Aviation Training Intelligence™

Are you implementing the Essential Components of ATI to build enduring innovative training solutions?

Session # 7

What is Aviation Training Intelligence™?
How is ATI™ created?

Essential Components

- ISD (Instructional System Design)
- ICAO Data
- EC 3
- EC 6
- EC 7

Building Aviation Training Intelligence

Workgroups

- 30 minutes
- ATI is based on data to drive decisions.
- Challenge:

  How can you store and access credible evidence from aviation growth and HR data, organizational analysis, training needs, impact assessment results to optimize your training portfolio to meet current and future needs?
Integrated Safety Trend Analysis and Reporting System (iSTARS)

Collection of web applications and data sets that facilitate and assist users in conducting aviation safety, efficiency and risk analyses.

Provides a framework for data and intelligence needed for decision-making and the prioritization of ICAO programmes such as the Universal Safety Oversight Audit Programme (USOAP), the Aviation Safety Implementation Assistance Partnership (ASIAP) and Global Aviation Training (GAT).

Web applications are listed in a catalogue and grouped into different categories, depending on what aviation field they relate to.

**Main categories:**

- Accident statistics
- ACE
- Airlines
- CAA HR Toolkit
- Documentation
- iImplement
- Integrated Analysis
- Natural Hazards
- SSP / SMS
- Traffic
- USOAP
ICAO DATA +

Tool that presents in a dynamic and graphical environment the air transport statistic data collected from its 192 Member States.

Provide accurate, reliable and consistent aviation data so that States, international organizations, aviation industry, and other stakeholders can:

- make better projections;
- control costs and risks;
- improve business valuations; and
- benchmark performance.
ICAO DATA +

Includes the following apps:

**Air Carrier Traffic**
- Covers monthly or annual traffic of aircraft movements, number of passengers embarked and disembarked and tons of freight and mail loaded and unloaded.

**Traffic by Flight Stage**
- Covers annual traffic on-board aircraft of international scheduled services.

**Air Carrier Finances**
- Shows international scheduled airlines financial data, including revenues and expenditures for the year (calendar or fiscal) well as summary traffic data.

**Airport Traffic**
- Covers monthly or annual traffic data for major international airports.

**On Flight Origin and Destination**
- Shows on an aggregate basis the number of passengers, freight and mail tonnes carried between all international city-pairs on scheduled services.

**Air Carrier Personnel**
- It deals with the personnel data of airlines. The data consist of statistics on the number of airline personnel by job category and the annual expenditures for these personnel.

**Air Carrier Fleet**
- It covers the fleet data of airlines. The data consist of statistics on the number and types of aircraft operated, their capacity and their utilization.
TRAINAIR PLUS electronic Management System (TPeMS)

- Learning Management
  - Virtual Classroom/Mobile Learning
  - Embedded e-learning and blended learning
  - Track On-the-Job Training

- Informal Collaborative Learning
  - Communities of Practice (CoPs)
  - Testing (Level 2)
  - Social learning
  - Learning using “Serious games”

- Competency Management
  - Job Analysis
  - Job Catalogue

- Training Management
  - Training Content
  - Training Delivery
  - Training Evaluation (Level 1, 2 and 3)

- Communication and Reporting
  - Networking
  - Statistics and Report
  - Surveys and Polls

- Training Development Management
  - Methodology Validation
  - Content Validation

- HRD Expert Management
  - Instructional System Designer (ISD)
  - Training Validator
  - Instructor
  - Training Centre Assessor

- Training Centre Management
  - Assessment
  - Membership (Associate/Full/RTCE)

- Informal Collaborative Learning
  - Communities of Practice (CoPs)
  - Testing (Level 2)
  - Social learning
  - Learning using “Serious games”

- Communication and Reporting
  - Networking
  - Statistics and Report
  - Surveys and Polls

- Training Development Management
  - Methodology Validation
  - Content Validation

- HRD Expert Management
  - Instructional System Designer (ISD)
  - Training Validator
  - Instructor
  - Training Centre Assessor

- Training Centre Management
  - Assessment
  - Membership (Associate/Full/RTCE)
Essential Component (EC – 3)

Training Needs Analysis (TNA)

- Conduct Organizational Performance Analysis (OPA)
- Identify performance problems
- Analyze Job
- Gather data from stakeholders
- Analyze data and training strategies
- Create Training Need Analysis (TNA) Report

Conduct Organizational Performance Analysis (OPA)

Identify performance problems

Analyze Job

Gather data from stakeholders

Analyze data and training strategies

Create Training Need Analysis (TNA) Report
Training Courses | Programmes

Aviation Training & Education Directory (ATED)

Aviation Career Path Portal (ACPP)
Example: Airworthiness Civil Aviation Safety Inspector

Previous Career Path

Stage 1
Stage 2
Stage 3

Stage 1
Stage 2
CA-CASI (Entry Level)

Accelerated Career Path
3 years 4 months

CA-CASI (Competent)

Stage 3
5 years 11 months

Aircraft Maintenance ATO Training (2 years)

CAA Recruitment (recruitment: 3-6 months)

Industry experience (5 years)

Education Institutions

Training Centres

IČAO ATI ENG
TRAINAIR PLUS
PPT .19

IČAO ATI ENG
TRAINAIR PLUS
PPT .20
Level 3 Post Training Evaluation (L3 PTE) Methodology

**Evaluated Impact Dimensions**

- D1: Work Environment and Culture of Collaboration
- D2: Occupational Safety and Health
- D3: Transferability to the Job
- D4: Professional Competence attained under Real-Life Conditions
- D5: Productivity and Operational Efficiency under Real-Life Conditions
- D6: Working Conditions and Professional Career

**Relative Weight**

- W1: 10%
- W2: 15%
- W3: 15%
- W4: 25%
- W5: 25%
- W6: 10%

**Impact Indicator**

1. Quality of hierarchical relationships
2. Coordination and cooperation
3. Healthy conditions at work
4. Prevention of occupational hazards
5. Transferability of acquired knowledge
6. Responsiveness of work environment
7. Professional autonomy
8. Target competencies
9. Enhanced professional skills
10. Problem solving
11. Resource optimization
12. External customer satisfaction
13. Operational efficiency
14. Working conditions
15. Professional career

**PTE Weighted Impact Index (WIN) Equation**

\[
\text{Win} = \sum (\text{Impact Dimension Value} (D) \times \text{Relative Weight} (W))
\]

Total PTE results are the accumulated total values of the Evaluated Impact Dimension values multiplied by the corresponding Relative Weight. The closer to 5 in the Win, the greater the impact of the training in the trainee’s opinions; the closer to 1, the lesser the impact.
Human Resources Development

- Objectives and challenges:
  - Develop more people to meet specific performance **effectively and efficiently**
  - Build new competencies for specific performance **continuously**
  - Align the HR development strategy with the State’s Aviation Master Plan

- HR strategies and technics:
  - Competency-based recruitment and training
  - Training development strategy based on TNA
  - Career development plan

Structured plan of actions, to implement a comprehensive and consistent human resources development strategies to meet the State’s strategic objectives, development goals and needs of the aviation sector in accordance with the **State Aviation Master Plan**.
Civil Aviation Authority Master Plan (CAAMP)

- Strategic document that include the fundamental information about aviation in the State upon which the Roadmap will be developed, such as:
  - a) a list of existing aviation activities carried out in the State;
  - b) a list of planned activities in short; mid-/long-term (up to 10 years);
  - c) existing aviation infrastructure;
  - d) existing aviation service providers;
  - e) planned changes in aviation infrastructure;
  - f) planned changes in the aviation market;
  - g) the institutional system of the State;
  - h) expected changes affecting the institutional system of the State;
  - i) State’s aviation strategies;
  - j) State’s aviation development plans; and
  - k) State’s performance targets (safety, security, environment, state’s objectives, etc.).
Training Intelligence Integrated System

Architecture and Systems

Data Warehouse / Analytics

ICAO ATI ENG
TRAINAIR PLUS
PPT 31

ICAO ATI ENG
TRAINAIR PLUS
PPT 32

Capacity Improvement through ATI™

Senior/Middle Managers Training Programme (SMMTP)
Post-training Evaluation Course & OJT
Training Instructor Course (TIC)
Training Development Course (TDC)
Validating Competency-Based Training (VCT)

EC1/EC2
Aviation Data-Driven Decision Making Course (AD3MC)

EC3
EC2

EC8

EC7

EC6

EC5

Managing Aviation Training Intelligence (MATI)
 Training Needs Analysis OJT
 Interface with TPP Members Portfolio

2018 2019 2020

ICAO ATI ENG
TRAINAIR PLUS
PPT 32

25/10/2018
**Expected Benefits**

- **Aviation data-driven analysis** informing instructional system design (ISD)
- Application of standardized training development and delivery methodology to **new job training**
- **Implementation and management of training** through ICAO integrated system platform
- **Capacity improvement** and connectivity through TRAINAIR PLUS network
- Academic **research** and theoretical application through a professional and Academic Network

---

THANK YOU