CAT® MINESTAR™ SOLUTIONS

MINING TECHNOLOGY

TRAINING COURSE CATALOG

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How to Use This Course Catalog
This Training Course Catalog can be used to review the Cat® MineStar™ Training Offerings that are available and found on page 8. Individual Course descriptions are found in the Course Descriptions section starting on page 29. Individual courses make up each Training Offering. Once you decide on which Offering you would like to take, contact the MineStar Training Team to schedule a training.

20+ MineStar Training Offerings
The Training Course Catalog allows you to search in several ways; one of the most important is by MineStar Training Offerings. A MineStar Training Offering is made up of multiple individual courses which can be either eLearning or Instructor Led. The Offerings contain the high-level objectives, goals, and a list of the individual courses. For more details on each individual course, reference the individual course number in the Course Descriptions section. Since there are several individual courses, it's worth taking the time to look over the major headings before dipping into the details of each course. The Training Offerings are organized by Product: Fleet, Terrain, Detect, Health, Command and Edge.

How to Request Information for Training Offerings
Additional information for Training Offerings may be requested by sending an email to MineStar_Training@cat.com.

How to Read a Course Description
The Training Course Catalog provides details about each individual course to allow the reader to better understand what will be covered during the training. Below is a typical example of the information you can find about each course followed by what each part of the description represents.

FLTOF100: Overview and Basics (F)
This course covers an overview of Fleet Office, its capability sets in the suite of MineStar products, and key terms. It also includes basic system navigation such as page configurations, consoles, and desktops.

The description starts with an abbreviation of the product and the course number, followed by a descriptive title, and then more detailed elements:

- **Course prefix (*FLTOF*)** indicates the product and role the training is intended for. They are sometimes a little cryptic (this one is for Fleet Office), but generally most Training Offerings will contain courses with the same prefix.
- **Course numbers (*100*)** are typically either in the 100s, 200s, or 300s, which designate Foundational (100), Intermediate (200), or Advanced (300) courses. Students often find 100 level courses are excellent introductions to their fields of study, but many 200 level courses are perfectly appropriate for students with no prior knowledge of the field. The 200-level number may just mean the course has a more specific focus for the topic.
- **Course title (*Overview and Basics*)** provides a good shorthand statement of what the course is about.
- **Skill level (*F*)** indicates the skill level obtained with the course; Foundational (F), Intermediate (I), or Advanced (A). The course in the example is a Foundational course.

- **Course descriptions** are two to three-sentence descriptions that provide more detailed information about the course. In this example, you can see it focuses on an overview of Fleet Office, key terms, and basic navigation in the system.

- Indicates this is an eLearning course. You will take this course via our online ***Mining Technology Academy*** at your own pace. Many Training Offerings have eLearning courses that are required to be completed before attending the Instructor Led Training portion of the offering. If the eLearning icon is not present for a course, the course is an Instructor Led Training (ILT) course, which is taught in the classroom.

Training Overview

Investing in Cat MineStar products is just the first step in building business value at your site. Utilizing Cat MineStar to its full potential can help enhance safety, reduce costs, improve productivity, and boost efficiency. That's why the MineStar team provides a comprehensive suite of training opportunities that allows users to build skills from foundational to advance through web-based, instructor-led and on-the-job courses.

Training is based around job roles at either the customer site or the dealership, ensuring that users are trained on the functions they need to be effective and efficient in their daily work. Training spans the MineStar suite of products—Fleet, Terrain, Detect, Health, Command and Edge—and can be scheduled in combination or individually to allow your operation the flexibility and scalability it needs to be more productive, efficient, and safe.

Types of Training

Web-based Training: Also called **eLearning**, this method is the most portable and allows users to learn via videos, interactive digital courses, and other media types on a desktop, laptop or mobile/tablet device. Web-based training is usually foundational-level content. The majority of our eLearning content is accessed via our Mining Technology Academy (MTA). A link to MTA may be found at https://www.cat.com/minestartraining.

Instructor-led: Instructor-led courses are taught by a Subject Matter Expert (SME) and allow users to learn with others in a classroom environment using standardized materials. Our instructor-led training consists of interactive system exercises to equip users for real-world application of the products.

Simulation: Simulation training takes the classroom one step further and allows users to apply hands-on learning in an environment that mimics mine control operations. This type of instruction allows users to make mistakes and learn the system without having a negative impact on a live production environment.

On-the-job/ Practical: To gain familiarity with site specific procedures, we encourage on-the-job shadowing after completing training so that users can apply what they've learned to real-world application at their site.

Virtual Reality: VR technology takes training to the next level by immersing learners in a realistic simulated environment which can be set up in any safe and convenient location. VR training minimizes the amount of time equipment is pulled from production for use in training without sacrificing a learner's ability to learn through hands-on methods.

CAT® MINESTAR™ SOLUTIONS

Training Offerings

Mining and MineStar Core Curriculum

Introduction to Mining

Objective:
This course is a series of narrated videos explaining the basics of mining. The course begins with an overview of mining before exploring topics such as mine planning, mineral, and geological considerations, productivity and costs, mining equipment and software, and sustainable development.

Courses Available:
PRDOVR100: Introduction to Mining (F) - eLearning

Introduction to MineStar

Objective:
The Introduction to MineStar training consists of videos and presentations about Fleet, Terrain, Detect, Health, and Command. This training provides a brief introduction to the MineStar product suite to orient learners and customers on the benefits of this system.

Courses Available:
PRDOVR107: MineStar Product Overview (F) - eLearning

MineStar Reporting

Objective:
The MineStar Reporting training course will provide the knowledge and skills a candidate must demonstrate to be deemed competent to utilize the MineStar Reporting web application. This includes but is not limited to:

- Navigating the web application
- Utilizing the available features of MineStar Reporting administration account

Courses Available:
MSR100: MineStar Reporting Basic Navigation (F) – eLearning
MSR105: MineStar Reporting Administration Training (F) - eLearning

MineStar Product Support

Objective:
The MineStar Product Support training course will provide the knowledge and skills a candidate must demonstrate to be deemed competent to support the MineStar products and utilize the Technology Solution Center (TSC).

Courses Available:
MSA100: Introduction to Mining (F) - eLearning
MSA110: Introduction to MineStar Capability Sets (F) – eLearning
MSA115: Technology Solution Center (TSC) Overview (F) – eLearning
MSA116: Technology Solution Center (TSC) Terrain Enablement Sessions (F) – eLearning
MSA200: Introduction to the Technology Solution Center (I) - ILT
MSA210: TSC Case Escalation Requirements (I) – ILT

MineStar Administration

Objective:
The MineStar Administration training course will provide the knowledge and skills a candidate must demonstrate to be deemed competent to administer the MineStar system. This includes but is not limited to:

- MineStar processes and functionalities
- Installation
- Small Mine Model creation for simulation purposes
- Simulation methodologies
- Tasks needed to be performed for efficient operation of the system
- Utilization of network information to troubleshoot production issues
- Reviewing logs using Process charts
- Exploration of the customer's production logs and system information

Courses Needed:
MSA100: Introduction to Mining (F) - eLearning
MSA110: Introduction to MineStar Capability Sets (F) – eLearning
MSA200: Introduction to the Technology Solution Center (I) - ILT
MSA210: TSC Case Escalation Requirements (I) – ILT
MSA300: MineStar System Architecture (A) - ILT
MSA310: MineStar System Installation (SQL Server) (A) - ILT
MSA320: Building Small Mine Model (A) - ILT
MSA330: Model Simulation (A) - ILT
MSA340: MineStar System Administration (A) - ILT
MSA350: Field Communications Support (A) - ILT
MSA360: Process Charts (A) - ILT
MSA370: MineStar Log Review (A) – ILT

Fleet

Fleet Office - Controller

Objective:

The Fleet Office - Controller training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to utilize the Cat MineStar Fleet system at a mine site. This list contains a recommended training path for controllers. This training path is customizable for each site and learner. This includes but is not limited to:

- Identifying the pages and system configurations of the MineStar Fleet system
- Operation of the system
- Best practices
- Initial system setup

Courses Needed:

FLTOF100: Overview and Basics (F) - eLearning
FLTOF110: Introduction to the Spatial Mine Model (F) - eLearning
FLTOF120: Introduction to Material Tracking (F) - eLearning
FLTOF130: Introduction to Assignment (F) - eLearning
FLTOF140: Introduction to Fueling and TKPH (F) - eLearning
FLTOF150: Introduction to Delays (F) - eLearning
FLTOF160: Introduction to Cycles (F) – eLearning
FLTOF170: Introduction to Messaging (F) - eLearning
FLTOF180: General Processes (F) - eLearning
FLTOF200: Spatial Mine Model Building (I) - ILT
FLTOF210: Checking, Monitoring and Moving Machines (I) - ILT
FLTOF215: Fueling and TKPH (I) - ILT
FLTOF225: Material Tracking (I) – ILT
FLTOF235: Assignments (I) - ILT
FLTOF240: Assignment Troubleshooting (I) - ILT
FLTOF245: Delays (I) - ILT
FLTOF250: Cycles (I) - ILT
FLTOF255: Messaging (I) - ILT
FLTOF260: KPI Dashboards and Reporting (I) - ILT
FLTOF265: Field Comms and Onboard Files (I) - ILT

Fleet Office - Builder

Objective:

The Fleet Office – Builder training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to perform technical and admin tasks. This list contains a recommended training path for builders. This training is customizable for each site and learner. This includes but is not limited to:

- Identifying the pages and system configurations of the MineStar Fleet system
- Operation of the system
- Best practices

- Build and maintain the spatial mine model
- System administration

Courses Needed:

FLTOF100: Overview and Basics (F) - eLearning
FLTOF110: Introduction to the Spatial Mine Model (F) - eLearning
FLTOF120: Introduction to Material Tracking (F) - eLearning
FLTOF130: Introduction to Assignment (F) - eLearning
FLTOF140: Introduction to Fueling and TKPH (F) - eLearning
FLTOF150: Introduction to Delays (F) - eLearning
FLTOF160: Introduction to Cycles (F) - eLearning
FLTOF170: Introduction to Messaging (F) - eLearning
FLTOF180: General Processes (F) - eLearning
FLTOF200: Spatial Mine Model Building (I) - ILT
FLTOF205: Adding and Archiving Machines (I) - ILT
FLTOF260: KPI Dashboards and Reporting (I) - ILT
FLTOF270: Field Communication Support (I) - ILT
FLTOF280: Operators, Safety Items, Rosters and Shifts (I) - ILT
FLTOF300: System Architecture (A) - ILT
FLTOF310: System Administration (A) - ILT
FLTOF320: Spatial Mine Model Supervisor (A) - ILT
FLTOF330: Mining Block Management (A) - ILT
FLTOF340: Assignment Supervisor (A) - ILT

Fleet Onboard

Objective:

The Fleet Office - Onboard training will provide the knowledge and skills a candidate must demonstrate to be deemed competent in using a Fleet onboard screen to log in and out, view assignments, messages, activate delays, etc.

Courses Needed:

FLTON100: Operator Onboard Overview (F) – eLearning
FLTON105: Fleet Onboard Haul Truck (F) – ILT

Fleet Service - Level 1

Objective:

The Fleet Level 1 Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work installing the Cat MineStar Fleet system on a range of machine types. This includes but is not limited to:

- Identifying the components and system configurations of the MineStar Fleet system
- Foundational operation of the system
- System connections
- Initial system setup
- Global Navigation Satellite System (GNSS)

Courses Needed:
FLTSRV100: MineStar Fleet Onboard Introduction (F) – eLearning
FLTSRV110: Operator Onboard Overview (F) – eLearning
FLTSRV120: GNSS Fundamentals (F) – eLearning
FLTSRV121: Fleet Onboard Hardware Installation (F) – ILT
FLTSRV130: Networking Fundamentals (F) - eLearning
FLTSRV131: Fleet Onboard Initial Software Installation (F) – ILT
GENSRV101: Resources and Documentation (F) - eLearning
GENSRV102: General Routing and Installation of Harness Best Practices (F) - eLearning
GENSRV103: GNSS Fundamentals (F) - eLearning

Additional as Required:
FLTSRV151: Gen III Fleet Onboard (F) – ILT
FLTSRV161: Fleet Onboard for Sites with Command for Hauling (F) – ILT

Fleet Service - Level 2

Objective:
The Fleet Level 2 Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work as a Technician for Cat MineStar Fleet system. This includes but is not limited to:

- Installation and configuration of the Fleet Onboard software
- Commissioning the Fleet Onboard system
- Diagnosing and repairing faults with the Fleet Onboard system

Courses Needed:
FLTOF100: Overview and Basics (F) - eLearning
FLTOF110: Introduction to the Spatial Mine Model (F) – eLearning
FLTOF150: Introduction to Delays (F) - eLearning
FLTOF160: Introduction to Cycles (F) - eLearning
FLTSRV210: Fleet Onboard Display Configuration (I) – ILT
FLTSRV220: Fleet Onboard Commissioning (I) – ILT
FLTSRV230: Fleet Onboard Troubleshooting (I) – ILT
FLTSRV240: Fleet Onboard Troubleshooting via MineStar Client (I) – ILT
GENSRV201: GNSS Fundamentals (I) – ILT
GENSRV202: Network Fundamentals (I) – ILT
GENSRV203: MineStar Service and Support (I) – ILT

Additional as Required:
FLTSRV260: Fleet Onboard for Sites with Command for Hauling (I) – ILT

Fleet Underground - Level 1

Objective:
The Fleet Level 1 Underground training will provide the knowledge and skills a candidate must demonstrate in using Minetec systems.

Courses Needed:

UG_FLTOF101: Fleet Office Overview (F) – eLearning
UG_FLTOF102: VPC Basics and Systems Navigation (F) – eLearning
UG_FLTOF103: SMARTS™ Operator Navigation (F) – eLearning
UG_FLTSRV100: Vehicle PC Display (F) - ILT
UG_FLTSRV105: Service Offboard (F) - ILT
UG_FLTSRV110: Service Onboard (F) – ILT
UG_FLTSRV115_Detect Personal Node Operation (F) - ILT
UG_FLTSRV120: Basic System Administration (F) - ILT
UG_FLTOF170: Office Training (F) – ILT
UG_FLTOF180: Administrator Training (F) – ILT
UG_FLTSRV200: Detect Hardware - Troubleshooting and Maintenance (I) - ILT

Fleet Underground - Level 2

Objective:

The Fleet Level 2 Underground training will provide the knowledge and skills a candidate must demonstrate in using Cat MineStar Fleet Underground systems.

Courses Needed:

UG_FLTOF100: Fleet Office Overview (F) - ILT
UG_FLTOF190: General Processes (F) - ILT
UG_FLTOF200: Spatial Mine Model Building (I) - ILT
UG_FLTOF205: Adding and Archiving Machine (I) - ILT
UG_FLTOF210: Checking Monitoring and Moving Machines (I) - ILT
UG_FLTOF225: Material Tracking (I) - ILT
UG_FLTOF235: Assignments (I) - ILT
UG_FLTOF240: Assignment Troubleshooting (I) - ILT
UG_FLTOF245: Delays (I) - ILT
UG_FLTOF250: Cycles (I) - ILT
UG_FLTOF260: KPI Dashboards and Reporting (I) - ILT
UG_FLTOF265: Field Comms and Onboard Files (I) - ILT
UG_FLTOF270: Operators, Safety Items, Rosters, and Shifts (I) - ILT
UG_FLTOF275: Shift Change (I) - ILT
UG_FLTOF310: Systems Admin (A) – ILT

Terrain

Terrain Office - Grading & Loading

Objective:

The Terrain Grading and Loading Office training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Terrain Office systems for Grading and Loading applications. This includes but is not limited to:

- Identifying the different Terrain applications
- Listing the advantages of Terrain equipped sites
- Explaining the functionalities of the Terrain Office and Onboard applications
- Describing all system componentry
- Understanding the Terrain Office User Interface
- Listing all Services needed
- Descriptions of Machine Types with specific configurations, and onboard file types
- Using best practices and standard procedures when using all systems required by their role (Terrain for Grading & Loading and Drills, along with Command for Hauling) to promote safe and efficient operations
- Demonstrating proper communication and coordination between all operational roles within the Terrain Office environment

Courses Needed:

TEROF111: Terrain Overview (F) - eLearning
TEROF113: Terrain Grading and Loading Set Points (F) - ILT
TEROF115: Terrain User Interface (F) - eLearning
TEROF120: Terrain Services (F) - eLearning
TEROF125: Terrain Grading and Loading Machines (F) – eLearning
TEROF130: Terrain Grading and Loading Onboard Lists (F) - eLearning
TEROF135: Terrain Support Processes (F) - eLearning
TEROF160: Terrain Grading and Loading Material Identification (F) - ILT
TEROF170: Terrain Grading and Loading Machine Configuration Utility (F) - ILT
TEROF205: Terrain Bounding Regions and Groups (I) - ILT
TEROF210: Terrain Grading and Loading Design Files (I) - ILT
TEROF215: Terrain Grading and Loading Design File Management (I) - ILT
TEROF235: Terrain Grading and Loading As-Build Surface Files (I) - ILT
TEROF240: Terrain Grading and Loading Manage Projects (I) - ILT
TEROF250: Terrain Grading and Loading Avoidance Zones and Surfaces (I) - ILT
TEROF255: Terrain Grading and Loading Avoidance Zones and Surfaces with Remote Control (I) - ILT
TEROF260: Terrain Grading and Loading Automatic Ore Status Maintenance (I) - ILT
TEROF265: Terrain Manage Events (I) - ILT
TEROF270: Terrain Reports and Productivity Files (I) - ILT
TEROF280: Terrain General Troubleshooting (I) - ILT

Terrain Office - Drilling

Objective:

The Terrain Drilling Office training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Terrain Office systems for Drilling applications.

Courses Needed:

TEROF140: Terrain for Drilling User Interface (F) - ILT
TEROF145: Terrain for Drilling Machines (F) - ILT
TEROF150: Terrain for Drilling Onboard Lists (F) - ILT
TEROF155: Terrain for Drilling Messages (F) – ILT
TEROF225: Terrain for Drilling Patterns (I) - ILT
TEROF230: Terrain for Drilling Pattern Management (I) - ILT
TEROF245: Terrain for Drilling Projects (I) - ILT
TEROF275: Terrain for Drilling Cat Reports (I) - ILT

Terrain Onboard - Grading & Loading

Objective:

The Terrain Grading and Loading (G&L) Onboard training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Terrain onboard systems for Grading and Loading applications. This includes but is not limited to:

- Identifying the different onboard uses for Grading and Loading machine types
- Listing the advantages of Terrain-equipped machines
- Providing descriptions of machine types with specific configurations and onboard file types
- Describing all onboard system componentry
- Understanding the Terrain Grading and Loading User Interface
- Understanding procedures included in Starting of Shift and Shift Activities
- Demonstrating proper material identification for loading purposes

Courses Needed:

TEROF111: Terrain Overview (F) - eLearning
TEROF125: Terrain Grading and Loading Machines (F) - eLearning
TERON100: Terrain Overview (F) - eLearning
TERON101: G&L User Interface (F) - eLearning
TERON103: G&L Start of Shift (F) - eLearning
TERON105: G&L Shift Activities (F) - eLearning
TERON107: Terrain with Blade Control (F) - eLearning
TERON108: Managing Material Information (F) - eLearning
TERON110: LHD GIS Mode (F) - eLearning
TERON112: Fusion Terrain for Grade Control (F) - eLearning
TERON117: Grade Control In-Cab Operation (F) - eLearning
TERON122: AutoCarry and Blade Assist In-Cab Operation (F) - eLearning
TERSRV207: Terrain Blade Control Fusion (I) - ILT
TERSRV221: Terrain G&L Machine Configuration Utility (I) - ILT
TERSRV222: Terrain Grading and Loading Measure Up and Commissioning (I) - ILT

Terrain Onboard - Drilling

Objective:
The Terrain Drilling Onboard training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Terrain Onboard systems for Drilling applications. This includes but is not limited to:

- Identifying the different onboard uses for drilling machine types
- Listing the advantages of Terrain equipped machines
- Describing all onboard system componentry
- Understanding the Terrain Drilling User Interface
- Understanding procedures when starting a shift and other shift activities
- Understanding the use of Strata

Courses Needed:
TERON102: Drill User Interface (F) - eLearning
TERON104: Drill Start of Shift (F) - eLearning
TERON106: Drill Shift Activities (F) - eLearning
TERON111: Terrain Strata for Drilling (F) – eLearning
TERON125: Integrated Terrain for Drilling User Guide (F) - eLearning

Terrain Service - Grading & Loading Level 1

Objective:
The Terrain Service for Grading and Loading Level 1 training will provide the knowledge and skills for technicians that support the Cat MineStar Terrain for Grading and Loading Onboard system. This course introduces components, installation of the hardware, various system configurations, and initial software installation for the system.

Courses Needed:
TERON101: G&L User Interface (F) - eLearning
TERSRV100: Terrain System Overview (F) - eLearning
TERSRV101: Terrain Machine and Software Overview (F) - eLearning
TERSRV105: Terrain Service Kit (F) - eLearning
TERSRV111: Terrain Grading and Loading G610 Software Installation (F) - eLearning
TERSRV121: Terrain Grading and Loading Hardware (F) - ILT
TERSRV122: Terrain Grading and Loading Track Type Tractors ARO (F) - ILT
TERSRV123: Terrain Loading Hardware for Excavators / Front Shovels (F) - ILT
GENSRV101: Resources and Documentation (F) - eLearning
GENSRV102: General Routing and Installation of Harness Best Practices (F) - ILT
GENSRV103: GNSS Fundamentals (F) - eLearning

Additional as Required:
TERSRV131: Terrain Mobile (F) - ILT
TERSRV132: Terrain Onboard for Sites with Command for Hauling (F) – ILT

Terrain Service - Grading & Loading Level 2

Objective:
The Terrain Service for Grading and Loading Level 2 training will build on the learning from the Terrain Service for Grading and Loading Level 1 Training. This covers an introduction to Terrain Office, the configuration of the system, measure-up and calibration of single and dual antenna machines, and service and support of the system.

Courses Needed:
TEROF111: Terrain Overview (F) - eLearning
TEROF115: Terrain User Interface (F) - eLearning
TEROF125: Terrain Grading and Loading Machines (F) - eLearning
TERSRV221: Terrain G&L Machine Configuration Utility (I) - ILT
TERSRV222: Terrain Grading and Loading Measure Up and Commissioning (I) - ILT
TERSRV223: Terrain Loading Dual Antenna Excavator and Front Shovel Calibration (I) - ILT
GENSRV201: GNSS Fundamentals (I) – ILT
GENSRV202: Network Fundamentals (I) - ILT
GENSRV203: MineStar Service and Support (I) - ILT

Additional as Required:
TERSRV232: Terrain System for Sites with Command for Hauling (I) - ILT

Terrain Service - Drilling

Objective:
The Terrain Drilling Service training will provide the knowledge and skills for technicians that support the Cat MineStar Drilling and will provide an introduction to components, installation and configuration variations for Drill types, initial software installation, setup and configuration of the Terrain for Drilling system, calibration and service and support of the system.

Courses Needed:
TERSRV106: Terrain for Drilling Articulated Drills Hardware Install (F) - ILT
TERSRV107: Terrain for Drilling PLC Drill Hardware Install (F) - ILT
TERSRV108: Terrain for Drilling I/O Drills Hardware Install (F) – ILT
TERSRV135: Integrated Terrain for Drilling MD6200 Installation Guide (F) – eLearning
TERSRV140: Integrated Terrain for Drilling Setup and Configuration Guide (F) – eLearning
TERSRV145: Integrated Terrain for Drilling MD6380 Installation Guide (F) – eLearning
TERSRV150: Integrated Terrain for Drilling MD6250 Installation Guide (F) – eLearning
TERSRV155: Integrated Terrain for Drilling Strata Recognition Option (F) – eLearning
TERSRV160: MD6640 Rotary Drill Installation Guide (F) – eLearning
TERSRV210: Terrain for Drilling 6.x Image Backup (I) - ILT
TERSRV215: Terrain for Drilling 7.x Hardware Update (I) - ILT
TERSRV220: Terrain for Drilling 7.x Software Installation (I) - ILT
TERSRV225: Terrain for Drilling 7.x Software Upgrade (I) – ILT
TERSRV230: Terrain for Drilling Setup & Configuration (I) - ILT
TERSRV235: Terrain for Drilling 7.x Calibration (I) - ILT
TERSRV240: Terrain for Drilling Strata (I) – ILT
TERSRV305: Terrain for Drilling File Structure (A) - ILT
GENSRV101: Resources and Documentation (F) – eLearning

Command

Command for Hauling Office/Onboard - SIM School

Objective:

The Command for Hauling Office/Onboard SIM School training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using MineStar Command for Hauling, and the related sub-systems. This includes but is not limited to:

- Understanding and applying all applicable Safe Work Procedures
- Using best practices and standard procedures when using all systems required by their role (Terrain, Aux Panel, Command for Hauling/Fleet Office, etc.) to promote safe and efficient operations
- Demonstrating proper communication and coordination between all operational roles within the Command for Hauling environment
- Identifying potential issues, and recommending corrective actions, as well as areas for efficiency gains

Courses Needed:

AHS_COMOF100: Introduction to Command for Hauling Office (F) – eLearning
AHS_COMOF205: Surface Management (I) – ILT
AHS_COMOF210: Surface Editor (I) – ILT
AHS_COMOF215: Lanes (I) – ILT
AHS_COMOF220: Zones (I) – ILT
AHS_COMOF230: Load Planning (I) – ILT
AHS_COMOF240: Dump Planning (I) – ILT
AHS_COMOF250: Stations (I) – ILT
AHS_COMOF260: Mine Model Management (I) - ILT
AHS_COMOF280: Autonomy Status Page (I) – ILT
AHS_COMOF285: Using Site Monitor (I) ILT
AHS_COMOF290: Traffic Management Page (I) – ILT
AHS_COMOF195: Autonomous Water Truck (F) – eLearning
FLTOF210: Checking, Monitoring and Moving Machines (I) - ILT
FLTOF215: Fueling and TKPH (I) – ILT
FLTOF225: Material Tracking (I) – ILT
FLTOF235: Assignments (I) - ILT
FLTOF240: Assignment Troubleshooting (I) - ILT
FLTOF245: Delays (I) - ILT
FLTOF250: Cycles (I) - ILT
FLTOF255: Messaging (I) - ILT
FLTOF260: KPI Dashboards and Reporting (I) - ILT
FLTOF265: Field Comms and Onboard Files (I) - ILT

Command for Hauling Service - Level 1

Objective:

The Command for Hauling Service Level 1 training is designed for Autonomous Technicians, trainers and supervisors that install the Cat Command for Hauling system in the Workshop and in the Autonomous Operating Zone. Training is role based and includes the following modules:

Courses Needed:

CFHSRV100: Intro to the Cat Autonomous Haul System (F) - ILT
CFHSRV110: Command for Hauling Common Components (F) - ILT
CFHSRV130: Command for Hauling Hydraulics (F) - ILT
CFHSRV140: Command for Hauling Maintenance Tasks (F) - ILT
CFHSRV150: Intro to MineStar for AHS Technicians (F) - ILT
CFHSRV190: Command for Hauling Foundational Troubleshooting (F) - ILT
GENSRV101: Resources and Documentation (F) - eLearning
GENSRV102: General Routing and Installation of Harness Best Practices (F) - eLearning
GENSRV103: GNSS Fundamentals (F) - eLearning
AHS_COMOF170: Introduction to the Autonomy Status Page (F) – eLearning
AHS_COMOF180: Introduction to the Site Monitor Page (F) – eLearning
AHS_COMSRV100: Introduction to the Cat Autonomous Haulage System (F) – eLearning

Additional as Required:

TERSRV100: Terrain System Overview (F) - eLearning
TERSRV101: Terrain Machines & Software Overview (F) - eLearning
FLTSRV100: MineStar Fleet Onboard Introduction (F) - eLearning
FLTSRV110: Operator Onboard Overview (F) - eLearning
FLTSRV121: Fleet Onboard Hardware Installation (F) – ILT
FLTSRV131: Fleet Onboard Initial Software Installation (F) – ILT
FLTSRV151: Gen III Fleet Onboard -Foundational (F) – ILT
FLTSRV161: Fleet Onboard for Sites with Command for Hauling - Foundational (F) – ILT
CFHSRV114: Cat 793F CMD Overview (F) – ILT
CFHSRV115: Cat 794AC CMD Overview (F) – ILT
CFHSRV117: Cat 797F CMD Overview (F) – ILT
CFHSRV118: Komatsu 930e CMD Overview (F) – ILT

Command for Hauling Service - Level 2

Objective:

The Command for Hauling Service Level 2 training is designed for Autonomous Technicians, trainers and supervisors that setup, configure, calibrate and troubleshoot the Cat Command for Hauling system in the Office, workshop and in the Autonomous Operating Zone. Training is role based and includes the following modules:

Courses Needed:

CFHSRV210: Command for Hauling Common Components - Intermediate (I) - ILT
CFHSRV220: Setup and Configuration of Autonomy Layer (I) - ILT *
CFHSRV240: Autonomous System Calibrations (I) – ILT
CFHSRV250: AMT Operational Behaviors (I) - ILT *
CFHSRV260: Command for Hauling Troubleshooting - Intermediate (I) – ILT
GENSRV201: GNSS Fundamentals (I) – ILT
GENSRV202: Network Fundamentals (I) - ILT

* These courses are intended for internal and dealer audiences only

Command for Dozing Remote Console Operator

Objective:

The Command for Dozing Remote Console Operator training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to start up and operate the Command for Dozing Remote Operator Console on a range of machine types. This includes but is not limited to:

- Identifying the components and system configurations of the Command for Dozing Remote Console system
- Foundational and advanced operation of the system
- Basic Troubleshooting of the system

Courses Needed:

CDZOP110: Operator Console Training – eLearning
CDZOP140: RC Fusion Operator Training (F) – eLearning
CDZOP200: RC Fusion for Operators (I) – ILT
CDZOP210: Command for Dozing Line of Sight (I) – ILT

Command for Dozing Remote Console Service

Objective:

The Command for Dozing Remote Console Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work installing the Command for Dozing Remote Console system on a range of machine types. This includes but is not limited to:

- Identifying the components and system configurations of the Command for Dozing Remote Console system
- Foundational operation of the system
- System connections
- Initial system setup

Courses Needed:

CDZSRV100: Overview of Command for Dozing Remote Control Products (F) - ILT
CDZSRV105: A-Stop Training and Safety Overview (F) – ILT
CDZOP110: Operator Console for Operators (F) – ILT
CDZSRV110: Operator Console for Service Technicians (F) - ILT
CDZSRV130: Hardware Component Overview for CFD (F) - ILT
CDZSRV140: Installing Hardware for Remote-Control (F) - ILT
CDZSRV240: Commissioning and Troubleshooting CFD Systems (I) – ILT

Command for Dozing Remote Station Operator

Objective:

The Command for Dozing Remote Station Operator training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to start up and operate the Command for Dozing Remote Operator Station on a range of machine types. This includes but is not limited to:

- Identifying the components and system configurations of the Command for Dozing Remote Station system
- Foundational and advanced operation of the system
- Basic Troubleshooting of the system

Courses Needed:
CDZOP120: Operator Station Training (F) - eLearning
CDZOP215: Command for Dozing Non-Line of Sight (I) – ILT

Command for Dozing Remote Station Service

Objective:
The Command for Dozing Remote Station Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work installing the Command for Dozing Remote Station system on a range of machine types. This includes but is not limited to:

- Identifying the components and system configurations of the Command for Dozing Remote Station system
- Foundational operation of the system
- System connections
- Initial system setup

Courses Needed:
CDZSRV100: Overview of Command for Dozing Remote Control Products (F) - ILT
CDZSRV105: A-stop Training and Safety Overview (F) – ILT
CDZOP120: Operator Station for Operators (F) - ILT
CDZSRV130: Hardware Component Overview for CFD (F) - ILT
CDZSRV140: Installing Hardware for Remote-Control (F) - ILT
CDZSRV150: Installing Vision System (F) - ILT
CDZSRV210: Installing Software on the Machine (I) - ILT
CDZSRV220: Installing Software on and Calibrating the Operator Station (I) - ILT
CDZSRV230: Calibrating, Operating, and Commissioning the Operator Console (I) - ILT
CDZSRV240: Commissioning and Troubleshooting CFD Systems (I) – ILT
CDZSRV255: D9/D10/D11 Next Generation for Service Technicians (I) – ILT

Command for Dozing (SATS) Operator

Objective:
The Command for Dozing (SATS) Operator training will provide the knowledge and skills for key concepts of training on using the Operator Station to operate a track-type tractor through remote control. It details topics including comparison between Operator Station Remote Control vs. Semi-autonomous Tractor System (SATS), working with the Vision System, Terrain with Blade Control and SATS Automated Features and shift procedures.

Courses Needed:
CDZOP120: Operator Station Training (F) - eLearning
CDZOP130: SATS for Operators (F) – ILT

Command for Dozing (SATS) Service

Objective:

The Command for Dozing (SATS) Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work installing the Command for Dozing SATS system on a range of machine types. This includes but is not limited to:

- Identifying the components and system configurations for Command for Dozing SATS
- Foundational operation of the system
- System connections
- Initial system setup
- Troubleshooting

Courses Needed:

CDZSRV100: Overview of Command for Dozing Remote Control Products (F) - ILT
CDZSRV105: A-stop Training and Safety Overview (F) – ILT
CDZSRV120: Operator Station for Service Techs (F) – ILT
CDZOP120: Operator Station Training (F) - eLearning
CDZSRV130: Hardware Component Overview for CFD (F) - ILT
CDZSRV140: Installing Hardware for Remote Control (F) – ILT
CDZSRV150: Installing Vision System (F) - ILT
CDZSRV210: Installing Software on the Machine (I) - ILT
CDZSRV220: Installing Software on and Calibrating the Operator Station (I) - ILT
CDZSRV230: Calibrating, Operating, and Commissioning the Operator Console (I) - ILT
CDZSRV240: Commissioning and Troubleshooting CFD Systems (I) – ILT
CDZSRV250: Command for Dozing Remote Control Operator Station and SATS - (I) – ILT

Command for Underground MXZ Service

Objective:

The Command for Underground MXZ Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to diagnose, repair, configure and troubleshoot the system. This includes but is not limited to:

- Identifying the components and system configurations of the Command for Underground MXZ
- Foundational operation of the system
- System connections
- Initial system setup
- Troubleshooting

Courses Needed:

UG_COMROS200: Operation Station - Hardware (I) – ILT
UG_COMROS300: Operator Station - Software (A) – ILT
UG_COMAA-MXZL100: Automation Area Overview (F) - ILT
UG_COMAA-MXZL110: Area Isolation System Overview (F) – ILT
UG_COMAA-MXZL200: Local Area Radio Network Overview (I) – ILT
UG_COMAA-MXZL210: LARN Components and Operation (I) – ILT
UG_COMAA-MXZL300: Area Isolation System (A) – ILT
UG_COMMAS200: Machine Automation System Components and Operation - Lite (I) - ILT
UG_COMMAS200: Machine Automation System Components and Operation (I) - ILT
UG_COMSYS250: MAS Operations Training (I) – ILT

Command UG MXY Operator Training *(course available upon request)*

Command for Underground Operator

Objective:

The Command for Underground Operator training aims to provide operators with the necessary skills to perform pre, post and maintenance operations on the Command for Underground system. The training also covers the operator station software and software functionalities as well as the correct operation techniques.

Courses Needed:

Command UG MXZ Operator training
UG_COMOP100_OperationsTraining Pre, Post & Maintenance (F) – ILT
UG_COMOP200_Operations Core (I) – ILT
UG_COMOP220_Operations Fleet (I) – ILT

Additional as Required:

UG_COMOP230: R1700K Line-of-Sight (I) – ILT

Command for Drilling Operator

Objective:

The Command for Drilling Operator training aims to provide operators with the necessary skills to operate the electric drilling system equipment. This includes but not limited to:

- Using the operator tablet
- Using the A-Stop device
- Differentiating between drilling modes
- Outlining the tasks of an operator while using these drilling systems

Courses Needed:

ADSON100: Electric Drills OMA and S-ADS (F) - ILT
ADSON200: Electric Drills Operator Tablet (I) - ILT
CFDON101: A-Stop Drill Operational Use (F) - ILT
CFDOP100: Command for Drilling OMA Operator Training (F) – eLearning
CFDOP110: Command for Drilling ROS Operator Training (F) – eLearning

Command for Drilling Service

Objective:

The Command Drilling Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to diagnose, repair, configure and troubleshoot the system. This includes but is not limited to:

- Identifying required service tools
- Installing and configuring A4:N4
- Installing and configuring A5:M6

Courses Needed:
ADSSRV200: Autonomous Electric Drilling System Hardware Installation (I) - ILT
ADSSRV210: Commissioning Electric ADS (I) – ILT
CFDSRV100: Command for Drilling OMA Service Training (F) - eLearning
CFDSRV110: Command for Drilling ROS Service and Commissioning Training (F) – eLearning

Health

Health – Machine Health Introduction

Objective:
Machine Health Introduction provides an outline of the extent of MineStar Health capabilities on a mine site. This set of courses include, but are not limited to the following topics:

- Cat MineStar Health Portfolio offerings
- Connectivity Enablers overview
- Application overview
- Services overview
- Health Onboard hardware overview

Courses Needed:
HEAOVR100: Health Portfolio Overview (F) – eLearning
HEAOVR110: VIMS and Product Link™ Training Overview (F) – eLearning
HEAOVR111: Onboard Hardware and Communications Overview (F) – eLearning

Health – Equipment Insights

Objective:
Health Equipment Insights is a powerful data visualization and reporting tool that allows users to create dashboards with interactive data and intuitive drill-down functions. The courses below will teach learners how to accomplish the following:

- Navigate the homepage
- Access Equipment Insights
- Manage Equipment Groups
- Manage Widgets
- Manage Dashboards
- Manage Reports
- Manage Time Series

Courses Needed:
HEI100: Health Equipment Insights Video Series (F) - eLearning
HEIOF100: Introduction to MineStar Health – Equipment Insights (F) - eLearning
HEIOF101: Access Equipment Insights (F) - eLearning
HEIOF105: Equipment Group (F) - eLearning
HEIOF110: Widget (F) - eLearning
HEIOF111: Widget Part 2 (F) – eLearning

HEIOF112: Widget Part 3 (F) - eLearning
HEIOF115: Dashboard (F) - eLearning
HEIOF120: Reports Scheduling (F) - eLearning
HEIOF125: Time Series (F) - eLearning
HEIOF130: Other MHEI Functionalities (F) - eLearning
HEIOF135: Equipment Insights Applied Analysis - Case Studies (F) – eLearning

Health – Technician Toolbox

Objective:

Technician Toolbox is a PC software application that enables service technicians to perform machine configuration files to compatible payload and VIMS system parameters and calibrate payload systems on the spot. Users can also trigger snapshots and activate VIMS dataloggers in order to gather critical machine health data. The available training material below covers the following:

- System and Commercial overview
- System Requirements and Installation process
- Demonstrations of the application
- Basic Troubleshooting and Support process overview

Courses Needed:

HTTOF100: MineStar Health Technician Toolbox (F) – eLearning
HTTOF101: Accessing Technician Toolbox for the First Time (F) – eLearning
HTTOF102: Connecting to a Machine (F) – eLearning
HTTOF103: Health Technician Toolbox Functionality (F) – eLearning

Health – Office

Objective:

MineStar Health Office is a site-based data visualization and reporting tool that comes standard with a set of pre-defined reports and provides real-time functionality including event notification and channel polling. Third-party software packages are required for system operation. This set of courses include, but are not limited to the following topics:

- System overview of Health Office, Thick Client and HDV
- Server Management and Database Management
- Widget Creation in HDV
- Generate and Schedule BO Reports

Courses Needed:

HEAOF105: Thick Client Features (F) – eLearning
HEAOF110: Server and Administration (F) – eLearning
HEAOF115: Health Data Visualization (HDV) Overview (F) – eLearning
HEAOF120: Business Objects Report (F) – eLearning

Detect

Driver Safety System

Objective:

This course establishes the need for the Detect Driver Safety System in managing fatigue and keeping Operators safe. It defines fatigue and its effects on work performance. This set of courses include, but are not limited to the following topics:

- Define fatigue and its sources
- Identify effects of fatigue on performance
- Outline ways to mitigate fatigue
- Describe how Detect Driver Safety System helps in managing fatigue
- Hardware components
- System installation
- Preventative Maintenance

Courses Needed:

DSSSRV100: Guardian Generation 2 Overview (F) - ILT
DSSSRV105: Guardian Generation 2 Hardware Components and System Installation (F) - ILT
DSSSRV110: Guardian Generation 2 Software Components and DSSi Web Client (F) - ILT
DSSSRV115: Guardian Generation 2 Preventative Maintenance and Data Retrieval (F) - ILT
DSSSRV120: Guardian Generation 2 Caterpillar Support Process (F) – ILT
DSSSRV125: Mining 4.0 DSS Overview (F) - ILT
DSSSRV130: Mining 4.0 Setting Up a Site (F) - ILT
DSSSRV135: Mining 4.0 Components (F) - ILT
DSSSRV140: DSS Mining 4.0 Setup of a Laptop (F) – ILT
DSSSRV145: Mining 4.0 Reflashing ECM, Wizard, and Configuration Confirmation (F) - ILT
DSSSRV150: Mining 4.0 Forward Facing Camera Configuration (F) - ILT
DSSSRV155: Mining 4.0 Install Examples (F) - ILT
DSSSRV160: Mining 4.0 Post Installation Actions (F) - ILT
DSSSRV165: Mining 4.0 Basic Faults and Troubleshooting (F) - ILT
DSSSRV170: DSSi Mining 4.0 Web Client (F) – ILT
DSSSRV175: Mining 4.0 Preventive Maintenance (F) – ILT
DSSSRV180: Mining 4.0 Blackbox and Log Files Data Retrieval (F) - ILT
DSSSRV185: Mining 4.0 Caterpillar Support Process (F) - ILT
DSSSRV190: Mining 4.0 Multitech Modem (F) - ILT
DSSSRV195: Detect Driver Safety System - Fatigue Overview (F) – eLearning
DSSSRV196: Gen 2.0 Overview (F) - eLearning
DSSSRV197: Mining 4.0 (F) – eLearning

Edge

Edge Office

Objective:
The Edge Office training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Edge™ application. This includes but is not limited to:

- Setup a brand new MineStar Edge site
- User Interface Components
- Setup the Operator ID in MineStar Edge
- Create and edit Stop Reason in MineStar Edge

Courses Needed:
EDGOF100: MineStar Edge Overview (F) – eLearning
EDGOF110: Operator ID and Stop Reasons (F) - eLearning

MineStar Guide

MineStar Guide Operator

Objective:
The MineStar Guide Operator training aims to provide operators with the necessary skills to operate the equipment. This includes but not limited to:

- Using the MineStar Guided Application on the tablet

Courses Needed:
GUIDOP100: Cat MineStar Guide Operator Training (F) – eLearning

MineStar Guide Service

Objective:
The MineStar Guide Service training will provide the knowledge and skills a candidate must demonstrate to be deemed competent to install the hardware in the equipment. This set of courses include, but are not limited to the following topics:

- Installation Procedures
- Best practices and perform Measure-up

Courses Needed:
GUIDSRV101: Cat MineStar Guide Motor Grader Service Training (F) – eLearning
GUIDSRV102: Cat MineStar Guide Front Shovel Service Training (F) – eLearning
GUIDSRV103: Cat MineStar Guide Dozer Service Training (F) – eLearning
GUIDSRV104: Cat MineStar Guide Large Wheel Loader Service Training (F) – eLearning

CAT® MINESTAR™ SOLUTIONS

Course Descriptions

Mining and MineStar Core Curriculum

These courses provide a brief introduction to the MineStar product suite to orient learners and customers on the benefits of the system.

Introduction to Mining

PRDOVR100: Introduction to Mining (F)
This course is a series of narrated videos explaining the basics of mining. The course begins with an overview of mining before exploring topics such as mine planning, mineral, and geological considerations, productivity and costs, mining equipment and software, and sustainable development.

Introduction to MineStar

PRDOVR107: MineStar Product Overview (F)
This course contains introductory information about the MineStar system. It has the ability to track, monitor, automate and manage all types of assets — from people to production machines to light vehicles on site.

MineStar Reporting

MSR100: MineStar Reporting Basic Navigation (F)
This course covers what MineStar Reporting is and how to navigate the application. This course also provides an overview on how to run reports.

MSR105: MineStar Reporting Administration Training (F)
This course contains how to utilize the available features of MineStar Reporting Administration account.

MineStar Administration

MSA100: Introduction to Mining (F)
This course contains introductory information about mining terminology and processes. It includes an outline of the mining historical perspective and marketplace as well as a general introduction to the mineral economics and the types of materials produced by the mining industry. The reference materials also include a brief on geology concepts, mine development lifecycle and typical activities that take place in surface and underground mining.

Examples of machines used at various mine sites and their associated operational costs are provided as well as an outline of the mine design principles.

MSA110: Introduction to MineStar Capability Sets (F)
This course provides deeper insight into MineStar capability sets, including Fleet, Command, Terrain, Health and Equipment Care Advisor.

MSA115: Technology Solution Center (TSC) Overview (F)
This course provides an overview of the Technology Solution Center (TSC), review the benefits of using the portal, and discuss the important fields which need to be populated for the prompt resolution of tickets.

MSA116: Technology Solution Center (TSC) Terrain Enablement Sessions (F)
This course provides a description of the common Terrain Office issues as outlined in the TSC Case Requirements Escalation Guide and the important details needed to create a ticket for a Terrain Office concern. This course will also cover how to find these details in Terrain Office or Onboard, which must be documented or attached to the ticket.

MSA200: Introduction to the Technology Solution Center (I)
This course describes the Technology Solution Center (TSC) - the Caterpillar ticket resolution platform. MineStar System Administrators must become familiar with the support platform which facilitates communication between the Customer, the Dealer and Caterpillar Support.

MSA210: TSC Case Escalation Requirements (I)
This course details incident documentation requirements prior to escalation to Caterpillar Support in order to improve velocity of system restoration and case resolution.

MSA300: MineStar System Architecture (A)
This course discusses various infrastructure components in a typical MineStar Office deployment, system services and the application server folder structure. The discussion extends into best practices for optimal change management, and the typical database architecture. This course also introduces Supervisor as the MineStar Office configuration tool.

MSA310: MineStar System Installation (SQL Server) (A)
This course describes the procedure for deployment of a MineStar Office test environment, with an SQL Server database. Full installation manual is provided with practical exposure in a classroom environment. Discussion of the system startup and shutdown procedures. Overview of the application server and the database file structures, services and log files. Monitoring of the system via the Bus Monitor and Field Communication Monitor. Accessing the database backbone using database administration tools. Importance of stable database connectivity and operating system performance.

MSA320: Building Small Mine Model (A)
This course explains the process of creating a small mine model for simulation purposes. Practical exploration of test models for manned and autonomous simulations.

MSA330: Model Simulation (A)
This course explores MineStar simulation methodologies. The practical exercise extends to a simulation of the customer mine model within the deployed test environment. Environment compartmentalisation using database user prefixes.

MSA340: MineStar System Administration (A)
This course covers the administrative tasks which need to be performed to ensure efficient operation of the MineStar system. The discussion includes user management, page access permissions, data collection and retention, as well as principles of proactive system monitoring. Additional content includes system snapshotting, restart procedures and engaging Caterpillar Support in system recovery. Review of the case escalation requirements.

MSA350: Field Communications Support (A)
This course discusses aspects of MineStar network communication patterns and tools used to monitor network performance and machine positional accuracy. Participants will gain an understanding of how MineStar utilises network information with a view to troubleshoot production issues.

MSA360: Process Charts (A)
This course introduces Process Charts as the main tool for review of system logs. Practical exploration including time-saving features for rapid identification of system issues.

MSA370: MineStar Log Review (A)
This is a practical exploration of the customer's production logs and system information. Identify server performance trends, look for unexpected system behaviours, locate actionable items associated with the machines operating in the field.

Fleet

TRACK, MANAGE AND ASSIGN ALL TYPES OF EQUIPMENT, ACROSS ONE SITE OR MANY
Fleet enhances the management of all types of equipment operations, across one mine site or multiple sites. It also allows you to easily drill down for more detailed views and analysis, from reporting on selectable groups of assets down to individual machines.

Fleet Office

FLTOF100: Overview and Basics (F)
This course provides a high-level overview of the MineStar system capability sets and data flows. Hands-on components focus on basic system functionality such as logging in and out, client page navigation, and personalization of pages and desktops.

FLTOF110: Introduction to the Spatial Mine Model (F)
This course introduces the concept of the spatial mine model and the typical client pages used to manage it.

FLTOF120: Introduction to Material Tracking (F)
This course covers the concept of grades, material types and mining blocks. It focuses on the typical controller responsibilities in utilizing the mining block information.

FLTOF130: Introduction to Assignment (F)
This course covers the basic concepts related to the Assignment Engine. It includes an introductory discussion of the typical client pages used in generation, monitoring and troubleshooting of truck assignments.

FLTOF140: Introduction to Fueling and TKPH (F)
This course provides an overview of the refuelling and TKPH functionality within MineStar Office.

FLTOF150: Introduction to Delays (F)
This course discusses the Time Usage Model, the concept of delays and the typical approaches to delay management.

FLTOF160: Introduction to Cycles (F)
This course introduces the concept of cycles, discusses the typical pages used to manage them - as well as the typical approaches to historical data editing.

FLTOF170: Introduction to Messaging (F)
This course discusses the concept of office messages and the typical approaches for office message management.

FLTOF180: General Processes (F)
This course discusses typical application support processes and troubleshooting of the onboard systems via remote access tools.

FLTOF200: Spatial Mine Model Building (I)
This is a practical review of the modelling concepts introduced during Fleet Controller training. The exercises consist of extending the mine model provided in the training environment with common entities - for example, stockpiles, fuel bay, hot-seat bay, workshop, among others. There is additional reinforcement of model quality checks and configuration.

FLTOF205: Adding and Archiving Machines (I)
This course discusses machine class configuration - as well as the more advanced aspects of loading tool, processor and truck class configuration items. The discussion extends into additional practical exercises in the provided simulation environment.

FLTOF210: Checking, Monitoring and Moving Machines (I)
This course discusses pages and settings used to monitor production equipment throughout each shift. The discussion also includes typical control process for repositioning of machines to another part of the production site.

FLTOF215: Fueling and TKPH (I)
Fueling is one of the areas where the Assignment engine can be used to improve efficiency and productivity. This course covers how to input fuel entries, as well as fuel settings and their impact. It also covers TKPH - how it can be monitored by Fleet Office and how it can affect assignments.

FLTOF225: Material Tracking (I)
This course provides insight to the material tracking and monitoring component of MineStar Fleet Office and how the MineStar Terrain capability package interact with each other. This course provides insight to the material tracking component of Fleet Office and covers blending, adding grades, materials and mining blocks.

FLTOF235: Assignments (I)
The Assignment Engine is one of Fleet's most powerful features. In this course, you will have demonstrated how the assignment engine works and how to interact with it. This course will cover machine availability and assignability, restrictions, why the Assignment Engine may choose one loading tool over another, queue tolerance and making and scheduling assignments.

FLTOF240: Assignment Troubleshooting (I)
This course will cover the pages within Fleet Office that aid in diagnosing and troubleshooting assignment issues, as well as tips and tricks to quickly find the root cause.

FLTOF245: Delays (I)
This course covers configuration of adding delay types and activities, interaction with Assignment settings, managing of current and historical delays as well as data integrity issues.

FLTOF250: Cycles (I)
This course covers typical configuration of automated and ad-hoc office messages - as well as the process for sending messages to the operators in the field. Discussion includes operational best practices for message content management and monitoring of operator Reponses.

FLTOF255: Messaging (I)
This course covers typical configuration of automated and ad-hoc office messages - as well as the process for sending messages to the operators in the field. The discussion includes operational best practices for message content management and monitoring of operator responses.

FLTOF260: KPI Dashboards and Reporting (I)
This course discusses the typical approaches to monitoring of site's real-time Key Performance Indicators. The discussion includes monitoring and auditing of production performance, Blending control charts and material view. The optional content includes scheduling and running of Business Objects reports as well as principles of relative shift reporting.

FLTOF265: Field Comms and Onboard Files (I)
This course covers the component of MineStar communications that includes field and load events. Participants will gain a better understanding of how MineStar transfers data which will help when troubleshooting issues.

FLTOF270: Field Communications Support (I)
This course discusses the advanced aspects of MineStar network communication patterns, field events - and tools used to monitor network performance and machine positional accuracy. Participants will gain an understanding of how MineStar utilizes network information with a view of troubleshooting production issues.

FLTOF280: Operators, Safety Items, Rosters and Shifts (I)
This course covers various aspects of machine operator line-up and personnel data stored in MineStar Office. The discussion includes shift pattern configuration, operator license management, safety checklist items and advanced scheduled break patterns.

FLTOF300: System Architecture (A)
This course discusses various infrastructure components in a typical Fleet deployment, system services and the application server folder structure. The discussion extends into best practices for optimal change management, and the database architecture. This course also introduces Supervisor as the MineStar Office configuration tool.

FLTOF310: System Administration (A)
This course covers administrative tasks which need to be performed to ensure efficient operation of the MineStar system. The discussion includes system user management and access permissions, data collection and retention, as well as principles of proactive system monitoring. The additional content includes system snapshotting, restart procedures and engaging Caterpillar Support in system recovery.

FLTOF320: Spatial Mine Model Supervisor (A)
This course covers spatial mine model configuration and best practices in MineStar Office. The discussion includes waypoint naming conventions, dynamic travel times, dynamic loading tool efficiency and DXF file management. The aspects of graphical display configuration are also discussed - including configuration of the Exception Mode in Site Editor.

FLTOF330: Mining Block Management (A)
This course discusses various aspects of mining block and material management in Fleet. It covers details of the mining block workflow - starting with system configuration, mining block imports and exports, to adding of new material types and material alternates. The content extends into aspects of troubleshooting and utilizes practical exercises to reinforce the introduced concepts.

FLTOF340: Assignment Supervisor (A) - ILT
This course discusses various Assignment engine configuration options in Fleet. This advanced content explains how Assignment configuration can be adjusted to suit specific site needs and to improve production outcomes. The discussion extends into common and repetitive tasks which can be automated to reduce Controller workload.

Fleet Onboard

FLTON100: Operator Onboard Overview (F) - eLearning
This course explains how an Operator uses the Fleet onboard screen to log in and out, view assignments, messages, activate delays, etc.

FLTON105: Fleet Onboard Haul Truck (F) - ILT
This course covers the overview of MineStar Fleet and how it fits into the site's operations. This also covers the components, functionalities, procedures, and operating techniques of the Fleet Onboard System.

Fleet Service

FLTSRV100: MineStar Fleet Onboard Introduction (F)
This course is an introduction to the Fleet Onboard System. It provides an overview of MineStar Fleet and how it fits into the site’s operations and its effect on site roles. The Fleet system components are covered as well as the benefits and advantages of using Fleet.

FLTSRV110: Operator Onboard Overview (F)
This course explains how an Operator uses the Fleet Onboard screen to log in and out, view assignments, messages, activate delays, etc.

FLTSRV120: GNSS Fundamentals (F)
This course covers the basics of the Global Navigation Satellite System (GNSS) theory and how MineStar utilizes GNSS and a base station for high accuracy positioning. Participants will gain an understanding of common GNSS terminology, what a base station is and how corrections work, the different positioning solutions available, the status lights of a GNSS receiver and some common error sources.

FLTSRV121: Fleet Onboard Hardware Installation (F)
This course covers the various documentation and processes used to install and initially configure the Fleet Onboard components (including the G407/Gen IV Display).

FLTSRV130: Networking Fundamentals (F)
This course provides an introduction to common networking components, terminology and how MineStar equipment communicates from the Onboard to the Office.

FLTSRV131: Fleet Onboard Initial Software Installation (F)
This course covers the documentation, processes, and service tools used to ensure the Fleet Onboard components (including the G407/Gen IV Display) have the correct versions of software installed before the machine is commissioned.

FLTSRV151: Gen III Fleet Onboard (F)
This course covers the documentation processes and service tools used to install the hardware and software as well as the initial configuration of the previous generation of the Fleet Onboard display (Gen III/CMPD). This course also covers the procedure to upgrade a machine from using a GEN III display to using the GEN IV display.

FLTSRV161: Fleet Onboard for Sites with Command for Hauling (F)
This course covers the hardware and software considerations for using Fleet Onboard systems in Command for Hauling environments.

FLTSRV210: Fleet Onboard Display Configuration (I)
This course covers the configuration of the Fleet Onboard display, provides an understanding of the various configuration file, and covers the process to update the configuration both on and off of the machine.

FLTSRV220: Fleet Onboard Measure-up and Commissioning (I)
This course covers how to perform a Fleet machine measure up, validate its reported position in MineStar compared to its actual position, and confirm that all necessary information is entered into the system before it is used in the Active Mining Area.

FLTSRV230: Fleet Onboard Troubleshooting (I)
This course covers troubleshooting tools available for Fleet Onboard, basic troubleshooting techniques and common issues.

FLTSRV240: Fleet Onboard Troubleshooting via the MineStar Client (I)
This course covers how to utilize the MineStar client to remotely troubleshoot issues with the Fleet Onboard system.

FLTSRV260: Fleet Onboard for sites with Command for Hauling (I)
This course covers intermediate topics that are specific to sites that utilize Fleet Onboard in a Command for Hauling environment.

Fleet Underground

UG_FLTSRV100: Vehicle PC Display (F)
The purpose of this course is to introduce basic vehicle PC operations. The modules available in this course will give a good overall understanding of the hardware and software components of the device, and how the Vehicle PC is used in various application and its common elements.

UG_FLTSRV105: Service Offboard (F)
This course provides an overview of the hardware available for Fleet Underground vehicles. It covers the properties of different Wi-Fi, cables, and connectors installation. It also includes topics on parts, features, pre-installation activities, mounting locations and options, assembly and installation, LED activity, best practices, and troubleshooting procedure which provides learner a deep understanding about the vehicle hardware.

UG_FLTSRV110: Service Onboard (F)
This course provides details about hardware assembly and installation of the devices. Discussed here are the devices which are attached and assembled for either heavy or light vehicles used in underground mining. The devices included are PDPU, mobile node, and in-vehicle PC. This course also has an overview of the Product Link Elite (PLE) and the necessary configuration needed for it to be used.

UG_FLTSRV115: Detect Personal Node Operation (F)
This course covers the Proximity Awareness Overview, Detect hardware and key features, how to operate Detect as a Pedestrian, and how to operate Detect as a Vehicle Operator.

UG_FLTSRV120: Detect - Basic System Administration (F)
This course covers the navigation and actions done on the MineOffice, MineView, TagBoard, and BHC Brain Box interface.

UG_FLTSRV200: Detect Hardware - Troubleshooting and Maintenance (I)
This course covers the troubleshooting steps and hardware maintenance for Detect hardware.

UG_FLTOF100: Fleet Office Overview (F)
The purpose of this course is to introduce users to Fleet for Underground and Minetec MineOffice. Features and functions of Fleet for Underground's different subsystems and how they are integrated with each other to achieve efficient and safe mine operation are also discussed. MineOffice software products are also covered in this course for the setup and configuration of Minetec hardware and applications.

UG_FLTOF101: Fleet Office Overview (F)
This course covers the basic Fleet Office concepts including Fleet for Underground, advantages of Fleet for Underground, impact of Fleet for Underground to site operations, roles and responsibilities, Mine Office Overview, and SMARTS Overview.

UG_FLTOF102: VPC Basics and Systems Navigation (F)
This course provides information about the basic functions of the Vehicle Personal Computer (VPC), how to switch between systems, and the functions and operating procedures of the Detect™ and MineView™ applications.

UG_FLTOF103: SMARTS™ Operator Navigation (F)
This course provides an overview of the SMARTS™ solution and information about the interface and functions of SMARTS Operator. This course also covers the procedures involved in managing tasks and assignments using the system, as well as troubleshooting procedures for potential issues.

UG_FLTOF170: Office Training (F)
This course covers the overview of the MineOffice system, web interface, and events.

UG_FLTOF180: Administrator Training (F)
This course covers the different administrator features of SMARTS Manager application.

UG_FLTOF190: General Processes (F)
This course discusses the different general processes such as remotely connecting to MineStar onboard systems, changing IP addresses, applying shift production plan, and managing machine pre-start issues. Levels of escalation for support is also covered here.

UG_FLTOF200: Spatial Mine Model Building (I)
This course covers a step-by-step process on how to build and set up a spatial mine model. Topics include topographical information contained in DXF files, adding draw points and ore pass to the mine model, draw points and ore pass management (editing properties, archiving, and deleting), and mine model validation.

UG_FLTOF205: Adding and Archiving Machine (I)
This course illustrates the load haul dump (LHD) hierarchy and covers the process of adding machine classes and individual machines. For maintenance, the process of archiving and restoring machines within Fleet Office are also discussed.

UG_FLTOF210: Checking Monitoring and Moving Machine (I)
This course covers tools to check network connectivity between machines and the office. Navigating the Load Haul Dump (LHD) Assistant is discussed to monitor machine information, also the Site Monitor which displays graphical representation of the mine, machines, and operators. Setting up delays is also discussed to create better machine assignments.

UG_FLTOF225: Material Tracking (I)
This course explains the concepts of grades, material, and mining block within MineStar and how to add them to track and record the geology model of the site.

UG_FLTOF235: Assignments (I)
This course discusses how the Assignment Engine works and how to interact with it, as well as machine availability and assignability. Assignment groups and restrictions due to machine compatibility are also discussed. This is followed by a step-by-step procedure on how to set/review/manage assignments. Reassignment waypoints, setting up scheduled assignments, supervisor settings, and assignment behaviors are also covered here.

UG_FLTOF240: Assignment Troubleshooting (I)
This course demonstrates how to identify machines with failed assignments and how to utilize the assignment context in determining why an assignment failed. This is followed by the appropriate troubleshooting steps depending on the cause of assignment failure. Additionally, the Loader Comparison tool is discussed to understand why trucks are assigned to one loading tool over another.

UG_FLTOF245: Delays (I)
This course covers adding delay types and activities (for advanced roles) and managing current and historical delays within Fleet Office.

UG_FLTOF250: Cycles (I)
This course discusses cycles and its importance in identifying inefficiencies and measuring improvements. Step-by-step procedure on cycle or cycle activity management – create/review/ edit/split/merge –, and bulk cycle editing, and supervisor cycle settings are also covered here.

UG_FLTOF260: KPI Dashboards and Reporting (I)
This course discusses the different components of dashboard and reporting such as KPI, tonnage, availability, shift tonnes, cycle activity times, draw card compliance, shift, payload, and others. Adjusting dashboard limits and recalculating KPI summaries are also discussed here.

UG_FLTOF265: Field Comms and Onboard Files (I)
This course covers the component of MineStar communications which includes filed and load events. This helps in understanding how MineStar transfers data for troubleshooting issues.

UG_FLTOF270: Operators, Safety Items, Rosters, and Shifts (I)
This course demonstrates how to manage personnel and users, personal items, and rosters.

UG_FLTOF275: Shift Change (I)
This course reviews and provides Caterpillar-suggested guidelines for handover/change of shift processes. It also covers how the shift change tool within Fleet Office functions and how it can improve the efficiency of shift change.

UG_FLTOF310: Systems Admin (A)
This course discusses various technical tasks such as maintaining disk space and database, reviewing and scheduling patches, installing Fleet Client, and maintaining snapshots.

Terrain

With powerful tools that aid in everything from drill planning to blasting to ore control and mine planning, Terrain enables more timely and effective fact-based management of all drilling, grading and loading applications.

Terrain Office

TEROF111: Terrain Overview (F)
The purpose of this course is to introduce users to Terrain Office. It discusses the advantages and benefits of using Terrain, the different applications that are used in conjunction with it, and the important system components that make it work.

TEROF113: Terrain Grading and Loading Set Points (F)
This course covers the basic concepts of Terrain Grading and Loading set points.

TEROF115: Terrain User Interface (F)
This course covers how to use the Terrain Office user interface. As Terrain Office contains many functions and features, the mechanics of these are explained here, such as logging in and out of the office, navigating recorded data of the machines and handling Cat files inside the Terrain Office file manager.

TEROF120: Terrain Services (F)
This course displays the services used in Terrain Office in a diagram. It illustrates the flow of information in the different components of Terrain Office such as the Server application, Terrain database, Thin App Clients and Thick App Clients for it to work.

TEROF125: Terrain Grading and Loading Machines (F)
This course covers the process of creating models, adding, removing, configuring and shutting down machines using Terrain Office. The configuration of machines using the Machine Configuration Utility (MCU) tool is covered in this course and shows how to connect these machines to Terrain Office. Important details are also included in this course regarding the naming of machines, models, and setting of security keys as well as trouble shooting some items inside the MCU.

TEROF130: Terrain Grading and Loading Onboard Lists (F)
This course contains the step-by-step process on creating groups and items. The MWF files presented and used in this course illustrate how Terrain Office communicates with the machines. Simulations are included in the course to give the learners the opportunity to go through the different steps of creating and maintaining Onboard Groups and List Items.

TEROF135: Terrain Support Processes (F)
Learning when and how to document product support cases for the Terrain system is important to ensure that disruptions are kept to a minimum. This course covers the product support tiers, support processes, and data handling for support analysis. Additionally, it provides necessary contact details to ensure that support concerns are handled with urgency.

TEROF140: Terrain for Drilling User Interface (F)
This course will walk the learners through logging in and out of Terrain Office, accessing the Help Menu, viewing and understanding the Drill Hole legend, using GPS replay to display data and using the Transfer status panel to view transfer details.

TEROF145: Terrain for Drilling Machines (F)
In this course participants will learn how to use the machine monitor to filter and view machine information, add, remove, and restore machines, and manually mark a machine as shutdown.

TEROF150: Terrain for Drilling Onboard Lists (F)
This course will enable learners to use the different Onboard List Groups in Terrain, as well as create, edit, archive, and restore onboard list items. They will also learn how to generate MWF lists and machine list types.

TEROF155: Terrain for Drilling Messages (F)
This course will enable learners to create custom messages or use message templates and send them to machines.

TEROF160: Terrain Grading and Loading Material Identification (F)
Learners will go through basic troubleshooting activities in this course while learning about material identification, material grade types, and options for material identification.

TEROF170: Terrain Grading and Loading Machine Configuration Utility (F)
This course covers the features and settings of MCU as well as a step-by-step process on how to add, configure, and upgrade MCU.

TEROF205: Terrain Bounding Regions and Groups (I)
This course explains the uses and importance of Bounding Regions and teach the learners how to create, manage, and configure groups.

TEROF210: Terrain Grading and Loading Design Files (I)
This course provides the different steps in converting design files into elevation design files, creating a material grade file, creating Avoidance Zone and Avoidance Zone Surfaces, and converting CAT files into DXF, NEE, and ENE files.

TEROF215: Terrain Grading and Loading Design File Management (I)
Design files and its management are covered in this course. Learners will go through the process of uploading and converting design and overall Terrain Office file management.

TEROF225: Terrain for Drilling Patterns (I)
This course will cover important topics on Drilling design files such as how to view drill patterns, send a drill pattern to a machine, and edit and adjust drill holes in a drill file. This also provides a description of AQM files and discusses the steps in uploading an AQM file to Terrain Office, viewing, editing, and adjusting drill holes in a drill file.

TEROF230: Terrain for Drilling Pattern Management (I)
This course covers the important Terrain Drilling pattern requirements and will cover how to upload, view, and edit drill patterns and artifacts.

TEROF235: Terrain Grading and Loading As-Build Surface Files (I)
This course covers the As-Build surface files and a deeper understanding of current elevation time and how to convert DXF to current elevation time design file. This will also tackle the process of creating an update layer to a machine.

TEROF240: Terrain Grading and Loading Manage Projects (I)
This course focuses on the functionality of Manage Projects. It also includes the process of sending and requesting projects from a Terrain machine.

TEROF245: Terrain for Drilling Projects (I)
This course covers the use and benefits of Terrain for Drilling projects. Learners will also learn how to create, send, edit, and restore projects.

TEROF250: Terrain Grading and Loading Avoidance Zone and Surfaces (I)
This course covers avoidance zones and avoidance zone surfaces and how to configure them. Different warnings and alarms displayed to the operators will also be discussed.

TEROF255: Terrain Grading and Loading Avoidance Zone and Surfaces with Remote Control (I)
This course covers avoidance zones and avoidance zone surfaces and how it interacts with Command for Dozing.

TEROF260: Terrain Grading and Loading Automatic Ore Status Maintenance (I)
Participants will be taught how to configure AOSM and material file storage onboard.

TEROF265: Terrain Manage Events (I)
This course covers how to manage events and detailed description of data export types.

TEROF270: Terrain Reports and Productivity Files (I)
Participants will learn about setting up the Productivity files in Terrain Office.

TEROF275: Terrain for Drilling Cat Reports (I)
As the learner goes through this course, they will learn how to use the Cat Editor to modify the site's production data. They will also be taught how to run standard reports in Cat Reports, set up parameters, and validate that data exports occur.

TEROF280: Terrain General Troubleshooting (I)
This course covers processes on how to set up coordinates systems, shut down, reboot, and ping a machine, ping a trace route, and connect with VPNC and Phindows. The server disk space review is also covered as part of advanced troubleshooting.

Terrain Onboard

TERON100: Terrain Overview (F)
Overview of Terrain Office showing how Terrain fits into the site's operations and its effect on site roles. The Terrain system components are covered as well as the benefits and advantages of using Terrain.

TERON101: G&L User Interface (F)
This course covers the overview of the Grading use interface and Loading user interface. The course also includes how avoidance zones are used in Terrain as well as position awareness information in the user interface.

TERON102: Drill User Interface (F)
This course identifies the components used for the Terrain for Drilling onboard system, to include operator interaction with the onboard drilling display.

TERON125: Integrated Terrain for Drilling User Guide
This course provides information about the different components and its functionalities for the Cat Integrated Terrain for Drilling User Guide.

TERON103: G&L Start of Shift (F)
This course covers some routine tasks at the start of shift including logging in, completing an operator checklist, entering service hours, job codes, activity codes and working with delays. It also covers confirming communications and GPS connectivity. Learners will be able to request surface updates and create or modify flat planes and inclined planes.

TERON104: Drill Start of Shift (F)
This course covers the initial activities and procedures that operators will go through at the beginning of the work shift on Terrain for Drilling machine types.

TERON105: G&L Shift Activities (F)
This course covers messaging and productivity information and events recorded by Terrain. Users will also learn how to review machine and operator productivity information.

TERON106: Drill Shift Activities (F)
This course covers procedures for drilling holes on Terrain for Drilling machine types and includes tramming to a hole, leveling a drill, drilling a hole, editing a drill hole pattern, and monitoring strata.

TERON107: Terrain with Blade Control (F)
This course covers Blade Control features and functions. Participants will be able to identify system components, user interface components and describe how to operate the Blade Control modes.

TERON108: Managing Material Information (F)
This course covers the file types that are used for material or ore applications and explains how to select materials. Participants will learn how to identify mining in progress and mined out of information and work with alternate materials and material modifiers, and how to work with truck functions.

TERON110: LHD GIS Mode (F)
This course covers GIS Mode in Terrain including the user interface and associated GIS Mode icons. It also covers the three modes of operation in GIS Mode: Load, Haul & Dump.

TERON111: Terrain Strata for Drilling (F)
This course covers function of the Strata Recognition Option for Drilling, adjusting the interface settings, and working with the onboard drilling display.

TERON112: Fusion Terrain for Grade Control (F)
This course covers the new features of D11 Fusion Dozer, the new Terrain UI changes, and the TD520 Touch Display. This includes the basic Operator activities when starting the machine, how to check the Blade of the machine, and the use of the Terrain Panel.

TERON117: Grade Control In-Cab Operation (F)
This course covers each mode under Grade Control and demonstrates how each mode operates the machines.

TERON122: AutoCarry and Blade Assist In-Cab Operation (F)
This course covers AutoCarry, the three types of movements when in AutoCarry, Blade Assist operation, and the how to use the Terrain Panel to input values.

Terrain Service

TERSRV100: Terrain System Overview (F)
This course is an overview of Terrain Office showing how Terrain fits into the site's operations and its effect on site roles. The Terrain system components are covered as well as the benefits and advantages of using Terrain.

TERSRV101: Terrain Machines and Software Overview (F)
This course is an overview of Terrain machines and the Terrain system hardware components used for each type of machine. The course also contains an overview of the Terrain Office software structure.

TERSRV105: Terrain Service Kit (F)
The purpose of this course is to provide the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Terrain for Grading and Loading applications.

TERSRV106: Terrain for Drilling Articulated Drills Hardware Install (F)
Participants will learn safety precautions and the Terrain hardware installation processes for articulated drills.

TERSRV107: Terrain for Drilling PLC Drill Hardware Install (F)
Participants will learn safety precautions and the Terrain hardware installation processes for PLC drills.

TERSRV108: Terrain for Drilling I/O Drills Hardware Install (F)
Participants will learn safety precautions and the Terrain hardware installation processes for I/O drills.

TERSRV111: Terrain Grading and Loading G610 Software Installation (F)
This course covers a step-by-step procedure on how to properly install Terrain Office.

TERSRV121: Terrain Grading and Loading Hardware (F)
This course covers the resources that are required for a Terrain Grading and Loading installation including Caterpillar documentation, site resources, infrastructure requirements, hardware requirements, software requirements and required site specific information.

TERSRV122: Terrain Grading and Loading Track Type Tractors ARO (F)
This course covers the resources that are required for a Terrain TTT ARO installation including Caterpillar documentation, site resources, infrastructure requirements, hardware requirements, software requirements and required site specific information.

TERSRV123: Terrain Loading Hardware for Excavators/Front Shovels (F)
This course covers the resources that are required for a Terrain Excavator/Front Shovel installation including Caterpillar documentation, site resources, infrastructure requirements, hardware requirements, software requirements and required site specific information.

TERSRV131: Terrain Mobile (F)
This course covers the resources that are required for a Terrain Mobile installation including Caterpillar documentation, site resources, infrastructure requirements, hardware requirements, software requirements and required site specific information.

TERSRV132: Terrain Onboard for Sites with Command for Hauling (F)
This course covers the resources that are required for a Terrain installation at a Command for Hauling site including Caterpillar documentation, site resources, infrastructure requirements, hardware requirements, software requirements and required site specific information.

TERSRV135: Integrated Terrain for Drilling MD6200 Installation Guide (F)
This course provides instructions on how to install and connect components required for Integrated Cat Terrain for Drilling on a MD6200 Rotary Drill. Integrated Terrain for Drilling is an attachment-ready option for the MD6200 drills.

TERSRV140: Integrated Terrain for Drilling Setup and Configuration Guide (F)
This course provides instructions on how to setup, configure, and calibrate components for the Cat Integrated Terrain for Drilling System.

TERSRV145: Integrated Terrain for Drilling MD6380 Installation Guide (F)
This course provides information on how to install and connect components required for Cat Terrain for Drilling on MD6380 drills. Terrain for Drilling is an attachment-ready option for the MD6380 drills.

TERSRV150: Integrated Terrain for Drilling MD6250 Installation Guide (F)
This course covers the installation procedures of the Integrated Terrain for Drilling (ITfD) components for the MD6250 machine and its system overview.

TERSRV155: Integrated Terrain for Drilling Strata Recognition Option (F)
This course provides information on how to activate the Strata Recognition Option, how it operates, its features, and how to configure Strata.

TERSRV160: MD6640 Rotary Drill Installation Guide (F) – eLearning
This course covers the system overview and installation procedures of the components required for Cat® Terrain for Drilling on an MD6640 Rotary Drill.

TERSRV207: Terrain Blade Control Fusion (I)
This course covers the Terrain Blade Control features, functions, components, and configuration together with an architecture of its system. This also includes the changes in Terrain and Blade Control user interface. The licenses, fundamentals of UTS, and GNSS refresher are included here as well.

TERSRV210: Terrain for Drilling 6.x Image Backup (I)
This course covers the process to ensure a Terrain for Drilling software system running version 6.x is properly backed up prior to performing an upgrade to version 7.x.

TERSRV215: Terrain for Drilling 7.x Hardware Update (I)
This course covers how to update the hardware on a Terrain for Drilling system to utilize software version 7.x.

TERSRV220: Terrain for Drilling 7.x Software Installation (I)
This course covers how to install the software on a Terrain for Drilling system for version 7.x.

TERSRV221: Terrain G&L Machine Configuration Utility (I)
Participants will learn how to set up machines in the MCU, configure advanced onboard features and use the MCU Help. It also covers how to resolve errors in configuration in the MCU, configure machines to display material and configure swath points.

TERSRV222: Terrain Grading and Loading Measure Up and Commissioning (I)
This course provides the knowledge and skills a candidate must demonstrate to be deemed competent to complete work using the MineStar Terrain for Grading and Loading applications.

TERSRV223: Terrain Loading Dual Antenna Excavator and Front Shovel Calibration (I)
This course covers the programming and calibration for dual antenna loading machines.

TERSRV225: Terrain for Drilling 7.x Software Upgrade (I)
This course covers the software upgrade process for Terrain for Drilling version 7.x.

TERSRV230: Terrain for Drilling Setup & Configuration (I)
This course covers the Drill Interface Module configuration, initial setup of the drill system, and GPS configuration and validation.

TERSRV232: Terrain System for Sites with Command for Hauling (I)
This course covers considerations for Terrain installation, calibration, and maintenance for sites that have Command for Hauling.

TERSRV235: Terrain for Drilling 7.x Calibration (I)
This course covers the process for calibrating a Terrain for Drilling system running version 7.x.

TERSRV305: Terrain for Drilling File Structure (A)

This course covers the Terrain Drilling folder structure, provides an overview on how to FTP and Putty into the drill screen, how to open a CMD shell within Phindows, and how to take configuration backup remotely.

TERSRV240: Terrain for Drilling Strata (I)
This course covers the Terrain for Drilling Strata system, how to configure it, and how to setup and configure Strata data reporting.

Command for Hauling

Working with other Cat MineStar capability sets, Command brings together the technologies needed for fully integrated operation of autonomous, semi-autonomous and remotely controlled mining systems. Command is proven to work seamlessly with and around all mine site activities, equipment and personnel, helping you work safely and productively in a wider range of challenging environments.

Command for Hauling - Office

AHS_COMOF100: Introduction to Command for Hauling Office (F)
This course provides an overview of key information regarding the operation of autonomous trucks and some common elements of the Command Office client.

AHS_COMOF170: Introduction to the Autonomy Status Page (F)
This course outlines all components of the Autonomy Status and Autonomy Status Details pages. It includes all the information displayed on both pages and outlines the function of all tools on both pages.

AHS_COMOF180: Introduction to the Site Monitor Page (F)
This course outlines the meaning of the different components of Site Monitor and includes how to use all the tools available from the page.

AHS_COMOF195: Autonomous Water Truck (F)
This course covers the overview of the Autonomous Water Truck (AWT) as well as the watering concept. This also covers the process of configuring the AWT, setting up the mine model, and managing site watering.

AHS_COMOF205: Surface Management (I)
This course further addresses the essential information for participants to understand how Command Office utilizes surface information in more detail. There will be an opportunity for participants to demonstrate their understanding of surface creation and maintenance processes, including coordination between roles. Information on troubleshooting surface issues will also be covered.

AHS_COMOF210: Surface Editor (I)
This course addresses the functionalities and tools available on the Surface Editor page within the Command Office system.

AHS_COMOF215: Lanes (I)
This course further addresses the essential information for participants to understand and execute the process for creating lanes. Additionally, more detail will be provided on how Autonomous Mining Trucks (AMTs) use lanes to adjust their behaviors. Participants will also be given an opportunity to further enhance their lane creation skills to ensure they can set up the lane network in a manner that allows efficient travel according to a traffic management plan. Troubleshooting common lane issues will also be included in this course.

AHS_COMOF220: Zones (I)
This course further addresses the information and processes needed to safely and correctly create and use zones within Command Office. Participants will be given the opportunity to enhance their zone creation skills by producing some commonly used zone types. Additionally, some common zone issues and troubleshooting will be covered.

AHS_COMOF230: Load Planning (I)
This course further addresses the load planning creation process. Participants will be given the opportunity to enhance their load planning skills, including optimization and coordination amongst roles. Common load planning troubleshooting will also be covered.

AHS_COMOF240: Dump Planning (I)
This course further addresses the information and processes needed to create different types of dump plans. Participants will be able to enhance their dump planning skills with a focus on efficiency and coordination between roles. Some common troubleshooting procedures will also be addressed. This course also covers the specific requirements for creating a crusher dump plan. This plan type can take more advanced skills and attention to detail, so participants will be able to gain experience in this process.

AHS_COMOF250: Stations (I)
This course further addresses the Command Office functionality that is required to correctly create a functioning station plan that can be used for a variety of purposes. Participants will be able to enhance their station creation skills, including some more advanced techniques that may be needed on their site. Some common troubleshooting procedures will also be addressed.

AHS_COMOF255: Refueling AMT (I)
This course provides further information and skills required to complete a refueling process within the AOZ. It will allow participants to enhance their skills at executing a typical refueling process with a focus on safety and coordination between roles.

AHS_COMOF260: Mine Model Management (I)
This course further addresses the specific Command Office functionality required to validate the mine model using the Model Data Validation tool, along with other validation tools available. Participants will be able to enhance their skills at identifying mine model issues and correcting them with as little impact to production as possible.

AHS_COMOF270: Inside the Office Area (I)
This course outlines the processes involved in changing operators on a loading tool and overtaking. When these activities occur within the Autonomous Operations Zone, there are additional steps and considerations that must be involved to safely complete these tasks. Although there are not many Command Office steps involved, these tasks are done frequently and must be understood by all roles.

AHS_COMOF280: Autonomy Status Page (I)
This course allows participants to enhance their skills at using the Autonomy Status page to manage a fleet of AMTs throughout the course of a typical shift. There will be an emphasis on safety, troubleshooting, recovery and coordination between roles.

AHS_COMOF285: Using Site Monitor (I)
This course allows participants to enhance their skills at using the Site Monitor page to manage a fleet of AMTs throughout the course of a typical shift. There will be an emphasis on safety, troubleshooting, recovery and coordination between roles.

AHS_COMOF290: Traffic Management Page (I)
This course allows participants to gain practical experience with using the Traffic Management page in some typical activities/processes that are executed during a shift.

AHS_COMOF295: Shift Change (I)
This course provides an example of what information should be included in the shift change handover, along with the roles responsible for gathering this information. It is important to pass along important information about the current state of operations to the crew coming in to work. A comprehensive handover helps with a seamless transition between shifts and allows production to continue without unnecessary interruptions.

Command for Hauling - Service Level 1

AHS_COMSRV100: Introduction to the Cat Autonomous Haulage System (F)
This course provides an overview of the Cat Autonomous Haul System, system components and functionality.

CFHSRV100: Introduction to the Cat Autonomous Haulage System (F)
This course contains an overview of the Cat Command for Hauling Autonomous Haul System, system components and functionality.

CFHSRV110: Command for Hauling Common Components (F)
This course covers the components that transform a base-level haul truck to an autonomous haul truck. It covers the autonomy components that are common between all the Command for Hauling truck models.

CFHSRV114 – CFHSRV118: Command for Hauling Model Specific Overviews (F)
These courses cover specifics related to each Command for Hauling truck model. Topics include model-specific documentation, conversion procedures, component locations, additional non-common components and any foundational operational differences.

CFHSRV130: Command for Hauling Hydraulics (F)
This course explains operation of the electro-hydraulic (EH) steering system, EH braking system, anti-lock braking system and hoist hydraulics on a Command for Hauling truck. It details the operation in Manual vs. Autonomous mode for each hydraulic sub-system as well as provides documentation information and basic troubleshooting about the hydraulic systems.

CFHSRV140: Command for Hauling Maintenance Tasks (F)
This course covers information related to performing routine and preventive maintenance tasks on a Command for Hauling truck. It covers the Calibrations for Maintenance activities outlined in the OMM, pre- and post-start autonomy layer checks, base machine calibrations that affect the autonomy layer, and adjustment of various autonomous sensors.

CFHSRV150: Introduction to MineStar for AHS Technicians (F)
This course introduces key MineStar concepts for autonomous sites as well as key pages and features that technicians can access to aide in troubleshooting Autonomous Mining Truck (AMT) issues.

CFHSRV160: Mode Change Procedure for Command for Hauling Truck (F)
This course introduces the knowledge and skills required to complete a mode changing procedures within the AOZ. The course will also cover AMT behavior at Stations and the processes and procedures to call and send AMTs.

CFHSRV190: Command for Hauling Foundational Troubleshooting (F)
This course is an overview of how to diagnose autonomy layer faults through various methods. It also covers common issues a technician may encounter in the field and how to resolve those issues.

Command for Hauling - Service Level 2

CFHSRV210: Command for Hauling Common Components - Intermediate (I/A)
This course is a more in-depth look at the components contained in the onboard Autonomy Cabinet (Command Enclosure). It covers functionality of the components, signal inputs/outputs, positioning system functionality, data network architectures, A-stop transceiver functionality, and onboard IP network topology.

CFHSRV220: Setup and Configuration of Autonomy Layer (I)
This course covers the tasks related to setting up and configuring a new AMT. It includes the process from creating a new AMT in MineStar, installing/updating software on various components, configuring various components, configuring parameters onboard the AMT, as well as the process to replace various components.

CFHSRV240: Autonomous System Calibrations (I)
This course covers the various autonomy calibrations and system checkouts that may be performed during maintenance, upgrade, or during troubleshooting tasks.

CFHSRV250: AMT Operational Behaviors (I)*
This course covers advanced topics such as AMT path tracking, perception system operation, machine class performance parameters and how they affect AMTs, manned vehicle interactions and predictive paths, Vehicle Health Supervisor reactions, MineStar scripts, and startup/shutdown process flow for AMT components.

CFHSRV260: Command for Hauling Troubleshooting - Intermediate (I)
This course covers more in-depth troubleshooting information and scenarios related to the autonomy layer components. It includes an in-depth look at the information in WebOCS, additional tools for troubleshooting A-stop RF faults, identifying offboard network faults, understanding the use of MineStar Field Comms, diagnosing failures related to calibrations and checkouts, and understanding how to capture and transfer onboard snapshot logs.

* These courses are intended for internal and dealer audiences only

Command for Underground

Developed out of the need to reduce human exposure to injury, the system removes the operator from dangerous situations and allows them to work in a more comfortable, ergonomic environment. The system uses technology to automate and enhance operations, by enabling semi-autonomous control of Cat LHD's. Command for underground will increase productivity and make a measurable impact on your mine's bottom line.

Command for Underground - Service

UG_COMROS220: Operator Station - Hardware (I)
This course provides familiarization with the Command for Underground Operator Station Hardware including the components, communication networks and power network. The course shows the necessary information for the operator station hardware. Specific switches and buttons are shown as a guide in locating them in the Operator Station Hardware. Wiring between the site server and the components of ROS are visualized and described along with other important information about the network.

UG_COMROS230: Operator Station - Software (I)
The course covers the software components used by the Remote Operator Station (ROS). In the course are topics covering operator station software, software functionality such as MAS firmware and software, web diagnostics, map files, operations map files, and various system backups including full backups. The course describes the offboard and onboard software components. The basic ROS operations and configurations are also explained in the course.

UG_COMROS2430: Operations (I)
This operational course provides training on the LARN, AIS and both machine and personnel barriers.

UG_COMAA-MXZL100: Automation Area Overview (F)
This course provides an overview of the components and general operation of the automation area for Command for Underground. Aside from discussing the the remote operation of LHD's location, this course also ensures that operators are aware of the potential hazards of the underground environment. This course also discusses advanced mining technology that provides an ergonomic operator station and semi-autonomous control reducing the machine damage.

UG_COMAA-MXZL110: Area Isolation System Overview (F)
This course provides an overview of the Area Isolation System and how AIS provides an isolated area for autonomous machine operation. This course also has an overview of the hardware and software components that control and monitor operational areas. This course covers important safety procedures to follow in emergency situations.

UG_COMAA-MXZL120: Local Area Radio Network Overview (F)
This course provides an overview and high-level components of the Local Area Radio Network and how they work with Command for Underground, including communications with and other interrelated subsystems of Command for Underground. Ethernet and power connection diagrams are labeled and elaborated on in the course for identifying the connections and components of the system.

UG_COMAA-MXZL200: LARN Components and Operation (I)
This course includes the descriptions and components that make up LARN, including the power supply system and the communication network LARN uses, such as cabling, ports, switches and radios. Many of the associated activities and indicators are listed down with their functionalities to identify their connections to the power and network functionalities. This course also describes how the components work and how they communicate with interrelated subsystems of Command for Underground.

UG_COMAA-MXZL210: Area Isolation System (I)
This course provides a deeper look on the Area Isolation System and its components.

UG_COMMAS300: Machine Automation System Components and Operation - Lite (A)
This course covers the use of hardware components, the power supply system, and machine control subsystems for MXZ-Lite. Wiring and switches are shown while descriptions on how they function are included in the module. The basic parts of the hardware and their functionalities are included in the course.

UG_COMMAS310: Machine Automation System Components and Operation (A)
This course covers the use of hardware components, the power supply system, and machine control subsystems. Every hardware component of the machine is labeled and located in the contents of the course. Details about modules, parts, valves and switches are part of the explanations on how the machine operates. Explanations on the signals and transmissions are found in the course, along with the automated features of every component. Many improved components of the machine are specified in this course.

UG_COMMAS320: Machine Automation Remote Control Systems - Lite (A)
The course elaborates the preparations and parts included in the Remote Operator Station (ROS) including the machine remote control operation, specific to MXZ-Lite. This course contains the limited version of the system and explains the similar dialog displays that can be seen in the ROS. Differences in the dialog displays are laid out and described. The purpose of each mode in the remote machine operations are defined and labeled in the course.

UG_COMMAS330: Machine Automation Remote Control Systems (A)
The course elaborates the preparations and parts included in the Remote Operator Station (ROS) including the machine remote control operation. This course contains the limited version of the system and explains the similar dialog displays that can be seen in the ROS. Differences in the dialog displays are laid out and described. The purpose of each mode in the remote machine operations are defined and labeled in the course.

UG_COMSYS250: MAS Operations Training (I)
This course covers the Machine Automation System from an operational perspective. This course includes the practical use of all components of the machine automation system used in an operational capacity. Machine indicators, controls, dialog displays of the AIS console are all shown and labelled in course, and their purpose identified. Many of the installed software like SIEMENS WinCC are included in the course.

Command for Underground – Operator

UG_COMOP100_Operations Training Pre, Post & Maintenance (F)
This course will cover the processes recommended to perform pre, post and maintenance operations on the Command for Underground system. A detailed agenda and specific learning objectives by module are included later in this course.

UG_COMOP200_Operations Core (I)
This course covers the operator station software and software functionality as well as the correct operation techniques. A detailed agenda and specific learning objectives by module are included later in this course.

UG_COMOP220_Operations Fleet (I)
This course covers the Machine Automation System from an operational perspective. This course includes the practical use of all components of the machine automation system used in an operational capacity. A detailed agenda and specific learning objectives by module are included later in this course.

UG_COMOP230: R1700K Line-of-Sight (I)
This module covers the onboard and offboard components, operations, and safety and maintenance procedures of the R1700K Line-of-Sight (LoS) system.

Command for Dozing

Working with other Cat MineStar capability sets, Command brings together the technologies needed for fully integrated operations of autonomous, semi-autonomous and remotely controlled mining systems. Command is proven to work seamlessly with and around all mine site activities, equipment and personnel, helping you work safely and productively in a wider range of challenging environments.

Command for Dozing - Operator

CDZOP110: Operator Console Training (F)
This course covers key concepts to operate a track-type tractor through remote control, using the Operator Console. It also covers the components and functions of the remote control Operator Console, its controls, and basic operations. This also includes basic maintenance and guidelines.

CDZOP120: Operator Station Training (F)
This course covers key concepts to operate a track-type tractor through remote control, using the Operator Station. It also covers the components and functions of the remote control Operator Station, its controls, and basic operations. This also includes basic maintenance and troubleshooting.

CDZOP130: SATS for Operators (F)
This course is designed as a follow-up to training on using the Operator Station to operate a track-type tractor through remote control; it details topics including comparison between Operator Station RC vs. SATS, working with the Vision System, Terrain with Blade Control and SATS Automated Features and shift procedures.

CDZOP200: RC Fusion for Operators (I)
This course covers the Remote Control Operator Station component overview, RC Operator Station touchscreen user interface, RC Operator Station operations, RC Operator Station troubleshooting, safety requirements, and maintenance activities.

CDZOP210: Command for Dozing Line of Sight (I)
This course covers the critical concepts that must be understood about the Command for Dozing safety, Command for Dozing system, mode changing, basic operational techniques, Command for Dozing operational key concepts to operate track-type tractor through remote control within Line of Sight using the Operator Console, and basic troubleshooting.

CDZOP215: Command for Dozing Non-Line of Sight (I)
This course covers the critical concepts that must be understood about the Command for Dozing safety, Command for Dozing system, mode changing, basic operational techniques, Command for Dozing operational key concepts to operate track-type tractor through remote control within Non-Line of Sight using the Operator Station, and basic troubleshooting.

Command for Dozing - Service

CDZSRV100: Overview of Command for Dozing Remote Control Products (F)
This course explains the critical concepts that you must understand to explain the products available within CFD, describe how remote control operations work at a high level and list safety precautions needed when working near remote controlled equipment.

CDZSRV105: A-stop Training and Safety Overview (F)
This course explains the critical concepts that you must understand to describe how the All-Stop device works, describe how to reset and clear an All-Stop, describe how to restart a machine after an All-Stop has been activated and cleared and display current All-Stop allocations and statuses.

CDZSRV110: Operator Console for Service Techs (F)
This course explains the critical concepts that a service technician must understand to operate a dozer through the Operator Console.

CDZSRV120: Operator Station Training for Service Techs (F)
This course covers key concepts needed to operate a track-type tractor through the remote control Operator Station and effectively troubleshoot common communication and operational errors. This also covers the components to be installed on the Operator Station and on the machine that enable remote-control operation. The processes and procedures in remote control operation were discussed. This also covers basic operation and safety practices using the remote control Operator Station. Basic troubleshooting guides and communication related issues are included as well.

CDZSRV130: Hardware Component Overview for CFD (F)
This course explains the critical concepts that you must understand to identify components to be installed on the Machine and Operator Console that enable remote-control operations for CFD.

CDZSRV140: Installing Hardware for Remote Control (F)
This course explains the critical concepts that you must understand to install remote-control components on D10T and D11T tractors.

CDZSRV150: Installing Vision System (F)
This course covers key concepts to describe when to use a Vision System for remote-control operation, list components of the Vision System, install Vision System hardware on a machine and install the operating system and software used for the Vision System.

CDZSRV210: Installing Software on the Machine (I)
This course covers key concepts to install software on machines for remote-control operation.

CDZSRV220: Install Software on and Calibrate the Operator Station (I)
This course covers key concepts to flash software for routers on the network, configure the network and install and calibrate software on the Operator Station.

CDZSRV230: Calibrating, Operating, and Commissioning the Operator Console (I)
This course covers key concepts to calibrate, startup/shut down, interpret the meaning of indicator lights, commission, list situations that cause unexpected shutdowns and use override procedures to handle unexpected shutdowns for machine operation with an Operator Console.

CDZSRV240: Commissioning and Troubleshooting CFD Systems (I)
This course explains how to follow commissioning steps in the Special Instructions for each Command for Dozing product, troubleshoot CFD systems based on system messages and determine which errors are caused by the customer's network.

CDZSRV250: Command for Dozing Remote Control Operator Station and SATS - (I)
This course covers the Remote Control Station component overview and software installation, SATS system troubleshooting, and safety requirements. This course is also for the D10 and D11 machines.

CDZSRV255: D9/D10/D11 Next Generation for Service Technicians (I) – ILT
This course covers the critical concepts that must be understood to install Command for Dozing Remote Operator Station for D9/D10/D11 Next Generation Track-Type Tractors.

Command for Drilling

Command for Drilling helps achieve excellent results through drill automation. This technology ultimately aids in reducing operating costs and improving productivity.

Command for Drilling - Operator

ADSON100: Electric Drills OMA and S-ADS (F)
This course provides an overview of the drilling system features and benefits, safety procedures, and system components.

ADSON200: Electric Drills Operator Tablet (I)
This course covers an introduction to the operator tablet and its importance in drilling, and how to create a new autonomous and assisted mission.

CFDON101: A-Stop Drill Operational Use (F)
This course explains the critical concepts of how the A-Stop device functions including how to activate an A-stop, how to reset and clear an A-Stop, and how to restart a machine after an A-Stop has been activated and cleared. It also covers how to display current A-Stop allocations and statuses.

CFDOP100: Command for Drilling OMA Operator Training (F)
This course covers the Onboard displays, safety requirements, user interface, and managing assignments.

CFDOP110: Command for Drilling ROS Service and Commissioning Training (F)
This course covers the overview of the Remote Operator Station (ROS) and the components installed on the machine and on the remote location. It also provides safety reminders and different procedures when operating the machine from a remote location.

Command for Drilling – Service

ADSSRV200: Autonomous Electric Drilling System Hardware Installation (I)
This course explains the critical concepts required to install the S-ADS machine hardware and the S-ADS Operator Console hardware.

ADSSRV210: Commissioning Electric ADS (I)
This course covers the procedures for the setup and configuration of the system as well as the procedures for commissioning the system after the initial installation.

CFDSRV100: Command for Drilling OMA Service Training (F)
This course covers safety requirements, installation instructions, and operational testing procedures in OMA.

CFDSRV110: Command for Drilling ROS Service and Commissioning Training (F)
This course covers the requirements and procedures of installing the onboard and offboard components of the Remote Operator Station (ROS). It also provides the procedures done when commissioning, testing and troubleshooting the ROS.

Health

Health Equipment Insights is a powerful data visualization and reporting tool that allows users to create dashboards with interactive data and intuitive drill-down functions.

Health – Machine Health Introduction

HEAOVR100: Health Portfolio Overview (F)
This course provides a high-level overview of the Cat MineStar Health portfolio offerings - Connectivity Enablers, Applications, and Services. These products enable a mine site to be connected in order to transfer data off its fleet of machines into different systems to fit a customer's needs.

HEAOVR110: VIMS and Product Link Training Overview (F)
This course covers important information about the Vital Information Management System (VIMS), Product Link (PL), and the different VIMS data types. It also highlights the VIMS and PLE (Product Link Elite) timeline.

HEAOVR111: Onboard Hardware and Communications Overview (F)
This course provides an overview of the Health Onboard hardware.

Health – Equipment Insights (HEI)

HEI100: Health Equipment Insights Video Series (F)
This course is a video tutorial series that teaches learners how to navigate Health Equipment Insights. It provides a walkthrough of the homepage, including the different reports and dashboards that a user can create. It provides a step-by-step guide on important tasks such as create, edit, and delete an equipment group, and manage widgets.

HEIOF100: Introduction to MineStar Health – Equipment Insights (F)
This course presents a webinar which covers the introduction to MineStar Health - Equipment Insights. The webinar includes topics such as Performance To Failure Curve, Connectivity, and a high-level demonstration of the functionalities of the Equipment Insights application.

HEIOF101: Access Equipment Insights (F)
This course covers the process of setting up the user preferences when accessing Equipment Insights for the first time.

HEIOF105: Equipment Group (F)
This course explains what an Equipment Group is and how to manage it in the Equipment Insights application.

HEIOF110: Widget (F)
This course explains what a Widget is and how to manage it in the Equipment Insights application.

HEIOF111: Widget Part 2 (F)
This course explains how to manage widgets in the Equipment Insights application.

HEIOF112: Widget Part 3 (F)
This course explains how to manage widgets in the Equipment Insights application.

HEIOF115: Dashboard (F)
This course explains what a Dashboard is and how to manage it in the Equipment Insights application.

HEIOF120: Reports Scheduling (F)
This course explains what an Equipment Insights report is and how to schedule and manage it in the Equipment Insights application.

HEIOF125: Time Series (F)
This course explains what Time Series are and how to access and manage them in the Equipment Insights application.

HEIOF130: Other MHEI Functionalities (F)
This course covers the other functionalities of the Equipment Insights application.

HEIOF135: Equipment Insights Applied Analysis - Case Studies (F)
This course presents three different scenarios to where Equipment Insights can be used.

Health – Technician Toolbox

HTTOF100: MineStar Health - Technician Toolbox (F)
This course provides an overview of the Technician Toolbox, or the application developed to replace VIMSpc.

HTTOF101: Accessing Technician Toolbox for the First Time (F)
This course is a series of narrated videos explaining the overview of Health Technician Toolbox application. The course begins with an insight of what is Technician Toolbox before exploring topics such as how to log in and set up the application, overview of different pages like Home, Status, Download, Onboard Configure, Realtime, Merge and Service Reports.

HTTOF102: Connecting to a Machine (F)
This course covers the steps and reminders when connecting a machine, and how to fix connection failure.

HTTOF103: Health Technician Toolbox Functionality (F)
This course covers the different pages of Health Technician Toolbox application such as Status, Download, Onboard Configure, Realtime, Merge and Service Reports as well as final the reminders when to log out the application.

Health – Office

HEAOF105: Thick Client Features (F)
This course covers the different features of Cat MineStar Health Office, demonstrate how to log into the tool, as well as set-up desktop and page configurations.

HEAOF110: Server and Administration (F)
This course covers the different approaches to manage VIMS files, different Health jobs and Windows services, importance of setting data retention period and database management., as well as the process of validating Field Data Communications.

HEAOF115: Health Data Visualization (HDV) Overview (F)
This course describes the major differences between the traditional Health Office, Thin Client, and Health Data Visualization, identify and create widgets for data visualization and demonstrate how to backup and restore database in HDV.

HEAOF120: Business Objects Report (F)
This course describes and demonstrates how to log in to SAP Business Objects BI Platform, generate and schedule Health standard reports.

Detect

Detect technologies use cameras and other sensors to improve operators' awareness of the work environment, reduce the chance of accidents, and prevent unauthorized use of equipment

Driver Safety System

DSSSRV100: Guardian Generation 2 Overview (F)
This course establishes the need for the Detect Driver Safety System in managing fatigue and keeping operators safe. It defines fatigue, its effects on work performance, ways to mitigate it, and how the Guardian 2 monitors different events in order to keep operators safe. The components of the Guardian 2 are discussed in this course as well as how privacy of the operator is protected.

DSSSRV105: Guardian Generation 2 Hardware Components and System Installation (F)
This course covers the different components of Guardian 2, its features, peripherals, environmental and mechanical specifications. Detailed steps for installing the system in a vehicle are also included in this course.

DSSSRV110: Guardian Generation 2 Software Components and DSSi Web Client (F)
After learning how to install the system, learners are taken through the laptop's configuration in order for it to communicate with Guardian Controller Unit. This course includes the process of creating the Software Dongle and setting up the Installation Wizard for Guardian 2. It also has the needed system checks to be done after the software setup and the process of allocating a vehicle and troubleshooting the Recovery Dongle. Lastly, this course discusses the different functionalities and uses of the Driver Safety System Interface (DSSi) Web Client.

DSSSRV115: Guardian Generation 2 Preventative Maintenance and Data Retrieval (F)
This course covers the overview of System Check, different Fault Codes, and audio alert of the hardware components. Important Preventative Maintenance (PM) steps and checklist for the Guardian Generation 2 system are discussed in this course. Lastly, it discusses the overview Blackbox and Service Logs and the steps for retrieving data from it using the Guardian Generation 2 Controller and Windows Secure Copy (WINSCP).

DSSSRV120: Guardian Generation 2 Caterpillar Support Process (F)
This course covers the Driver Safety System (DSS) support overview, issue prioritization, and different Support contacts. It also provides the process for submitting a Support request.

DSSSRV125: Mining 4.0 DSS Overview (F)
This course establishes the need for the Detect Driver Safety System in managing fatigue and keeping Operators safe. It defines fatigue, its effects on work performance, ways to mitigate it, and how the DSS monitors different events in order to keep Operators safe. The components of the DSS are discussed in this course as well as how privacy of the Operator is protected.

DSSSRV130: Mining 4.0 Setting Up a Site (F)
This course covers the data flow for DSS, and the documents needed to set up a site.

DSSSRV135: Mining 4.0 Components (F)
This course covers the different components of the DSS Mining 4.0, its features, peripherals, electrical, environmental, and mechanical specification. It also includes the detailed specification of the different DSS Mining 4.0 Kits.

DSSSRV140: DSS Mining 4.0 Setup of a Laptop (F)
This course covers the process of laptop configuration to communicate with DSS Mining ECM Unit.

DSSSRV145: Mining 4.0 Reflashing ECM, Wizard, and Configuration Confirmation (F)
This course covers the process of creating and using the USB Restore Drive for the DSS ECM. It also covers the configuration of the DSS Installation Wizard and the post installation configuration checks for the DSS ECM.

DSSSRV150: Mining 4.0 Forward Facing Camera Configuration (F)
This course covers the step-by-step process of configuring and enabling the Forward Facing Camera (FFC) using DSS IVS Webpage.

DSSSRV155: Mining 4.0 Install Examples (F)
This course covers the installation process for the DSS in a vehicle.

DSSSRV160: Mining 4.0 Post Installation Actions (F)
This course covers the importance of documenting the installation process and the information about installation checklist. It also covers the process of assigning a vehicle to the correct site.

DSSSRV165: Mining 4.0 Basic Faults and Troubleshooting (F)
This course covers the types of Fault codes and discuss methods to identify faults.

DSSSRV170: DSSi Mining 4.0 Web Client (F)
This course covers the different functionalities and uses of the Driver Safety System Interface (DSSi) Web Client. It also covers the hardware health and communication health monitoring process, and the overview of the sections of the DSSi Web Client graphs.

DSSSRV175: Mining 4.0 Preventive Maintenance (F)
This course covers the Preventive Maintenance (PM) schedule, various types of Operator and Technician Checks on hardware and software components, and PM Checklist.

DSSSRV180: Mining 4.0 Blackbox and Log Files Data Retrieval (F)
This course covers the overview of the Blackbox and Log Files. It also provides the process of retrieving data from the Blackbox and Log Files and delivering it to the Support.

DSSSRV185: Mining 4.0 Caterpillar Support Process (F)
This course covers the Driver Safety System (DSS) support overview, issue prioritization, and different Support contacts. It also provides the process for submitting a Support request.

DSSSRV190: Mining 4.0 Multitech Modem (F)
This course covers the step-by-step configuration process of the Multitech Data Modem.

DSSSRV195: Detect Driver Safety System - Fatigue Overview (F) 
This course establishes the need for the Detect Driver Safety System in managing fatigue and keeping Operators safe. It defines fatigue and its effects on work performance.

DSSSRV196: Gen 2.0 Overview (F) 
This course establishes the need for the Detect Driver Safety System and discusses how the Guardian Generation 2 monitors different events to keep the operator's safety and privacy. It also covers the different components of the Guardian Generation 2 and the basic steps for installing them in a vehicle.

DSSSRV197: Mining 4.0 (F)
This course establishes the need for Driver Safety System (DSS) and discusses how DSS monitors different events to keep operators safe and protect the operator's privacy. It also covers the different components and installation process of DSS.

Edge

MineStar Edge is a cloud-based web application that is used to automatically collect and monitor load and haul production data, with no operator input and with a high degree of accuracy.

Edge Office

EDGOF100: MineStar Edge Overview (F)
This course is a series of narrated videos explaining the overview of MineStar Edge application. The course begins with an insight of what is EDGE before exploring topics such as how to setup the application, overview of different pages like Home, Production, Shift Control, Map, Equipment, Operators, Replay, Export, and Fusion Monitor.

EDGOF110: Operator ID and Stop Reasons (F)
This course covers the process for setting up the Operator ID, and the new process for creating and editing Stop Reasons in Cat MineStar Edge. This also covers the process of logging in, initiating a stop, and ending the current stop using the in-cab display, as well as, how to re-classify Stop Reasons and how to log out of the in-cab display.

MineStar Guide

Cat MineStar Guide can help improve critical mine operations by combining advanced guidance tools, instant operator feedback and real-time progress reporting. Guide helps ensure that grading and loading operations run safely, consistently and according to plan.

MineStar Guide Operator

GUIDOP100: Cat MineStar Guide Operator Training (F)
This course provides an overview of the MineStar Guide application such as navigating through the application, its benefits, and different functions it has to offer for four different machines - Large Wheel Loader, Mass Excavator, Dozer, and Motor Grader.

MineStar Guide Service

GUIDSRV101: Cat MineStar Guide Motor Grader Service Training (F)
This course covers the installation procedures, measure-up best practices, and how to perform measure-up and sensor calibration validation.

GUIDSRV102: Cat MineStar Guide Front Shovel Service Training (F)
This course covers the benefits of using MineStar Guide on a front shovel, installation procedures, measure-up best practices, and how to perform measure-up and sensor calibration validation.

GUIDSRV103: Cat MineStar Guide Dozer Service Training (F)
This course covers the benefits of using MineStar Guide on a dozer, installation procedures on D10 and D11, measure-up best practices, and how to perform measure-up and sensor calibration validation.

GUIDSRV104: Cat MineStar Guide Large Wheel Loader Service Training (F)
This course covers the benefits of using MineStar Guide on a large wheel loader, installation procedures, measure-up best practices, and how to perform measure-up articulation and calibration validation.

General Service

The General Service courses are shared between Fleet, Terrain, and Command service training courses. The content in these courses is the same whether a user is being trained on Fleet, Terrain, or Command for Hauling. If a learner receives training on one of the General Service courses as part of the Training Offering, they are not required to repeat the same topic for the other two products.

GENSRV101: Resources and Documentation (F)
This course provides an overview of important online resources that users can access to search for different documentation such as product information, manuals, marketing and sales documents, and compatibility matrix files.

GENSRV102: General Routing and Installation of Harness Best Practices (F)
This course covers basic foundational concepts including best practices for routing and installation of harnesses, servicing Deutsch connectors, understanding various connector types used in MineStar products, identifying faults with circuits, and understanding CAN networks and faults.

GENSRV103: GNSS Fundamentals (F)
This course covers the basics of the Global Navigation Satellite System (GNSS) theory and how MineStar utilizes GNSS and a base station for high accuracy positioning. Participants will gain an understanding of common GNSS terminology, what a base station is and how corrections work, the different positioning solutions available, the status lights of a GNSS receiver and some common error sources.

GENSRV201: GNSS Fundamentals (I)
This course covers commissioning activities related to GNSS including software flashing, configuring the receiver and performing validation checks. This course also covers more advanced troubleshooting topics related to GNSS.

GENSRV202: Network Fundamentals (I)
This course provides an introduction to common networking components, terminology and how MineStar equipment communicates from the Onboard to the Office.

GENSRV203: MineStar Service and Support (I)
This course covers the service and support processes that are in place to identify issues, capture the correct data, and submit issues to Caterpillar support teams.

For more information or to request a course, please go to
www.cat.com/MineStarTraining