classroom courses are required prerequisites. Additionally, prior completion of the following asynchronous training modules is highly recommended:

- Radio Programming Overview
- Radio Personality Manager 2 (RPM 2)
- Advanced Access Control (AAC)
- Symphony Dispatch Console Operation
- XL-200P Radio Operation
P25 System Management Training (continued)

Over-The-Air Rekeying (YTSN6C)

This on-site course provides system administrators and managers with the knowledge and skills to manage encryption keys using the Key Management Facility (KMF) product in a P25 network. This includes defining Crypto Officer Administration classes and user privileges; managing Crypto Officer user accounts; configuring crypto nets; and rekeying talk groups, users and system keys using the Unified Administration System (UAS).

The P25 System Overview (YTSN4F) and Unified Administration System (YTSN4G) virtual classroom courses are recommended prerequisites.

ISSI Configuration & Administration (YTSN9L)

This on-site course provides system administrators and managers with the knowledge and skills to configure and implement the Inter-RF Subsystem Interface (ISSI) using the Unified Administration System (UAS). Course topics include configuring the UAS for local and foreign ISSI gateways, creating an ISSI Region, establishing System Assigned ID (SAID) ranges for foreign talk groups and users, determining shared users and talk groups available to foreign systems, and creating foreign user permission templates.

The P25 System Overview (YTSN4F) and Unified Administration System (YTSN4G) virtual classroom courses are recommended prerequisites.

Student Feedback

“The instructor was clear, knowledgeable and concise. I wish I would have had this training sooner. I would highly recommend the instructor and class to my peers and anyone else looking to understand the system.”
**P25 System Maintenance Training**

**Overview**

A P25 system maintenance technician must be familiar with all aspects of system operation and maintenance. This includes both site equipment and the VIDA IP network. System maintenance training provides technicians with the knowledge and skills needed to conduct preventive maintenance, troubleshoot problems, and take corrective action.

**P25 System Maintenance Training Flowchart**

The following flowchart illustrates the sequence and recommended courses for a P25 system maintenance technician. It is recommended that technicians begin their instruction by attending network and RF core training courses, which provide a technician with a solid foundation of IP network and RF knowledge that subsequent system and advanced network training will build upon.

```
Network and RF Core Training

Introduction to Networking (YTSN2X)
RF Test & Troubleshooting (YTSP5U)
Advanced RF Fundamentals (YTSN3E)

System Training

P25 System Maintenance (YTSN6D)
Network Operation & Maintenance (YTSN3W)
MASTR III Station Maintenance (YTP3T)
P25 Simulcast System Maintenance (YTSN8H)

Advanced System Training

Regional Network Manager (YTSN3V)
MASTR V Station Maintenance (YTSN8G)
P25 Master Technician (YTSN9T)
```
Bundled P25 System Maintenance Training Program

A person must complete multiple training courses to develop the required knowledge and skills to effectively perform preventive and corrective system maintenance. Attending training requires a time commitment by the employee and a financial commitment by the employer. Therefore, L3Harris offers a training discount to reward our customers who are committed to training their personnel and makes it more affordable for people to complete a series of training activities to meet their responsibilities.

The bundled P25 System Maintenance Training Program consists of one seat in the following open-enrollment training courses attended in Lynchburg:

- P25 System Maintenance
- Regional Network Manager
- Network Operation & Maintenance

The total tuition if these courses are purchased individually is $5,980.00. However, with this package you only pay $5,083.00 for a savings of $897.00. Use course number YTSN8N to purchase the bundled P25 System Maintenance Training Program.

The bundled P25 System Maintenance Training Program must be paid in full prior to attending the first course. Courses must be attended by the same student and must be attended within one year of purchase. The program price is not valid with any other discounts and is not retroactive.

P25 System Maintenance (YTSN6D)

This course provides maintenance technicians with an understanding of the terminology, equipment, and operational processes associated with the L3Harris P25 trunked radio network. It provides technicians with the basic knowledge and skills needed to conduct preventive maintenance, troubleshoot problems, and take corrective action. Course topics include an overview of P25 system operation and configurations, a comparison of P25 Phase I and Phase II operation, configuration of site equipment using VIDA Device Manager, basic radio programming, and operation and configuration of dispatch consoles. This course is a prerequisite for all other P25 system maintenance courses.
## P25 System Maintenance Training (continued)

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Network Manager (YTSN3V)</strong></td>
<td>This course provides technicians with the ability to monitor and troubleshoot the system using the Regional Network Manager (RNM). Course topics include system access, monitoring the status of system equipment, identification and acknowledgement of system faults, historical views of system performance, and exploring real-time viewers. Additionally, technicians are introduced to Activity Warehouse, a system report generating application. Completion of the <em>P25 System Maintenance</em> (YTSN6D) course is a prerequisite.</td>
</tr>
<tr>
<td><strong>Network Operation &amp; Maintenance (YTSN3W)</strong></td>
<td>This course introduces maintenance technicians to basic networking concepts and provides them with the ability to maintain the IP network and VIDA Application Server (VAS). Topics covered include IP addressing and basic routing, database backup and storage, router and switch configuration management, VAS configuration and failover operation, and disaster recovery of network components. Completion of the <em>Regional Network Manager</em> (YTSN3V) course is a prerequisite. Additionally, the <em>Introduction to Networking</em> (YTSN2X) course is a highly-recommended prerequisite for individuals who have never had any formal network training.</td>
</tr>
<tr>
<td><strong>MASTR V Station Maintenance (YTSN8G)</strong></td>
<td>This course covers the theory of operation and maintenance procedures for the MASTR V Station used in the P25 radio system. Topics covered include station architecture, module overview, software overview, network configuration, station configuration, troubleshooting and testing. Completion of the <em>P25 System Maintenance</em> (YTSN6D) and <em>Network Operation &amp; Maintenance</em> (YTSN3W) courses are recommended prerequisites.</td>
</tr>
<tr>
<td><strong>MASTR III Station Maintenance (YTSP3T)</strong></td>
<td>This course covers the theory of operation and maintenance procedures for the MASTR III Station that is used in either a conventional or trunked configuration. Frequency bands covered include VHF-HI, UHF, and 800 MHz. Hands-on laboratory exercises on testing and aligning RF modules, and setting station levels allow for optimal learning. This includes performing bench alignments utilizing the TQ0650 test fixture, as well as field alignments and frequency changes utilizing RF module extender cards. Prior completion of the <em>RF Test &amp; Troubleshooting</em> (YTSP5U) and <em>Advanced RF Fundamentals</em> (YTSN5E) courses is highly recommended.</td>
</tr>
</tbody>
</table>
P25 System Maintenance Training (continued)

P25 Simulcast System Maintenance (YTSN8H)

This course provides technicians with the knowledge and skills to operate, maintain, and troubleshoot a P25 simulcast system. Topics include simulcast system operation and concepts, such as capture and non-capture zones and delay spread, signal flow, GPS timing synchronization and alignment, Distributed Control Point architecture and configuration, bypass operation, and system troubleshooting and replacement of failed components. Prior completion of the P25 System Maintenance (YTSN6D) and MASTR V Station Maintenance (YTSN8G) courses is a prerequisite.

P25 Master Technician (YTSN9T)

This hands-on course focuses on advanced topics and system troubleshooting techniques for experienced P25 system technicians. Procedures to monitor, analyze, and isolate problems are discussed and practiced using the Training Center’s radio system. Actual faults are installed in the system to simulate typical on-the-job scenarios. At least six months of hands-on experience maintaining a P25 system, and completion of P25 System Maintenance (YTSN6D), Regional Network Manager (YTSN3V), Network Operation & Maintenance (YTSN3W), and either MASTR III Station Maintenance (YTSP3T) or MASTR V Station Maintenance (YTSN8G) courses are mandatory prerequisites for this training.
Operational Training

Overview

Operational training provides dispatch personnel and radio users with the knowledge and skills to operate their respective dispatch consoles and terminal products, and includes a course on radio programming.

Dispatch personnel are at the core of effective and efficient implementation of a radio system. While the time required for training is minimal, the payback is immense. A solid understanding of both console and system operation is required to effectively train dispatch personnel on the operation of a dispatch console. Therefore, our instructor conducts dispatch console operational training directly for dispatchers and their supervisors. A train-the-trainer format is not recommended.

The importance of field equipment users understanding basic system operation and the operation of their portable and/or mobile radios must not be underestimated. We offer two options for providing user equipment operator training: train-the-user and train-the-trainer.

During radio programming training, participants learn to create a radio personality that meets operational requirements and is user friendly to facilitate effective communications.

Console Equipment Operator Training

This course provides dispatchers and their supervisors with the knowledge and skills to operate the Symphony Dispatch Console. The customer’s operational consoles are used during this training. The training includes a discussion on the differences between conventional and trunked radio systems, if applicable, an overview of the customer’s system, and basic system operation. The training is held in small groups with no more than two people on an operating console. This maximizes the effectiveness of the hands-on portion of the training. Each training session is four hours in length.

User Equipment Operator Training

We offer two options for providing user equipment operator training: train-the-user and train-the-trainer. The train-the-user option uses our instructors to conduct training directly to field personnel on the operation of the portable and mobile radios to be used in the system. The train-the-trainer option uses our instructors to conduct training for designated customer trainers who then instruct the rest of the radio users.

continued on next page
Operational Training (continued)

User Equipment Operator Training (continued)

Each of these options has certain benefits. The train-the-user option has the following benefits:

- Our instructors are training professionals who know how to transfer knowledge and skills to adults.
- Our instructors have the technical competency to answer radio and system operational questions with accuracy and confidence.
- Our instructors are motivated to perform this task.

There are two main benefits from using the train-the-trainer approach.

- The train-the-trainer approach is more cost effective. It takes less time for L3Harris to train designated customer trainers than it does for our instructors to directly instruct all end users.
- Designated customer trainers are more knowledgeable about the daily operation of their agencies and have an established relationship with the end users.

The following topics are included in both options:

- A comparison of conventional and trunked operation, and analog and digital voice (as applicable)
- An overview of the customer’s radio system
- A description of system operation including failure modes
- A discussion of radio/system coverage expectations
- A demonstration of radio operation including proper radio use
- Hands-on practice with the radios
- A discussion of basic radio care including battery maintenance

Train-the-user sessions are typically two-to-four hours in length to ensure adequate time for questions and answers. Participants are provided with high-quality, customized handouts for their respective radios for optimal learning.

Train-the-trainer sessions are typically one day in length. Customer trainers are provided with hard and soft copies of customized presentation material to allow for additional customization, if desired.
Operational Training (continued)

XL-200P Radio Programming & Operation (YTSN6X)

This course provides in-depth instruction on programming and operating the XL-200P radio for system administrators, technicians, and anyone else who needs the knowledge and skills to create a radio personality to meet operational needs. Although the course focuses on the XL-200P radio when attended at the L3Harris Technical Training Center, it is beneficial for anyone who needs to learn radio programming using the Radio Personality Manager 2 (RPM 2) application.

In this course, participants learn the process of creating a master radio personality using RPM 2. This includes creating frequency and group sets to build “systems/zones,” and selecting radio options (i.e., power-up options, display settings, alert tones, timer settings, emergency features, supervisory features, etc.). The operational impact of selecting different options is explored and the modification of existing radio personalities is addressed. The training also includes manually generating and loading encryption keys using the Key Manager application.

If conducted on site, the training can be customized based on the specific radio models used by the customer. The training will use equipment and software (e.g., radios, computers, programming cables, key loaders, etc.) provided by the customer. It is essential that at least one computer, loaded with the applicable software, is provided for every two participants for optimal learning.

Student Feedback

“Even with all our questions, the instructor kept us focused. This was a great class.”
Network & RF Core Training

Overview

L3Harris’s VIDA network architecture requires radio system technicians and administrators to have a solid understanding of IP networks. The Introduction to Networking (YTSN2X) course provides participants with fundamental knowledge of IP networks.

RF core training provides a technician with a solid RF foundation that system and terminal product maintenance training courses will build upon. This training is applicable to any trunked or conventional system configuration and consists of the following courses:

- RF Test & Troubleshooting (YTSP5U)
- Advanced RF Fundamentals (YTSN3E)
- Grounding & Surge Suppression (YTSN5Y)

Introduction to Networking (YTSN2X)

This course is for system technicians and administrators, and anyone else who requires a solid understanding of the fundamental principles of installing and supporting networks. This course is based upon the CompTIA Network+ certification learning objectives. Topics include network media and devices; addressing and routing; network applications; network security; and network management, monitoring, and troubleshooting.

In addition to building a solid knowledge foundation of networking principles, this course will help prepare an individual to achieve CompTIA Network+ certification. This certification ensures that the successful candidate has the important knowledge and skills necessary to manage, maintain, troubleshoot, install, operate and configure basic network infrastructure.

This course is a highly-recommended prerequisite for individuals who have never had any formal network training and plan to attend the Network Operation & Maintenance (YTSN3W) course.

RF Test & Troubleshooting (YTSP5U)

This course is highly recommended for technicians who have never had formal training on standard tests for two-way radios. Participants learn how to conduct and interpret the results of both standard transmitter and receiver tests in accordance with the standards published by the Electronic Industries Association (EIA). Technicians will gain knowledge and experience in operating test equipment and following procedures to test two-way radios using a systematic approach to troubleshooting. Prerequisite knowledge of basic electronics, major two-way FM radio components, and common test equipment are highly recommended.
Network & RF Core Training (continued)

Advanced RF Fundamentals (YTSN3E)

This course provides technicians with the fundamental knowledge and skills needed to maintain a two-way radio system by exploring the radio’s environment. This includes radio frequencies, lightning, grounding, telephone lines, and station control. The performance of the RF carrier for different frequency bands through cables, antennae, and the airway is evaluated. Technicians will learn about RF propagation and system coverage expectations, as well as problems (i.e., intermodulation, frequency congestion and desensitization) and solutions in the RF environment. Hands-on exercises include tuning cavities, combiners, and duplexers. The course also includes a discussion and hands-on exercises on telephone line characteristics and requirements with emphasis on E&M, tone, and DC station control. Prior completion of the RF Test & Troubleshooting (YTSP5U) course is highly recommended.

Grounding & Surge Suppression (YTSN5Y)

This course covers the bases of the L3Harris grounding and surge suppression guidelines. Topics include lightning basics; site design to minimize susceptibility to lightning damage; buried ground system components and installation techniques; exterior radio site grounding; interior single point grounding; AC and DC power system grounding; surge suppression types and proper location for maximum effectiveness; special grounding situations such as roof-tops and dispatch centers; soil resistivity testing; ground system testing; and site grounding preventive maintenance and inspection. The course includes a site visit and hands-on training with ground testing equipment to allow technicians to become familiar with the equipment and different test techniques.

Student Feedback

"Amazing instructor and has limitless knowledge. Answered all questions and concerns."
Portable & Mobile Radio Maintenance Training

Overview

Bench technicians responsible for maintaining portable and mobile radios should first complete the RF Test & Troubleshooting (YTSP5U) course, which is part of the RF Core Training program, and then attend applicable radio maintenance courses.

Radio maintenance courses are available on the XL family of portable and mobile radios, and portable and mobile radios that use Open Multimedia Application Platform (OMAP) microprocessors. Radios that use OMAP microprocessors, such as the XG-75P and XG-75M, have common software and similar maintenance procedures, which allows us to deliver training on the portable families of radios in one course and the mobile families of radios in a second course. Radio maintenance training is based on the field serviceability plan established for that specific radio.

XL-200P Radio Maintenance (YTSN4A)

This course provides technicians with the knowledge and skills to program, test and maintain the XL-200P portable radio in accordance with the maintenance manual. Upon completion of the training, technicians will be able to install a maintenance personality into the radio for use during standardized testing; setup and perform standard transmitter and receiver tests on the radio using a P25-capable service monitor; disassemble and reassemble the radio; install the LTE module into the radio; perform automatic test and alignment on the radio using the Cobham (Aeroflex) 3920B service monitor and Auto Test software; perform select alignments independent of the AutoTest software; and upgrade the software in the radio. This course is also applicable to the XL-185P portable radio.

XL-200M Radio Maintenance (YTSN4V)

This course will provide technicians with the knowledge and skills to maintain the XL family of mobile radios to include the XL-200M and the XL-185M. During this course, technicians will learn how to program, operate, and maintain the XL mobile radio. Hands-on exercises include programming the radio for manual testing, and conducting standard transmitter and receiver performance tests using a P25-capable test set. Radio alignment will be reviewed and conducted per the field serviceability plan of the radio using communication test equipment that supports L3Harris automatic testing and tuning. Technicians will also learn how to perform software maintenance and will be fully prepared to conduct any field maintenance on an XL mobile radio.
Portable & Mobile Radio Maintenance Training (continued)

**OMAP Portable Radio Maintenance (YTSN8J)**

This course provides in-depth discussion and hands-on exercises to maintain L3Harris portable radios that utilize Open Multimedia Application Platform (OMAP) microprocessors. Technicians will participate in classroom presentations and discussions on radio programming for testing as well as radio personality modification to meet specific needs. Radio disassembly will be demonstrated and discussed, and field replaceable parts and service tools will be identified. Individual radio field serviceability plans including field replaceable modules and components will be covered. Hands-on exercises include radio programming, testing, and maintenance to the level authorized by the field serviceability plan.

**OMAP Mobile Radio Maintenance (YTSN8K)**

This course provides in-depth discussion and hands-on exercises to maintain L3Harris mobile radios that utilize Open Multimedia Application Platform (OMAP) microprocessors. Installation of the mobile radios, including the CH721 and CH25 control units, will be discussed. Technicians will participate in classroom presentations and discussions on radio programming for testing as well as personality modification to meet specific needs. Disassembly of the radios and control units will be demonstrated and discussed, and field replaceable parts and service tools will be identified. Individual radio field serviceability plans including field replaceable modules and components will be covered. Hands-on exercises include radio wiring installation, programming, testing, and maintenance to the level authorized by the field serviceability plan.

**Mobile Radio Installation (YTSN7U)**

This course is designed for personnel tasked with the installation of mobile radios in a typical land vehicle, which excludes trains, buses, fuel or munitions vehicles. Course topics include installation planning and preparation; safety considerations; pre-installation tasks; installation of the antenna, cables, radio, and control head; and post-installation inspection, testing, and troubleshooting. Additionally, installers will learn about basic radio operation, and programming software applications and personalities. This course can be customized for a specific mobile radio operating in a specific system configuration.
On-Site Radio Maintenance Training

Customized on-site training is available on portable and mobile terminal products including those not covered in standard courses offered in Lynchburg. This includes legacy radios such as the P7100 and M7100 models.

The customer must provide the facility, and any tools and equipment needed to support the hands-on portion of the training for on-site radio maintenance training. Contact the Training Manager for further information.
## OpenSky System Management Training

### Overview

OpenSky system administrators and managers have the overall responsibility for defining and maintaining the system's configurable parameters. This role has evolved as radio systems have become larger and more complex. The responsibilities include the following:

- Defining wide-area roaming capabilities
- Planning radio feature usage and profiles/personalities
- Configuring dispatch consoles
- Maintaining unit and group databases
- Enabling and disabling subscriber units
- Generating reports
- Monitoring system performance

### OpenSky System Administration (YTSN6E)

This course is strongly recommended for individuals responsible for system implementation and management. It provides an understanding of terminology, equipment, components, and operational processes associated with OpenSky. The topics covered include radio personalities, system database configuration options, fleet mapping, and implementation processes.

### Console Configuration (YTSN3H)

This course provides dispatch supervisors and system administrators and managers with the knowledge and skills to configure the Symphony Dispatch Console including operational functions and screen layout. Participants learn how to setup the operation and layout of the console using the applicable configuration program.

### Unified Administration System (YTSN6B)

The purpose of this course is to provide system administrators and managers with the ability to create and maintain system databases using the Unified Administration System (UAS). This hands-on course requires an in-depth understanding of the job functions within the customer’s organization as well as an operational understanding of the radio system. Course topics include logging into the UAS, establishing user accounts, navigating through the user interface, creating and changing parameter values, and adding/deleting radio users and talk groups. Completion of the OpenSky System Administration (YTSN6E) course is a prerequisite.
OpenSky System Management Training (continued)

Regional Network Manager (YTSN3V)

This course provides system administrators and managers with the ability to monitor and manage the system using the Regional Network Manager (RNM). Course topics include system access, monitoring the status of system equipment, identification and acknowledgement of system faults, historical views of system performance, exploring real-time viewers, and running activity and status reports on system performance.
OpenSky System Maintenance Training

Overview

An OpenSky system maintenance technician must be familiar with all aspects of system operation and maintenance. System maintenance training provides technicians with the knowledge and skills needed to conduct preventive maintenance, troubleshoot problems, and take corrective action.

OpenSky Site Equipment Maintenance (YTN5C)

The purpose of this course is to provide technicians with the ability to troubleshoot and perform field-replaceable unit level maintenance on OpenSky high-profile and pole-mount site equipment. The equipment includes the Base Station Transceiver (BSX), Base Station Controller (BSC), High Power Amplifier (HPA) with duplexer or preselector/low noise amplifier, and associated base site backhaul and access routers. The course reviews system architecture, features, configuration, and field maintenance procedures.

Regional Network Manager (YTN3V)

This course provides technicians with the ability to monitor and troubleshoot the system using the Regional Network Manager (RNM). Course topics include system access, monitoring the status of system equipment, identification and acknowledgement of system faults, historical views of system performance, exploring real-time viewers, and running activity and status reports on system performance.

Network Operation & Maintenance (YTN3W)

This course introduces maintenance technicians to basic networking concepts and provides them with the ability to maintain the IP network and VIDA Application Server (VAS). Topics covered include IP addressing and basic routing, database backup and storage, router and switch configuration management, VAS configuration and failover operation, and disaster recovery of network components. Completion of the Regional Network Manager (YTN3V) course is a prerequisite. Additionally, the Introduction to Networking (YTN2X) course is a highly-recommended prerequisite for individuals who have never had any formal network training.
Tait-Powered DMR Tier III Training

Overview

The following three courses are recommended for network managers, communication engineers, technical support personnel, and maintenance technicians on the Tait-powered DMR Tier III system solution:

- DMR Tier III Configuration & Maintenance
- DMR Tier III EnableFleet Configuration & Management
- DMR Tier III Gridlink Configuration & Operation

Please note that on-site delivery of the DMR Tier III EnableFleet Configuration & Management and DMR Tier III Gridlink Configuration & Operation courses can each be reduced from 5 days to 2½ days if conducted consecutively with the DMR Tier III Configuration & Maintenance course.

DMR Tier III Configuration & Maintenance (YTSN4J)

This course provides participants with a working knowledge of setting up and supporting the operation of the Tait-powered DMR Tier III system. The course will help students become familiar with the key features of their new system. Topics include fleet management, mobile and portable radio configuration as well as network features, diagnostics, and basic maintenance.

Upon completion of this course, participants will be able to:

- Describe DMR subscriber numbering.
- Describe DMR call features.
- Demonstrate basic use of the subscriber unit programming software.
- Use the programming software to configure a subscriber unit to operate on a trunked network.
- Successfully upgrade the firmware in a subscriber unit.
- Describe features and architecture of the TB9300.
- Demonstrate configuration, monitoring, module replacement and testing of the TB9300.
- Demonstrate DMR site commissioning procedures.
- Perform fleet management tasks of the Network Management Interface.
- Perform configuration tasks of the Network Management Interface.
- Demonstrate operation of EnableMonitor.
Tait-Powered DMR Tier III Training (continued)

DMR Tier III EnableFleet Configuration & Management (YTSN4K)

This course allows students to understand key aspects of the EnableFleet system. The architecture and features of EnableFleet are introduced followed with significant practical sessions on how to manage radio configuration using the Manager and Client interfaces. A review of radio unit programming is used to create configuration templates and develop EnableFleet customization profiles.

Upon completion of this course, participants will be able to:

- Explain the fleet management features of EnableFleet.
- Describe the data sources managed by EnableFleet.
- Describe the features and functions of EnableFleet Manager.
- Describe the features and functions of EnableFleet Client.
- Define the scope of requirements for radio unit programming.
- Use the programming software to configure a radio unit to generate a group configuration template.
- Generate group customization profiles and perform device import to EnableFleet.
- Perform configuration and diagnostics of DMR Mobile IP.
- Demonstrate configuration and operation of EnableFleet Manager.
- Demonstrate operation of EnableFleet Client.

DMR Tier III Gridlink Configuration & Operation (YTSN4L)

This course introduces participants to the GridLink network architecture and numbering requirements. Practical sessions allow the student to get familiar with configuration of the SCADA Gateway and TD9300 Data Terminal.

Upon completion of this course, participants will be able to:

- Explain trunking.
- Describe DMR call types.
- Describe DMR call features.
- Describe DMR subscriber numbering.

continued on next page
DMR Tier III Gridlink Configuration & Operation (continued)

- Demonstrate basic use of the subscriber unit programming software.
- Use the programming software to configure a subscriber unit to operate on a trunked network.
- Explain the features of the DMR Network Management Interface.
- Perform fleet management tasks of the Network Management Interface.
- Explain the network features and benefits of the GridLink solution.
- Describe the architecture and features of the GridLink network.
- Describe the available GridLink data services, and call handling mechanisms.
- Describe channel management techniques and the application to a GridLink solution.
- Describe the key system engineering considerations for implementing a GridLink solution on a Tait-powered DMR Tier III network.
- Design a successful addressing scheme for GridLink.
- Demonstrate configuration of Tait-powered GridLink system.
- Integrate and test the GridLink solution.
The *P25 Conventional Configuration & Maintenance Course* is the recommended training for network managers, communication engineers, technical support personnel, and maintenance technicians on the Tait-powered P25 conventional system solution.

This course provides an advanced working knowledge of the Tait-powered P25 conventional system. The course covers system monitoring, basic fault diagnostics, the configuration of replacement parts, and the replacement of faulty modules.

Upon completion of this course, participants will be able to:

- Identify the devices and modules that make up the Tait-powered P25 conventional radio system.
- Monitor network status using Syslog and the Customer Service Software (CSS) and identify faulty devices or modules.
- Create backups of the network configuration.
- Exchange faulty repeater equipment (i.e., Reciter, Power Amplifier, Power Management Unit).
- Demonstrate the correct preparation of a spare repeater and CG.
- Demonstrate the correct procedure to upgrade the network software.
- Demonstrate the ability to troubleshooting the network and locate the fault.
### Tait-Powered P25 Trunking Training

#### Overview

The following three courses are recommended for network managers, communication engineers, technical support personnel, and maintenance technicians on the Tait-powered P25 trunking system solution:

- P25 Trunking Configuration & Maintenance
- P25 Trunking EnableFleet Configuration & Management
- P25 Trunking KMF Configuration, Administration & Management

Please note that on-site delivery of the *P25 Trunking EnableFleet Configuration & Management* and *P25 Trunking KMF Configuration, Administration & Management* courses can each be reduced from 5 days to 2½ days if conducted consecutively with the *P25 Trunking Configuration & Maintenance* course.

#### P25 Trunking Configuration & Maintenance (YTSN4N)

This course provides an advanced working knowledge of the Tait-powered P25 trunked system. The course covers system monitoring, basic fault diagnostics, the configuration of replacement parts, and the replacement of faulty modules.

Upon completion of this course, participants will be able to:

- Identify the devices and modules that make up the Tait-powered P25 trunked radio system.
- Monitor network status using SNMP and identify faulty devices.
- Monitor repeater status using the Customer Service Software (CSS) and identify faulty modules.
- Create backups of the network configuration.
- Exchange faulty network equipment (e.g., Universal Controllers).
- Exchange faulty repeater equipment (i.e., Reciter, Power Amplifier, Power Management Unit).

#### P25 Trunking EnableFleet Configuration & Management (YTSN4P)

This course allows students to understand key aspects of the EnableFleet system. The architecture and features of EnableFleet are introduced followed by practical sessions on how to manage radio configuration using the manager and client interfaces. A review of radio unit programming is used to create configuration templates and develop EnableFleet customization profiles.

*continued on next page*
Tait-Powered P25 Trunking Training (continued)

P25 Trunking EnableFleet Configuration & Management (continued)

Upon completion of this course, participants will be able to:

- Explain the fleet management features of EnableFleet.
- Describe the data sources managed by EnableFleet.
- Describe the features and functions of the EnableFleet Manager.
- Describe the features and functions of the EnableFleet Client.
- Define the scope of requirements for radio unit programming.
- Use the programming software to configure a radio unit to generate a group configuration template.
- Generate group customization profiles and perform device import to EnableFleet.
- Demonstrate configuration and operation of the EnableFleet Manager.
- Demonstrate operation of the EnableFleet Client.

P25 Trunking KMF Configuration, Administration & Management (YTSN4R)

This course is for customers who are implementing the Key Management Facility (KMF) on their Tait-powered P25 trunking radio system. The course includes an introduction to P25 encryption, Key Fill Device operation, and KMF configuration, operation and administration.

Upon completion of this course, participants will be able to:

- Demonstrate logging into the KMF server.
- Carry out the initial tasks a Security Officer must complete to prepare the KMF for use by Crypto Officers.
- Explain the effect of changing the system security settings.
- Carry out the initial tasks a Crypto Officer must complete to prepare the KMF to manage keys.
- Create provisioning keys and provision radios.
- Create and monitor key update tasks.
- Manage lost or stolen radios.
- Carry out diagnostics and manage problem radios.
- Demonstrate backing up and restoring the database.
- Demonstrate monitoring the KMF and retrieving log files.
## Tait-Powered Analog Simulcast IP Training

### Overview

The *Analog Simulcast Configuration & Maintenance Course* is the recommended training for network managers, communication engineers, technical support personnel, and maintenance technicians on the Tait-powered Analog Simulcast IP system solution.

### Analog Simulcast Configuration & Maintenance (YTSN4S)

This course enables participants to perform key system support and maintenance tasks on the Tait-powered Analog Simulcast IP (AS-IP) system and includes TB9400 configuration and maintenance.

Upon completion of this course, participants will be able to:

- Identify the devices and modules that make up the Tait-powered Analog Simulcast radio system.
- Monitor network status using Syslog and the web interface, and identify faulty devices or modules.
- Create backups of the network configuration.
- Exchange faulty repeater equipment (i.e., Reciter, Power Amplifier, Power Management Unit).
- Demonstrate the correct preparation of a spare repeater and CG.
- Demonstrate the correct procedure to upgrade the network software.
- Demonstrate the ability to troubleshooting the network and locate the fault.
L3Harris Technical University

Overview

The importance of properly trained personnel cannot be overstated. Often, radio users, dispatchers, and technical personnel only receive training during initial implementation of a radio system. How much of this training is absorbed and retained? How many operational features are not being used correctly, if at all? How many tasks are not being performed properly?

L3Harris Technical University consists of asynchronous training courses that effectively deliver ongoing training and reinforce knowledge transfer that took place during instructor-led training. Web-based training builds the confidence of personnel by improving their knowledge of system operation and skills to operate their equipment, which will enhance performance and reduce the number of trouble reports. L3Harris Technical University can also be used to augment training for new personnel due to turnover.

Benefits

The benefits of an asynchronous training approach are numerous and include the following:

- Training is accessible whenever it is needed (24 hours a day, seven days a week) from any location that has access to the Internet.
- Courses are self-paced, highly interactive, and developed utilizing animation and other multimedia tools to help keep students engaged, which increases retention.
- It is cost-effective, especially when student or instructor travel and living expenses associated with attending standard classroom instruction are considered.
- Training delivery is consistent and structured to ensure learning objectives are met.

Available Asynchronous Training Packages

L3Harris offers the following asynchronous training packages:

- P25 System Management
- Radio Operation
- Console Operation
- Radio Programming
- BeOn Operation

Each package includes unlimited access to the training modules for one year. Additional modules are added to the training packages as developed and applicable at no additional cost if you have an active account.
The P25 System Management Asynchronous Training Package is comprised of the following training modules:

- P25 Fleet Mapping Overview
- XL-200P Radio Operation
- Symphony Console Operation
- Radio Programming Overview
- Radio Personality Manager (RPM and RPM 2)
- Advanced Access Control (AAC)
- Unified Administration System (UAS) Overview
- UAS “How to…”
- Regional Network Manager (RNM) Overview
- Active Directory
- Activity Warehouse
- Enterprise Network Manager (ENM) Overview
- Over-The-Air Programming (OTAP)
- Over-The-Air Rekeying (OTAR) Fundamentals
- OTAR “How to…”
- Inter-RF Subsystem Interface (ISSI) Fundamentals

This package is automatically provided to P25 system administrators and managers who attend the P25 System Implementation Workshop (YTSN9N). It can also be purchased by an incumbent P25 system administrator or manager for $1,500. Access can be renewed for a second year for $1,000.
L3Harris Technical University (continued)

Radio Operation
Asynchronous Training Package

The Radio Operation Asynchronous Training Package includes access to all radio operational courses. This is especially beneficial to end users who operate and require training on both portable and mobile radios.

The following is a screen capture from the XL-200P Radio Operation Course.

This package can be purchased for $60 for one radio user. Contact the Training Manager by e-mail at pspc_training@L3Harris.com or call 1-800-528-7711 (option #1) for bulk pricing information.

Console Operation
Asynchronous Training Package

The Console Operation Asynchronous Training Package includes access to the Symphony Dispatch Console Operation course and covers tasks such as making and receiving group calls, making and receiving individual calls, responding to emergency calls, creating patches and simulselects, and much more.

This package can be purchased for $180 for one dispatcher. Contact the Training Manager by e-mail at pspc_training@L3Harris.com or call 1-800-528-7711 (option #1) for bulk pricing information.

Customer Feedback

“We found the training to be a very effective and easy way to efficiently inform our users on the new radios and system we deployed in early August. The ability to have a consistent message provided to our entire user base was valuable as this minimized the transition difficulties with users understanding the operational changes that come with equipment upgrades.

The tracking and reporting information was also helpful in managing the training provided. A very nice product that helps with our P25 migration.”
Radio Programming Asynchronous Training Package

The Radio Programming Asynchronous Training Package is comprised of the following training modules:

- Radio Programming Overview
- Radio Personality Manager (RPM and RPM 2)
- Advanced Access Control (AAC)

The following is a screen capture from the AAC Course.

This package can be purchased for $200 for one technical person.

BeOn Operation Asynchronous Training Package

The BeOn Operation Asynchronous Training Package is comprised of operation courses for both Android and iOS devices. The following is a screen capture from the BeOn for iOS Operation Course.

This package can be purchased for $1,000 for up to 100 BeOn users.
L3Harris can provide a designated customer individual with administrative rights to the L3Harris Technical University Learning Management System so that you can directly assign specific training courses to students, monitor student activity and progress in completing courses, and generate reports. Contact the Training Manager by e-mail at pspc_training@L3Harris.com or call 1-800-528-7711 (option #1) for more information about the requirements to access the Learning Management System.

L3Harris can provide a quotation to customize any radio operation training course. The cost is based on the scope of changes. Typical customization tasks include incorporating the customer’s system and talk group structure, deleting radio functionality not provided or used (e.g., individual call capability), and replacing photographs with customer provided pictures.
Virtual Classroom Training

Overview

The L3Harris Technical Training Department conducts regularly scheduled open-enrollment courses and offers customized instructor-led training over the Internet using Adobe Connect. This virtual classroom environment is ideal for transferring knowledge when hands-on instruction isn’t required and provides customers with a cost savings by eliminating travel and living expenses for the instructor and students. Additionally, we limit each virtual classroom session to four hours per day to allow participants to perform their normal job duties during the remainder of the day.

Adobe Connect is a feature rich solution for conducting virtual classroom instruction. Features include the following:

- The instructor can share assorted media such as PowerPoint presentations and videos, as well as radio system specific applications such as the Unified Administration System, Device Manager, and Radio Personality Manager.
- The instructor and students interact using notes, Q&A, chat, polling, and a virtual whiteboard.
- The instructor and students can share their screens.

The following is a screen capture from a virtual classroom session.
Virtual Classroom Training (continued)

**Equipment Requirements**

Student computers must meet the following minimum requirements:

- Microsoft Windows 7, Windows 8 or Windows 8.1 (32 bit / 64 bit), Windows 10 (64 bit)
- 1.4 GHz Intel Pentium* or faster processor
- 512 MB of RAM (1 GB recommended) for Windows 7 or 8
- Microsoft Internet Explorer 11 or later, Mozilla Firefox or Google Chrome
- Adobe Flash Player 11.2+

Audio is provided through VoIP and/or telephone.

The recommended minimum bandwidth access for student computers is 512 Kbps.

---

**Procurement**

Contact the Training Manager to discuss the content, overall length, and scheduling of the desired customized virtual classroom training course. L3Harris recommends that each day of virtual classroom instruction is limited to four hours and that the training is delivered over consecutive days, as required. For example, 16 hours of instruction is conducted over four consecutive days.

The total price for a customized virtual classroom training course is calculated based on the number of four-hour sessions. The price for each four-hour session is $2,000. Each session may have up to 12 students and each student will be provided with an electronic copy of the presentations used during the training.

---

**Student Feedback**

“I want to thank you for the P25 Overview and UAS training that was completed this week. I want to let you know the Adobe Connect virtual version of the course was great. We were able to play L3Harris Jeopardy and take quizzes allowing everyone to test their understanding. Very professional and a lot of attention to detail was put into it to make sure we got all the instructor could fit into 16 hours. The instructor made us feel like he was actually standing in front of the class.

I really appreciate the effort and support put into making this class a success and I look forward to coordinating one of these again in the future.”

Satisfied Customer
**Enrollment Information**

**When to Enroll**

Registration for classes will be accepted until the business day before a class is scheduled to begin. However, it is a good idea to enroll as soon as possible to ensure a seat is available in the course on the dates you would like to attend.

**How to Enroll**

You can enroll by completing and submitting a Training Registration Form online at www.harris.com/solution/pspc-technical-training. A Training Registration Form is also included in this catalog. You can e-mail the completed registration form to pspc_training@L3Harris.com or fax the form to (434)455-6788.

**Enrolling in the P25 Master Technician Course**

If you are enrolling in the *P25 Master Technician* (YTSN9T) course, you must complete an application in addition to the Training Registration Form. The two-page application is included in this catalog and is also available on our web page. The application serves two purposes. It allows the instructors to verify that the student meets the prerequisites for the course, which is designed for experienced P25 technicians. Secondly, it provides information about your system, which will be factored into the training. The completed application should be submitted to the Training Registrar along with your Training Registration Form.

**Enrollment Verification**

Upon receipt of your completed Training Registration Form, the Training Registrar will verify space availability in the course. If space is available and the appropriate prerequisite courses have been taken, you will receive a confirmation letter.

**Cancellation Policy**

The Training Registrar must receive a cancellation notice at least 10 working days prior to the start of the class if you are unable to attend. A cancellation fee will be charged if a student fails to cancel his/her registration in this time frame or does not attend the course. Substitutions may be made if someone else can attend in his/her place. Substitutes must meet applicable course prerequisites. The cancellation fee will be the normal fee for the course.
<table>
<thead>
<tr>
<th>Enrollment Information (continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class Start &amp; Stop Times</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Attendance Requirements</strong></td>
</tr>
<tr>
<td><strong>Travel &amp; Lodging Arrangements</strong></td>
</tr>
<tr>
<td><strong>Schedule Changes</strong></td>
</tr>
<tr>
<td><strong>Canadian Customers</strong></td>
</tr>
</tbody>
</table>
# 2020 Training Schedule & Tuition

## P25 System Administrative Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Virtual Classroom</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN4F</td>
<td>P25 System Overview</td>
<td>Jan. 27 – Jan. 31</td>
<td>$1,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Apr. 20 – Apr. 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug. 3 – Aug. 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct. 19 – Oct. 23</td>
<td></td>
</tr>
<tr>
<td>YTSN4G</td>
<td>Unified Administration System</td>
<td>Feb. 3 – Feb. 5</td>
<td>$900</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Apr. 27 – Apr. 29</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug. 10 – Aug. 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct. 26 – Oct. 28</td>
<td></td>
</tr>
<tr>
<td>YTSN4H</td>
<td>Regional Network Manager</td>
<td>Feb. 6 – Feb. 7</td>
<td>$600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Apr. 30 – May 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug. 13 – Aug. 14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oct. 29 – Oct. 30</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Virtual classroom sessions are conducted from 12:30 p.m. to 4:30 p.m. (Eastern Time Zone).  

## P25 System Maintenance Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Lynchburg, Virginia</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN9N</td>
<td>P25 System Implementation Workshop</td>
<td>Feb. 24 – Feb. 28</td>
<td>$3,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>June 1 – June 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug. 31 – Sept. 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nov. 16 – Nov. 20</td>
<td></td>
</tr>
<tr>
<td>YTSN6D</td>
<td>P25 System Maintenance</td>
<td>March 3 – March 11</td>
<td>$3,220</td>
</tr>
<tr>
<td></td>
<td></td>
<td>July 14 – July 22</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>December 1 – December 9</td>
<td></td>
</tr>
<tr>
<td>YTSN3V</td>
<td>Regional Network Manager</td>
<td>March 12 – March 13</td>
<td>$920</td>
</tr>
<tr>
<td></td>
<td></td>
<td>July 23 – July 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>December 10 – December 11</td>
<td></td>
</tr>
<tr>
<td>YTSN3W</td>
<td>Network Operation &amp; Maintenance</td>
<td>March 16 – March 19</td>
<td>$1,840</td>
</tr>
<tr>
<td></td>
<td></td>
<td>July 27 – July 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>December 14 – December 17</td>
<td></td>
</tr>
<tr>
<td>YTSN8G</td>
<td>MASTR V Station Maintenance</td>
<td>March 30 – March 31</td>
<td>$920</td>
</tr>
<tr>
<td></td>
<td></td>
<td>September 21 – September 22</td>
<td></td>
</tr>
<tr>
<td>YTSN8H</td>
<td>P25 Simulcast System Maintenance</td>
<td>April 1 – April 3</td>
<td>$1,380</td>
</tr>
<tr>
<td></td>
<td></td>
<td>September 23 – September 25</td>
<td></td>
</tr>
<tr>
<td>YTSP3T</td>
<td>MASTR III Station Maintenance</td>
<td>April 6 – April 10</td>
<td>$2,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>September 14 – September 18</td>
<td></td>
</tr>
<tr>
<td>YTSN9T</td>
<td>P25 Master Technician</td>
<td>April 13 – April 17</td>
<td>$3,150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>September 28 – October 2</td>
<td></td>
</tr>
</tbody>
</table>
### 2020 Training Schedule & Tuition (continued)

#### Network Core Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Lynchburg, Virginia</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN2X</td>
<td>Introduction to Networking</td>
<td>March 23 – March 27</td>
<td>$2,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>October 5 – October 9</td>
<td></td>
</tr>
</tbody>
</table>

#### RF Core Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Lynchburg, Virginia</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSP5U</td>
<td>RF Test &amp; Troubleshooting</td>
<td>February 10 – February 14</td>
<td>$2,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August 3 – August 7</td>
<td></td>
</tr>
<tr>
<td>YTSN3E</td>
<td>Advanced RF Fundamentals</td>
<td>March 23 – March 27</td>
<td>$2,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August 10 – August 14</td>
<td></td>
</tr>
</tbody>
</table>

#### Portable & Mobile Radio Maintenance Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Lynchburg, Virginia</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN4A</td>
<td>XL-200P Radio Maintenance</td>
<td>May 11 – May 12</td>
<td>$920</td>
</tr>
<tr>
<td></td>
<td></td>
<td>October 5 – October 6</td>
<td></td>
</tr>
<tr>
<td>YTSN4V</td>
<td>XL-200M Radio Maintenance</td>
<td>May 13 – May 14</td>
<td>$920</td>
</tr>
<tr>
<td></td>
<td></td>
<td>October 7 – October 8</td>
<td></td>
</tr>
<tr>
<td>YTSN8J</td>
<td>OMAP Portable Radio Maintenance</td>
<td>February 24 – February 28</td>
<td>$2,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August 24 – August 28</td>
<td></td>
</tr>
<tr>
<td>YTSN8K</td>
<td>OMAP Mobile Radio Maintenance</td>
<td>June 1 – June 5</td>
<td>$2,300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>November 2 – November 6</td>
<td></td>
</tr>
</tbody>
</table>

#### Radio Programming & Operation Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Lynchburg, Virginia</th>
<th>Tuition</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN6X</td>
<td>XL-200P Radio Programming &amp; Operation</td>
<td>February 19 – February 20</td>
<td>$920</td>
</tr>
<tr>
<td></td>
<td></td>
<td>August 18 – August 19</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
Canadian customers should contact their sales representative for a quotation prior to enrolling in a standard open-enrollment course.
# 2020 On-Site Training Prices

## P25 System Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN5Z</td>
<td>P25 System Administration</td>
<td>4½ days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN6A</td>
<td>P25 Fleet Mapping Workshop</td>
<td>4 days</td>
<td>$18,450</td>
</tr>
<tr>
<td>YTSN3H</td>
<td>Console Configuration</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN6B</td>
<td>Unified Administration System</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN3V</td>
<td>Regional Network Manager</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN6C</td>
<td>Over-The-Air Rekeying</td>
<td>1 day</td>
<td>$5,700</td>
</tr>
<tr>
<td>YTSN9L</td>
<td>ISSI Configuration &amp; Administration</td>
<td>1 day</td>
<td>$5,700</td>
</tr>
<tr>
<td>YTSN6D</td>
<td>P25 System Maintenance</td>
<td>7 days</td>
<td>$31,600</td>
</tr>
<tr>
<td>YTSN3W</td>
<td>Network Operation &amp; Maintenance</td>
<td>4 days</td>
<td>$18,450</td>
</tr>
<tr>
<td>YTSN8G</td>
<td>MASTR V Station Maintenance</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSP3T</td>
<td>MASTR III Station Maintenance</td>
<td>3 days</td>
<td>$14,200</td>
</tr>
<tr>
<td>YTSN8H</td>
<td>P25 Simulcast System Maintenance</td>
<td>3 days</td>
<td>$14,200</td>
</tr>
</tbody>
</table>

## Operational Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSP5P</td>
<td>Console Equipment Operator Training</td>
<td>4 hours</td>
<td>Call</td>
</tr>
<tr>
<td>YTSP7R</td>
<td>User Equipment Operator Training</td>
<td>2 - 8 hours</td>
<td>Call</td>
</tr>
<tr>
<td>YTSN6X</td>
<td>Radio Programming</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
</tbody>
</table>

## Network Core Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN2X</td>
<td>Introduction to Networking</td>
<td>4½ days</td>
<td>$22,685</td>
</tr>
</tbody>
</table>

## RF Core Training

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSP5U</td>
<td>RF Test &amp; Troubleshooting</td>
<td>4½ days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN3E</td>
<td>Advanced RF Fundamentals</td>
<td>4½ days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN5Y</td>
<td>Grounding &amp; Surge Suppression</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
</tbody>
</table>

*continued on next page
## 2020 On-Site Training Prices (continued)

**Portable & Mobile Radio Maintenance Training**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN4A</td>
<td>XL-200P Radio Maintenance</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN4V</td>
<td>XL-200M Radio Maintenance</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN8J</td>
<td>OMAP Portable Radio Maintenance</td>
<td>4½ days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN8K</td>
<td>OMAP Mobile Radio Maintenance</td>
<td>4½ days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN7U</td>
<td>Mobile Radio Installation</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
</tbody>
</table>

**OpenSky System Training**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN6E</td>
<td>OpenSky System Administration</td>
<td>3½ days</td>
<td>$18,450</td>
</tr>
<tr>
<td>YTSN3H</td>
<td>Console Configuration</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN6B</td>
<td>Unified Administration System</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN3V</td>
<td>Regional Network Manager</td>
<td>2 days</td>
<td>$9,975</td>
</tr>
<tr>
<td>YTSN5C</td>
<td>OpenSky Site Equipment Maintenance</td>
<td>4 days</td>
<td>$18,450</td>
</tr>
<tr>
<td>YTSN3W</td>
<td>Network Operation &amp; Maintenance</td>
<td>4 days</td>
<td>$18,450</td>
</tr>
</tbody>
</table>

**Tait-Powered System Training**

<table>
<thead>
<tr>
<th>Course #</th>
<th>Course Name</th>
<th>Course Length</th>
<th>Price per Course*</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTSN4J</td>
<td>DMR Tier III Configuration &amp; Maintenance</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4K</td>
<td>DMR Tier III EnableFleet Configuration &amp; Management</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4L</td>
<td>DMR Tier III GridLink Configuration &amp; Operation</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4M</td>
<td>P25 Conventional Configuration &amp; Maintenance</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4N</td>
<td>P25 Trunking Configuration &amp; Maintenance</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4P</td>
<td>P25 Trunking EnableFleet Configuration &amp; Management</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4R</td>
<td>P25 Trunking KMF Configuration, Administration &amp; Mgmt.</td>
<td>5 days</td>
<td>$22,685</td>
</tr>
<tr>
<td>YTSN4S</td>
<td>Analog Simulcast Configuration &amp; Maintenance</td>
<td>4 days</td>
<td>$18,450</td>
</tr>
</tbody>
</table>

* The price for on-site training in the continental United States is listed in U.S. dollars. It includes materials for a maximum class size of ten (10) students and the instructor’s travel and living expenses. On-site training is scheduled by the Training Manager and typically requires three months of lead time to schedule. For an on-site training quotation outside the continental United States, contact the Training Manager, except for Canadian customers who should contact their sales representative.
Technical Training Team

Customer Commitment

Our Training Team is committed to providing the highest quality training to our customers whether attending a customized on-site course or a standard course at the Technical Training Center in Lynchburg, Virginia. To ensure a successful learning experience, customer training is delivered by our technical training staff that is comprised of training professionals with extensive experience in both adult learning and telecommunications. Each instructor is certified to ensure the trainer possesses the instructional skills and technical competencies to deliver high-quality training to our customers. Instructors are also evaluated regularly and participate in a continuing instructor development program to maintain and improve their technical and instructional knowledge and skills. The following is a profile of our team members.

Frank Ober

Frank is the Training Manager. He began his training career in 1979 as a U.S. Navy instructor, training the initial crews assigned to Trident missile submarines. After leaving the Navy, Frank joined Babcock & Wilcox (B&W) as a senior reactor operator instructor. From 1989 - 1995, he managed B&W's nuclear services training group. Frank joined GE/Ericsson in 1995 and has been the training manager since 1996.

Steve Clark

Steve rejoined L3Harris in 2018 after spending 25 years in the Law Enforcement community as both a police officer and most recently as the Training Coordinator for the Law Enforcement Division at the Virginia Department of Criminal Justice Services. His law enforcement career included nine years with York Regional Police in Southern Ontario, Canada and four years with the Lynchburg Police Department in Virginia.

Bruce Eck

Bruce started his technical training career with the U.S. Navy in 1995 training personnel on nuclear reactor systems. Upon leaving the Navy, Bruce became a senior instructor for AREVA, training equipment technicians on subjects ranging from basic electronics to robotic control systems and networking. Along with his training responsibilities, Bruce is the product manager for our web-based training programs. He has an Associates of Science and Technology (AST) degree with a Nuclear specialty and a Bachelor of Science and Technology (BST) in Electro-Mechanical Studies.
Technical Training Team (continued)

Ken Frank  
Ken holds a B.S. degree in Electrical Engineering and has worked in the communications business for over 20 years in product development, engineering and quality positions. Having also studied education in college, Ken feels blessed to work directly with our customers and share his knowledge of L3Harris systems through training.

Chris Jamerson  
Chris joined the Technical Training Team in 2011 after graduating from college with a B.S. in Digital Arts & Design and a M.S. in the Production of Interactive Multimedia. Chris has been instrumental in the advancement of the online training content provided to our customers. By incorporating state of the art graphics, intelligent instructional design concepts, and an outside the box mindset, he creates training that captivates students while providing them with the information needed to be successful.

Todd Keller  
Todd has over 25 years of experience working in the telecommunications field and specializes in network information assurance. Todd began his career in the U.S. Air Force where he served as a Communications Signals Analyst. After several field assignments, Todd was selected for instructor duty at the Center for Information Dominance in Pensacola, FL. There, he trained hundreds of multi-service military personnel and DoD civilians on RF and signals analysis techniques. He later went on to instruct a U.S. Cyber Command sponsored cyber operations and planning course. Todd holds an A.A.S. in Communications Technology and in Instructional Technology. He also holds the Air Force Master Instructor, CISSP, and Security+ certifications.

Randall Russell  
Randy has over 25 years of experience in electronics and working on L3Harris radio systems. He is a veteran of the U.S. Navy, where he worked as an Electronics Technician on shipboard HYDRA communication systems. After his military service, Randy worked on EDACS modem and GPS simulcast systems for the City of New Orleans, and City of Oklahoma City, respectively, and a P25 simulcast system for the County of St. Mary’s. He has achieved Master Technician status on both EDACS and P25 systems.
Technical Training Team (continued)

Scott Steph
Scott joined the Technical Training Team in 2015 after over 25 years in the information technology field as a certified trainer, network engineer, and college instructor. Scott spent 12 years designing and implementing global networks for WilTel, Autodesk Inc., and other Fortune 500 companies. Scott has a B.S. in Information Technology and his industry certifications include Network+, A+, and MCSE.

James Stinnett
James joined the Technical Training Team in 2013 after retiring from the U.S. Marine Corps (USMC). During his career as a Marine, James was responsible for the operation and maintenance of tactical radio and satellite communications systems as well as RF Spectrum Management to support military operations throughout the world. He began his training career in 2000 at the USMC Communications and Electronics School where he achieved his Senior and Master Instructor ratings. His love of teaching also led him to become a PADI Master Scuba Diver Trainer.
Training Registration Form

Date: ____________________

Training Course(s):

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Preferred Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student Information: (All information must be completed for registration confirmation.)

First & Last Name: ____________________________________________
Organization: ________________________________________________
Telephone Number: ____________________________________________
E-Mail Address: ______________________________________________

Person Making Reservation:

First & Last Name: ____________________________________________
Organization: ________________________________________________
Telephone Number: ____________________________________________
E-Mail Address: ______________________________________________

Method of Payment: (You must select one of the following billing options.)

1. _____ Check or Credit Card
2. _____ Contract
3. _____ Invoice:
   - Does your organization require a purchase order?  Yes _____ No _____
   - If yes, please include the PO number: ______________________________
     Billing Address:
     Company: ______________________________________________________
     Attention: ____________________________________________________
     Street Address: ________________________________________________
     City / State / Country: _________________________________________
     Postal Code: _________________________________________________

4. _____ L3Harris Employee

All registration requests must be in writing. One form per student please.

Return by Mail: L3Harris Corporation
                221 Jefferson Ridge Parkway
                Lynchburg, VA 24501
                Attention: Training Registrar

OR Fax: (434)455-6788
E-Mail: pspc_training@L3Harris.com
Thank you for enrolling in the P25 Master Technician course. Please complete this two-page application and return it to the Training Registrar along with your Training Registration Form. The instructors will use this information for course planning. One form per student is required.

Student’s Name: __________________________________________

Company/Organization: ______________________________________

Telephone Number: __________________________________________

E-Mail Address: ____________________________________________

Course Dates: ____________________________________________

Please indicate when you took the following prerequisite courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Dates</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>P25 System Maintenance (YTSN6D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Network Manager (YTSN3V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network Operation &amp; Maintenance (YTSN3W)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASTR III Station Maintenance (YTSP3T)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASTR V Station Maintenance (YTSN8G)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please circle your choices for your shirt:

Shirt Size: S M L XL 2X  Sleeve Length: Long Sleeve Short Sleeve

As a part of this course, your P25 system knowledge and troubleshooting skills will be assessed. Will your supervisor or manager want to know your results? Yes or No (please circle one)

If yes, complete the following:

Manager or Supervisor’s Name: __________________________________________

Company/Organization: ______________________________________

Telephone Number: __________________________________________

E-Mail Address: __________________________________________

Please briefly describe your radio system experience including the type of system, location, duties, and responsibilities.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
P25 Master Technician Course Application (cont.)

Complete the following to tell us about your P25 system and your responsibilities. This information will help us place you in appropriate teams, as well as help determine the troubleshooting problems used in this course.

RF Band: ___________ MHz  System Version (e.g., SR10A) _______________

Phase 1 or Phase 2: ______________

HAVE = I have this equipment in my system.
RESPONSIBLE = I am responsible for this equipment.

Place a "Y" for Yes in the appropriate field.

<table>
<thead>
<tr>
<th>P25 System/Equipment</th>
<th>Have</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Type (choose one)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Site System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multi-Site System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulcast System</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hybrid (Simulcast &amp; Multi-Site)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network Switching Center (NSC):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-High Availability (non-HA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Availability (HA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interoperability Gateway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISSI Gateway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIDA Telephone Interconnect (VTI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Stations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASTR III</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASTR V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispatch Consoles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C3 Maestro® Dispatch Console</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V® Console</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symphony Console</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Describe any areas of interest or concern:

__________________________________________________________________________
__________________________________________________________________________

Instructor Review: ___________________________  ___________________________  Approved

Signature  Date

Disapproved