



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aatikd.co.za · Website: www.aatikd.co.za

COURSE BROCHURE

Integrate The Functions Of The Air Picture Display System Training

Law, Military Science and Security / Sovereignty of the State

Unit Standard 120043 · NQF Level 5 · 20 Credits · 17 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to integrate the functions of an air picture display system, enabling effective monitoring and management of air traffic information. Participants will understand how to synthesize data from multiple sources to produce a coherent air picture, ensuring situational awareness and operational efficiency.

Category	Law, Military Science and Security
Subfield	Sovereignty of the State
Unit Standard	120043
Accreditation	SAQA Accredited · NQF Level 5 · 20 Credits
Duration	17 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Demonstrate the ability to configure and calibrate air picture display system components for optimal performance.
- Analyze incoming data streams from radar, transponders, and other sensors to validate air picture accuracy.
- Integrate multiple data sources to produce a unified and coherent air picture display.
- Evaluate system alerts and anomalies to implement corrective actions and maintain system integrity.
- Apply standard operating procedures to ensure seamless integration of air picture functions during routine and emergency operations.
- Document integration processes and system performance metrics for quality assurance and training purposes.

WHO SHOULD ATTEND

- This course is designed for air traffic controllers, aviation system operators, and technical personnel responsible for operating or maintaining air picture display systems in military or civilian aviation environments.

COURSE OUTLINE

Day 1: Introduction to Air Picture Display Systems

- Overview of air traffic management and air picture display
- Historical development of APDS
- Core components: sensors, processors, displays
- Basic radar principles and types
- Data fusion fundamentals
- System integration concepts

Day 2: System Architecture and Data Sources

- System architecture: centralized vs distributed
- Radar data sources: primary and secondary radar
- Automatic Dependent Surveillance-Broadcast (ADS-B)
- Multilateration systems
- Data communication protocols (Asterix, etc.)
- Data processing pipeline: extraction, tracking, fusion

Day 3: Display Technologies and Human Factors

- Display technologies: CRT, LCD, LED, projection
- Color schemes and symbology standards
- Human factors: cognitive load, situational awareness
- Ergonomic design of operator workstations
- Display resolution, brightness, and contrast
- Refresh rates and latency considerations

Day 4: Track Initiation and Maintenance

- Track initiation: logic and criteria
- Track correlation and association
- Kalman filtering for track smoothing
- Track maintenance: update rate, coasting
- Track identity management
- Handling of redundant tracks

Day 5: Data Fusion and Multi-Sensor Integration

- Data fusion levels: raw, feature, decision
- Fusion algorithms: weighted average, Bayesian, Dempster-Shafer
- Sensor alignment and registration
- Benefits: improved accuracy, coverage
- Challenges: latency, false tracks
- Practical examples of multi-sensor integration

Day 6: Air Picture Display Symbology and Coding

- Standard symbology: tracks, airports, waypoints
- Track status indicators: confirmed, tentative, coasted
- Alert and warning symbols
- Color coding conventions
- Customization for specific operational environments

- Symbology standards (STANAG, ICAO)

Day 7: Communication and Coordination Functions

- Internal communication: operator to operator
- External interfaces: ATC, military, weather systems
- Voice communication systems integration
- Data communication: flight plans, weather data
- Interoperability standards (ASTERIX, ICDs)
- Coordination procedures for handoffs

Day 8: System Performance Monitoring and Testing

- Performance metrics: update rate, accuracy, availability
- Built-in test equipment (BITE) and diagnostics
- Health monitoring: processor load, network traffic
- Troubleshooting: display glitches, data dropouts
- Performance testing procedures
- Logging and reporting

Day 9: Integration with External Systems

- Flight data processing system (FDPS) integration
- Weather radar and meteorological data integration
- Traffic Collision Avoidance System (TCAS) interface
- Integration with airport surface surveillance
- Data exchange with military systems
- Security considerations for external interfaces

Day 10: Advanced Display Features and Customization

- Display layers: traffic, weather, airspace
- Filtering and decluttering techniques
- User profile management
- Map overlays: terrain, obstacles, airspace boundaries
- Zoom, pan, and centering functions
- Customization for different operator roles

Day 11: Recording and Playback Functions

- Recording mechanisms: raw data, display snapshots
- Playback controls: speed, pause, jump
- Analysis tools for playback
- Storage management: capacity, retention
- Legal and security aspects of recordings
- Using playback for incident investigation

Day 12: Security and Access Control

- Security threats: cyber attacks, data breaches
- Access control: user roles, passwords, biometrics
- Encryption of data in transit and at rest
- Authentication protocols
- Security policies: password complexity, audit trails
- Incident response procedures

Day 13: Maintenance and Support Procedures

- Preventive maintenance schedules
- System backups: frequency, storage
- Software updates and patches
- Hardware maintenance: cleaning, replacement
- Support escalation: tier 1, 2, 3
- Documentation: logs, configuration changes

Day 14: Operational Procedures and Workflows

- Standard operating procedures (SOPs)
- Routine workflows: shift handover, system startup
- Emergency procedures: system failure, data loss
- Coordination with adjacent sectors
- Communication protocols during emergencies
- Workload management

Day 15: Simulation and Training Exercises

- Simulation setup: scenarios, roles
- Integration exercises: multi-sensor fusion
- Troubleshooting simulated faults
- Performance evaluation criteria
- Debriefing and feedback
- Individual and team exercises

Day 16: Practical Integration Project

- Project planning: scope, objectives
- Configuration of display and data sources
- Integration of fusion and tracking
- Testing and validation
- Team collaboration and roles
- Presentation of results

Day 17: Final Assessment and Course Wrap-Up

- Written and practical assessment
- Evaluation of integration project
- Feedback session
- Certification process
- Action plan for workplace application
- Course evaluation and closing

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **20 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 56,500.00	R 56,500.00
1	In-House	R 73,400.00	R 73,400.00
1	On-Campus (Pretoria)	R 84,700.00	R 84,700.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	01 Sep 2026	On-Campus	Dubai, UAE
11 Aug 2026	02 Sep 2026	On-Campus	Pretoria, South Africa
12 Aug 2026	03 Sep 2026	On-Campus	Abu Dhabi, UAE
13 Aug 2026	04 Sep 2026	On-Campus	Durban, South Africa
13 Aug 2026	04 Sep 2026	On-Campus	Mauritius
14 Aug 2026	07 Sep 2026	On-Campus	Cape Town, South Africa
17 Aug 2026	08 Sep 2026	On-Campus	Pretoria, South Africa
18 Aug 2026	09 Sep 2026	On-Campus	Abu Dhabi, UAE

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

- 1. Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 120043) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
- 2. Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za – our team will reply with a formal quotation.
- 3. Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
- 4. Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za