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CFIT 4

FLIGHT DATA ANALYSIS PROGRAM (FDAP)



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REGULATORY BACKGROUND:

AMENDMENT 26 ICAO ANNEX 6

FROM 1 JANUARY 2005, AN OPERATOR OF AN AEROPLANE OF A MAXIMUM CERTIFICATED TAKE-OFF MASS IN EXCESS OF 27,000KG SHALL ESTABLISH AND MAINTAIN A FLIGHT DATA ANALYSIS PROGRAM AS PART OF ITS ACCIDENT PREVENTION AND FLIGHT SAFETY PROGRAM



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PRINCIPLES:

- ANALYSING FLIGHT RECORDED FLIGHT DATA IN ORDER TO IMPROVE SAFETY AND EFFICIENCY OF FLIGHT OPERATIONS
- NON - PUNITIVE
- PROTECTION OF SAFETY DATA COLLECTION AND PROCESSING SYSTEM (*ICAO ANNEX 13 ATTACHMENT E*)



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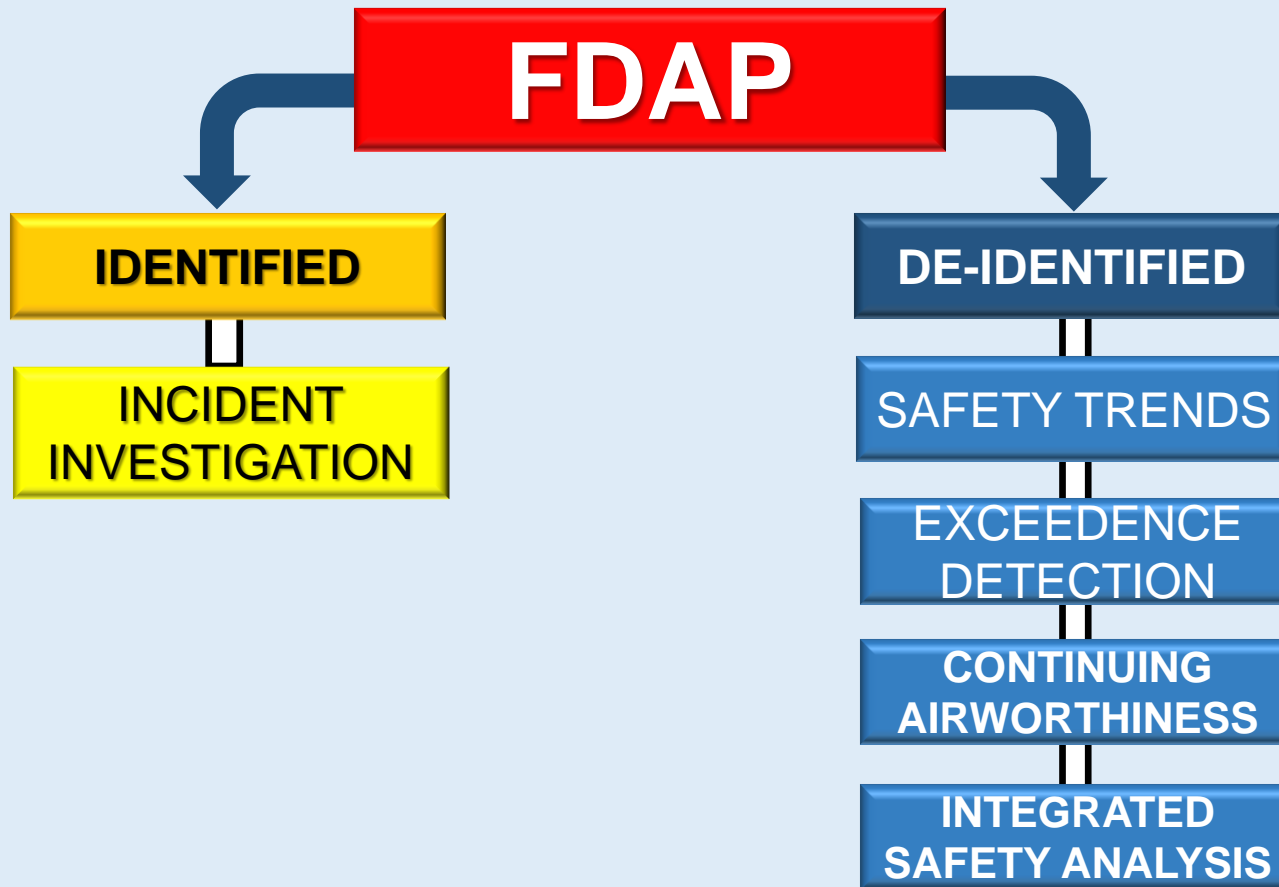
OBJECTIVES OF FDAP

- 1. IDENTIFICATION OF UNDESIRABLE AND UNSAFE TRENDS**
- 2. EXCEEDENCE DETECTION**
- 3. INCIDENT INVESTIGATION**
- 4. CONTINUING AIRWORTHINESS**
- 5. INTEGRATED SAFETY ANALYSIS**



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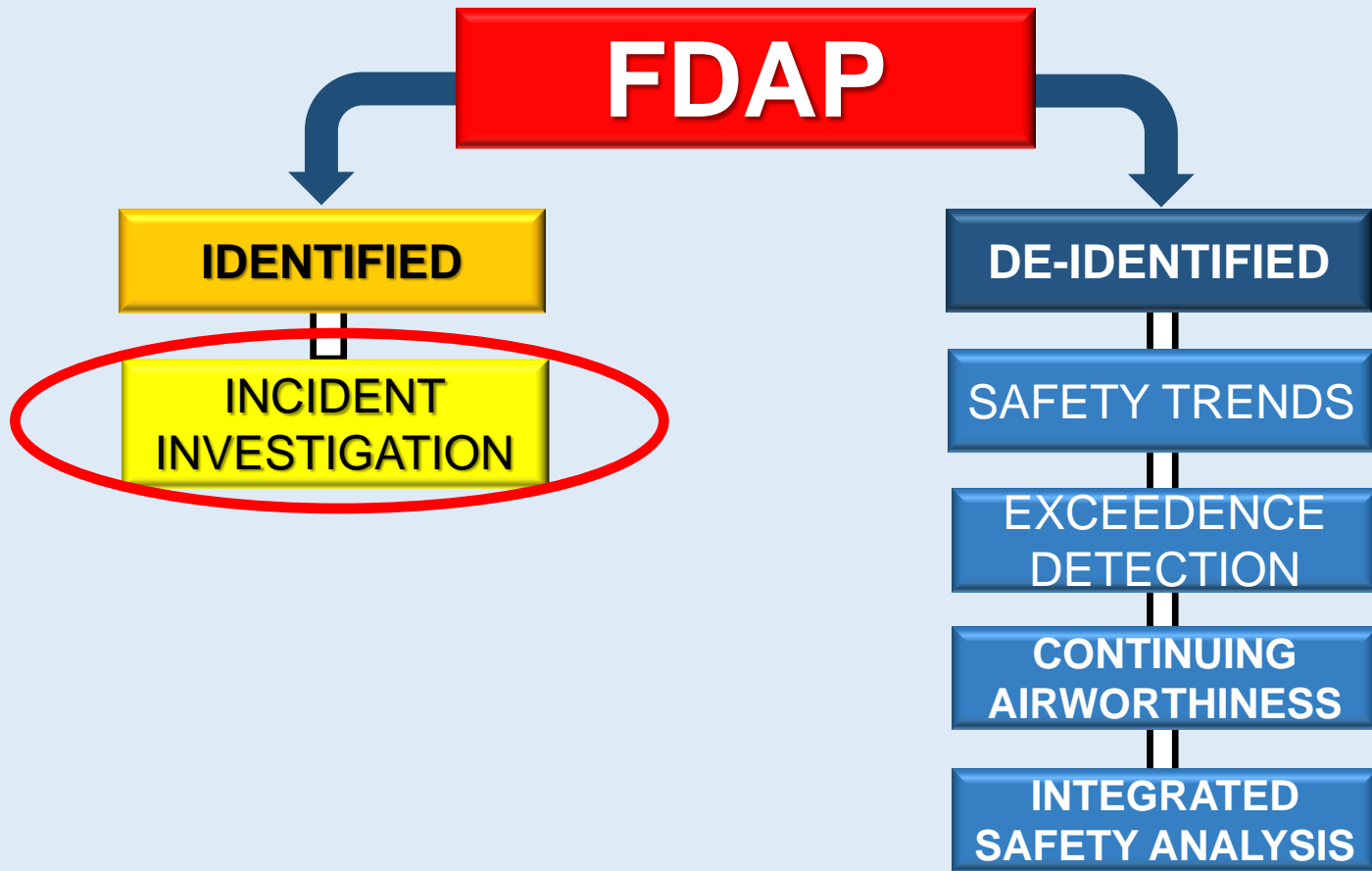
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INCIDENT INVESTIGATION

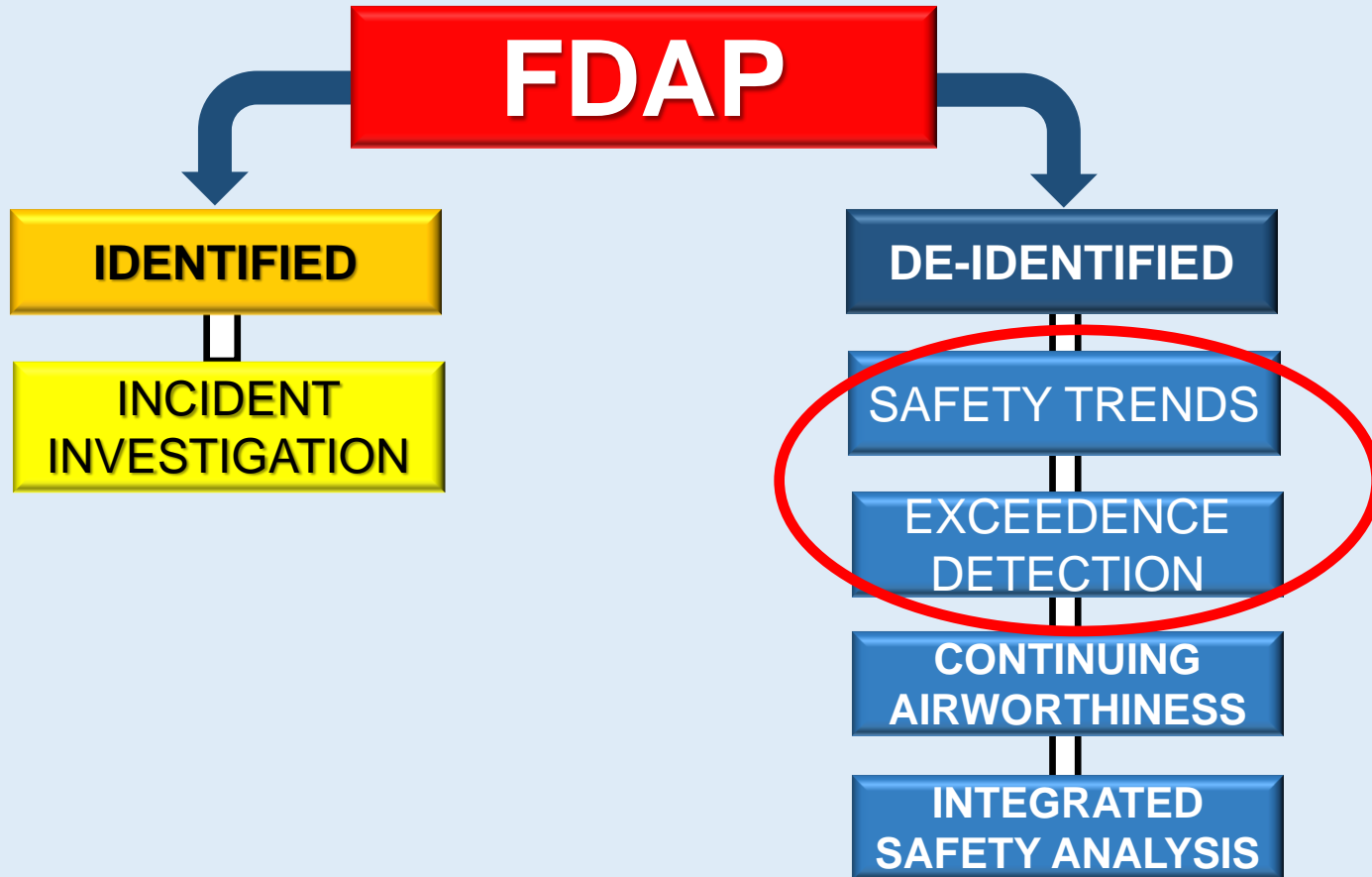
5.2 Incident Investigation

- 5.2.1 FDAP provides quick and valuable quantifiable recorded data for safety investigation of mandatory reportable incidents. FDAP captured flight parameters, performance and system status assist in concluding the cause and effect of the event.
- 5.2.2 In the safety investigation of mandatory reportable incidents, the FDAP's protocol of data confidentiality would not apply as crew narrative of the incident providing the context of the incident and the applicable specific human factor issues contributing to incident plays an integral part of the investigation.
- 5.2.3 Additionally, in the event that the FDAP reveals a flight profile and/or operating parameters that are classified as a mandatory reportable incident under ICAO Annex 13 or applicable State Regulation(s), the event must be immediately identified and incident report filed accordingly and investigated by the operator.



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SAFETY TRENDS & EXCEEDENCE DETECTION

5.1 Identification of Undesirable and Unsafe Trends through Exceedence Detection and Routine Operational Measurements

5.1.1 FDAP enables analysis of flight data to identify areas of operational risk through a pro-active and routine collation of a pre-determined core set of flight parameter exceedances. These de-identified non-standard flight operations, deviation from prescribed operating procedures and unsafe circumstances can be detected and quantified into undesirable and unsafe trends for remedial action(s) to be taken.

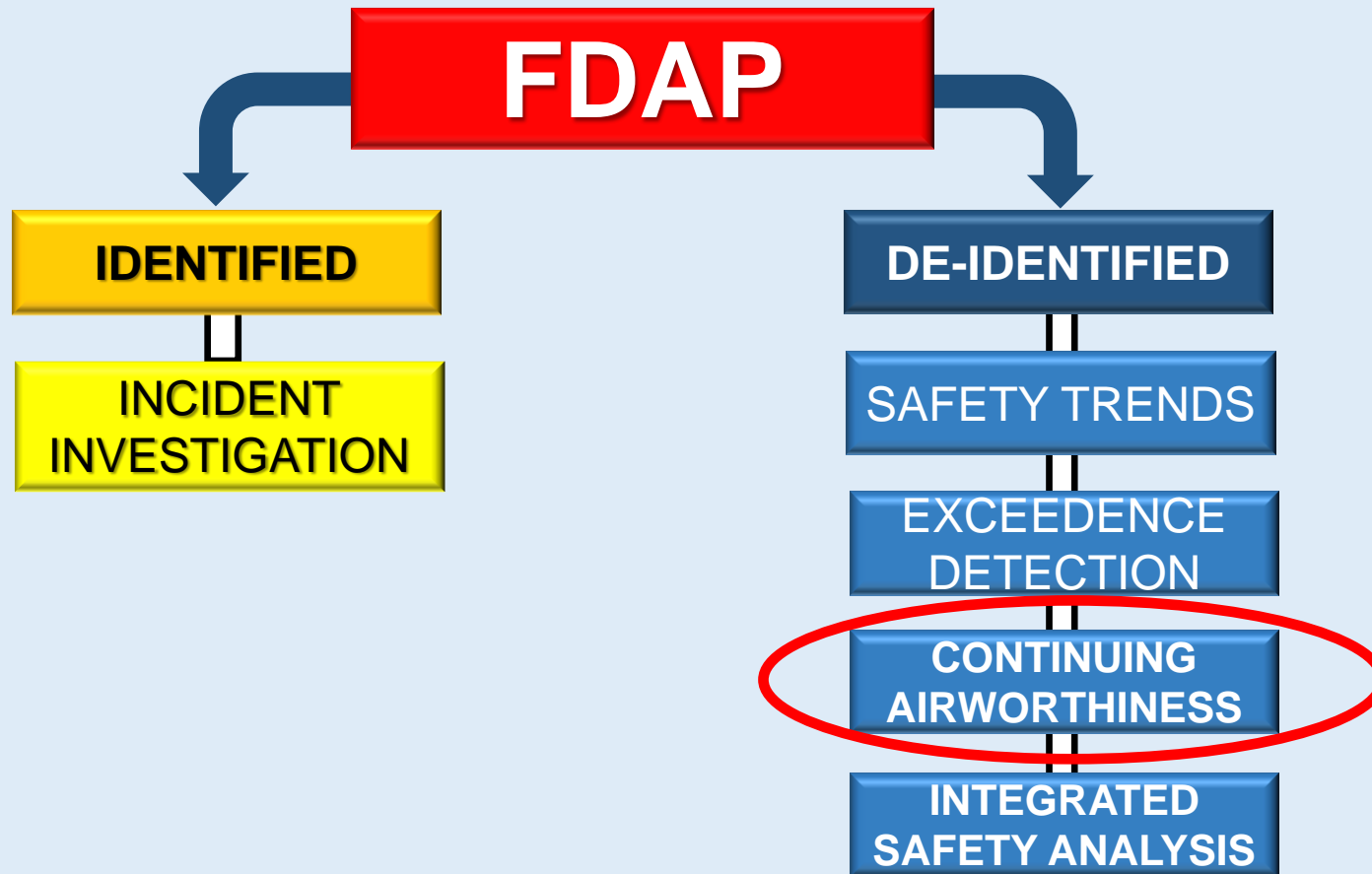
5.1.2 De-identified exceedence detection data gathered and lessons learnt are shared with the operator's flight crew for risk awareness.

5.1.3 The FDAP also enables the continued monitoring of the effectiveness of remedial actions introduced.



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CONTINUING AIRWORTHINESS

5.3 Continuing Airworthiness

- 5.3.1 Routine and specific event data from the FDAP can be utilized as an integral part of an operator's continuing airworthiness function as required under ICAO Annex 8. The data are analyzed to ensure that the operator's aircraft are in a condition for safe and efficient operation.
- 5.3.2 FDAP can also be used by the operator as an engine-monitoring program to analyze engine performance and its efficiency. Other use of the data includes airframe drag measurements, avionics and other system performance monitoring, flight control performance, taxi fuel monitoring, brake and reverse thrust usage.
- 5.3.3 Routine or specific event data acquired from FDAP for continuing airworthiness forms part of the operator's maintenance and efficiency program and are separate from the flight parameters exceedence detection and safety trend data collection. Therefore, the extent and dimension of data collection in this category remains solely at the discretion of the operator provided the non-punitive and confidentiality aspect of the FDAP is maintained.



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CONTINUING AIRWORTHINESS

PILOT TRAINING - IDENTIFY POTENTIAL OPERATIONAL RISK AND MODIFY TRAINING ACCORDINGLY

OPERATIONAL EFFICIENCY – ADJUST STANDARD OPERATING PROCEDURE

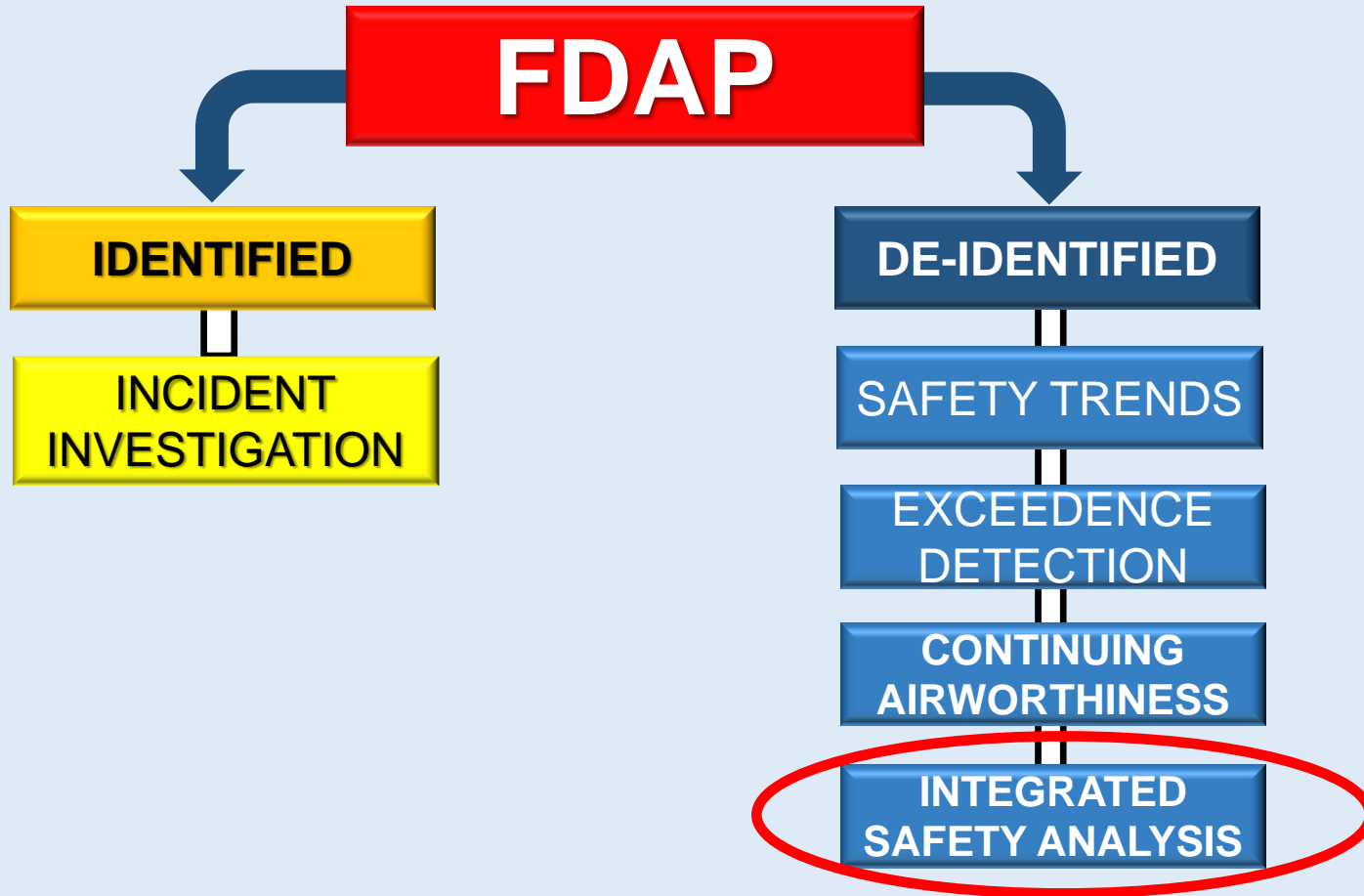
MAINTENANCE MONITORING – REDUCE UNSCHEDULED MAINTENANCE AND IMPROVE EQUIPMENT RELIABILITY

IMPROVE OPERATIONAL ENVIRONMENT – AIR TRAFFIC CONTROL AND AIRPORT



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INTEGRATED SAFETY ANALYSIS

5.4 Integrated Safety Analysis

- 5.4.1 FDAP data should be kept in a central safety database and linkable to, or accessible by other safety database such as incident reporting systems and technical fault reporting system while safeguarding the confidentiality of the FDAP data.
- 5.4.2 This cross-reference capability enables a multi-dimensional and circumferential understanding of events providing accurate information on the overall safety health of flight and maintenance operations.



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DETAILED IMPLEMENTATION PLAN

LEVEL OF STATE OVERSIGHT



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GOAL 1:

Champion to develop generic principles on the management of collection of information to prevent use of the data collected under FOQA program from inappropriate use against the airlines or their employees.

6. IMPLEMENTATION

6.1 Reference Documents

To assist with the implementation of the Flight Data Analysis Program, operators should make reference to:

- (i) ICAO Doc 10000 *Flight Data Analysis Programme Manual (FDAPM)*
- (ii) ICAO Doc 9422 *Accident Prevention Programme*
- (iii) ICAO Annex 13 Attachment E *Legal Guidance for the Protection of Information from Safety Data Collection and Processing System*



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GOAL 2:

States develop an AC using available materials such as FAA AC 120-82; EC 8/2008; COSCAP RAST ABs and AC and issue ACs in-accordance with their modalities.

ADVISORY CIRCULARS FOR AIR OPERATORS

SUBJECT: GUIDANCE ON THE ESTABLISHMENT OF A FLIGHT DATA ANALYSIS PROGRAM (FDAP)

DATE: DD-MM-YEAR

1. PURPOSE

- 1.1 This advisory circular provides information and guidance to Air Operators for the establishment of a Flight Data Analysis Program (FDAP).



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GOAL 3:

- CAA to issue Guidance Material outlining Standards for the establishment and implementation of FOQA program.
- CAA issue guidance regarding establishment of FOQA including the role of regulatory bodies, unions and organization; component for the analytical tools and methods to be used to identify safety trends and method for corrective actions.

6. IMPLEMENTATION

6.1 Reference Documents

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GOAL 4:

Operator to form a FOQA Steering Committee.

- **Operator form FOQA Steering Committee. The committee will initially formulate procedures and standards for FOQA.**
- **Committee will issue/educate pilots regarding the FDA program.**
- **The committee may, if required, later monitor the trends and safety issues and make necessary recommendations.**

6.3 FDAP Committee

6.3.1 Administration of the FDAP should involve all stakeholders and the formation of a committee. Members of the FDAP Committee team should include the following:

- (i) Safety Department
- (ii) Pilot representative
- (iii) Data Analyst/ Technical Interpreter
- (iv) Flight Operations Fleet management
- (v) Flight Operations Training department
- (vi) Human Factor interpreter



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GOAL 5:

Operator to install required Software/Hardware

Operator install necessary equipment on its applicable aircraft to support FDA program.

Operator install necessary Software/Hardware to be able to perform necessary FDR download and analysis.



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GOAL 6:

Regulatory body to issue Guidance for Inspector

CAA issue guidance handbook for inspector for regular surveillance of operator regarding compliance with regulatory requirement.



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GOAL 7:

- **Air Operators implement effective FDA Procedure**
- **Company develop and incorporate the FDA procedure into the SMS**



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GOAL 8:

CAA issue Guidance outlining procedure and protocols for sharing of trend information or corrective actions.

CAA will issue guideline and protocol for information/ trend/ recommendations sharing.



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GOAL 9:

CAA to confirm that company have developed and implemented effective FDA program.

CAA conduct surveillance on air operators to ensure compliance with regulatory requirement.



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THANK YOU

APRAST 7 BANGKOK 31 AUG – 04 SEP 2015



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