FDAP Working Group

Presentation to RASG-PA ESC/28

PROPELLING THE NEXT CONNECTION

Flight Data Analysis Program

- Flight Data Analysis Program:
  - Significant safety benefit
  - Heart of operator's SMS
  - Requirements for aircraft which Max Takeoff Weight is above 27t

No Operator Left Behind

Context of the Working Group

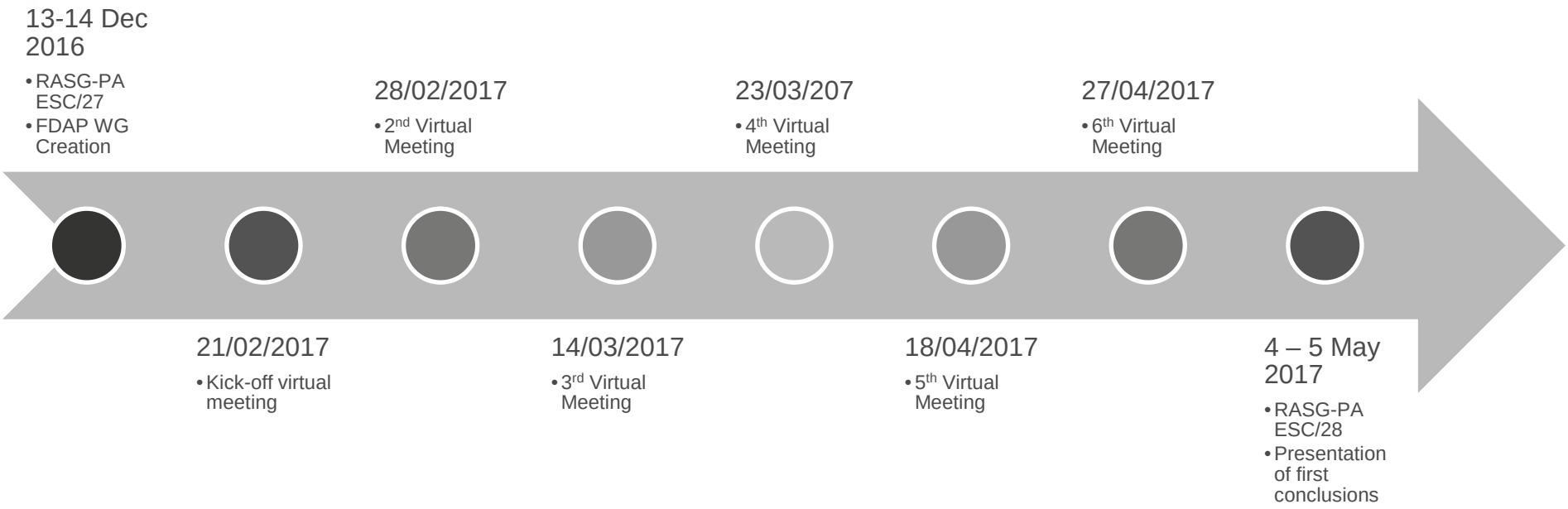
Decision from RASG-PA ESC/27:

- The creation of a dedicated working group on **F**light **D**ata **A**nalysis **P**rogram, co-led by ICAO (South American Office) and ATR, to analyse alternatives to the 27 000 kg threshold.

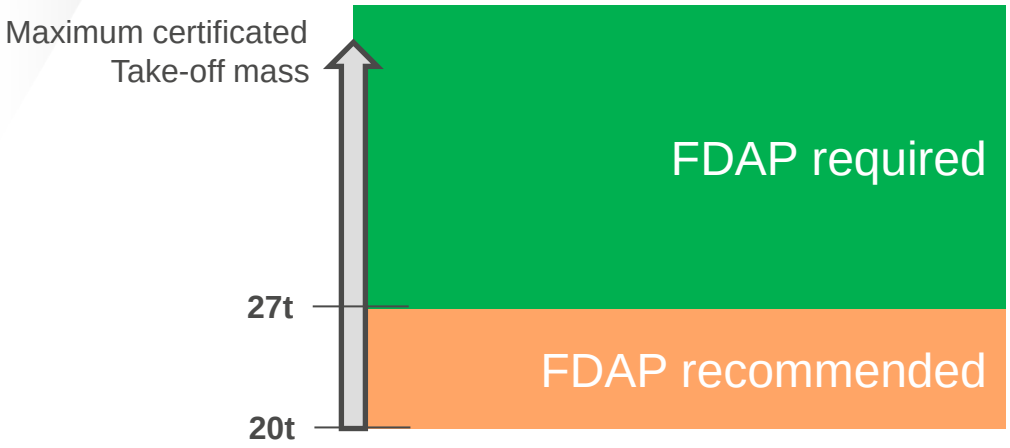
- This group will elaborate an action plan, assign specific actions and present a business case accordingly.

- Its goal is to come up with a recommendation to be presented at the RASG-PA ESC, then obtain approval from all RASG-PA members. Once agreed, this RASG-PA recommendation will be then analyzed by the ICAO Air Navigation Commission (ANC) on the annual follow-up meetings with RASG-PA.

Planning



ICAO's requirement & recommendation
FDAP: as-is situation



Extract from ICAO's **Annex 6 Part 1**

(10th edition, July 2016)

3.3.1 **Recommendation.**— *The operator of an aeroplane of a certificated take-off mass in excess of 20 000 kg should establish and maintain a flight data analysis programme as part of its safety management system.*

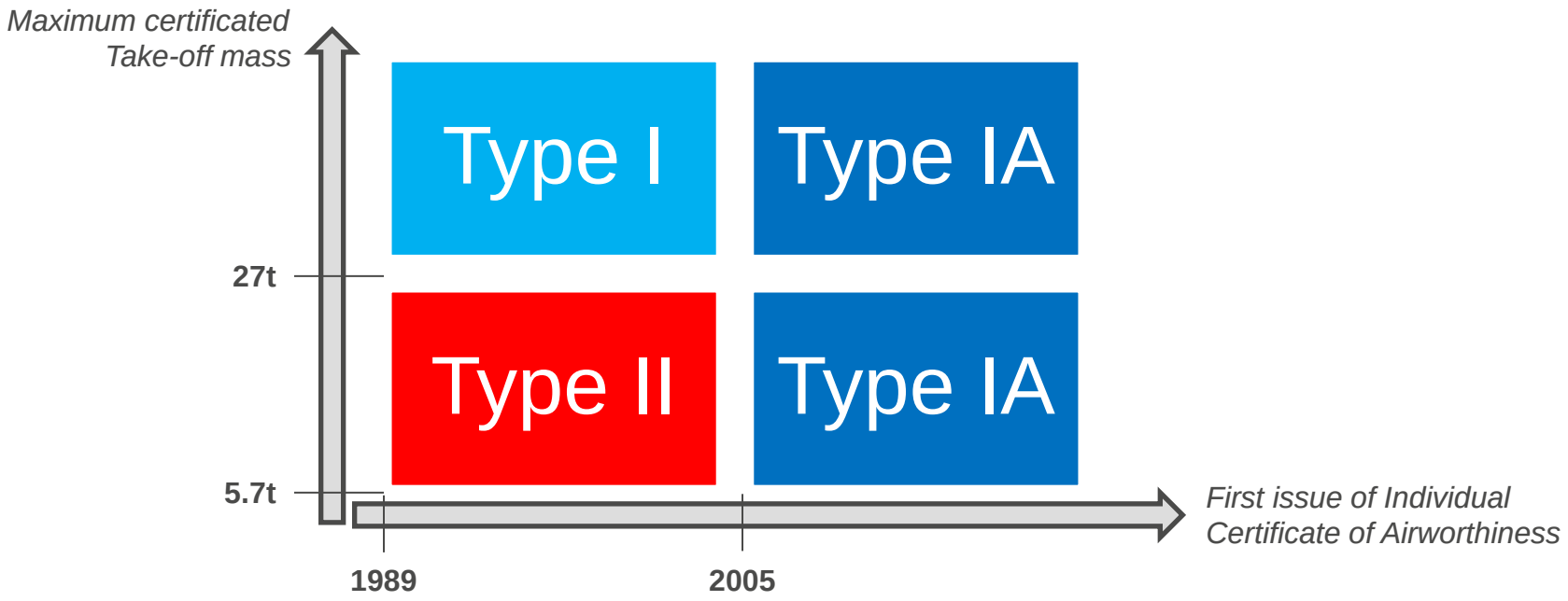
3.3.2 The operator of an aeroplane of a maximum certificated take-off mass in excess of 27 000 kg shall establish and maintain a flight data analysis programme as part of its safety management system.

ICAO's requirements
FDR: as-is situation

6.3.1.2.3 All aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 1989 shall be equipped with a Type I FDR.

6.3.1.2.4 All aeroplanes of a maximum certificated take-off mass of over 5 700 kg, up to and including 27 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, shall be equipped with a Type II FDR.

6.3.1.2.11 All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued after 1 January 2005 shall be equipped with a Type IA FDR.



FDR Types

- Types II & IIA: 16 parameters

Non suitable for FDAP

Type II

Time, Altitude, Airspeed, Heading, Normal & longitudinal acceleration, pitch, roll, VHF key, engine power, flaps, slats, reversers, ground spoilers, outside air temperature, automation modes

- Type I: 32 parameters

Suitable for FDAP

Type I

Type II + lateral acceleration, pilots inputs, radio height, a/c position (ILS, latitude & longitude), master warning, DME distance, air/ground status, GPWS, angle of attack, ground speed, landing gear

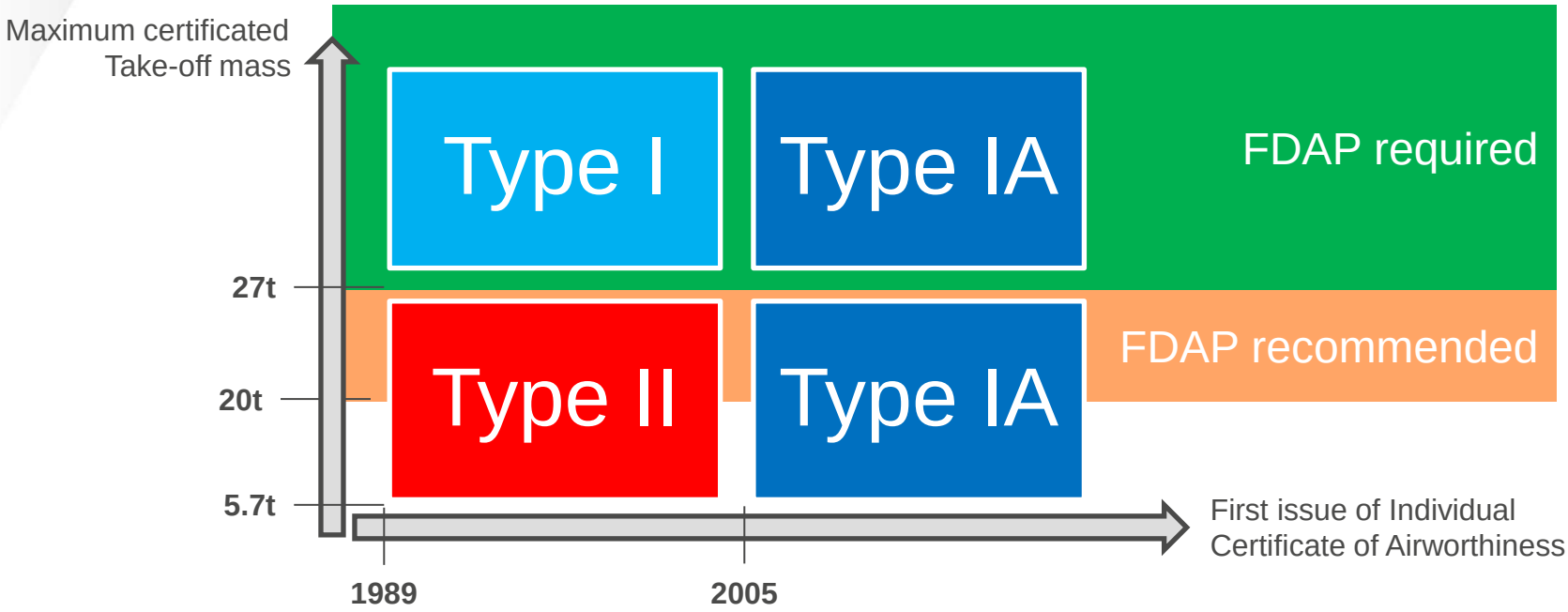
- Type IA: 78 parameters

Optimum for FDAP

Type IA

Type I + brakes, TCAS, windshear, targets, electrical bus status, bleed, CG, fuel, ice detection, trims, hydraulic pressure

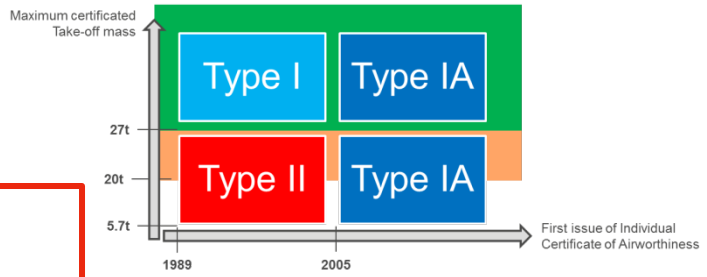
ICAO's requirements & recommendations
FDR & FDAP: as-is situation



Type II Not suitable for FDAP

Type I Type IA Suitable for FDAP

Proposed alternative



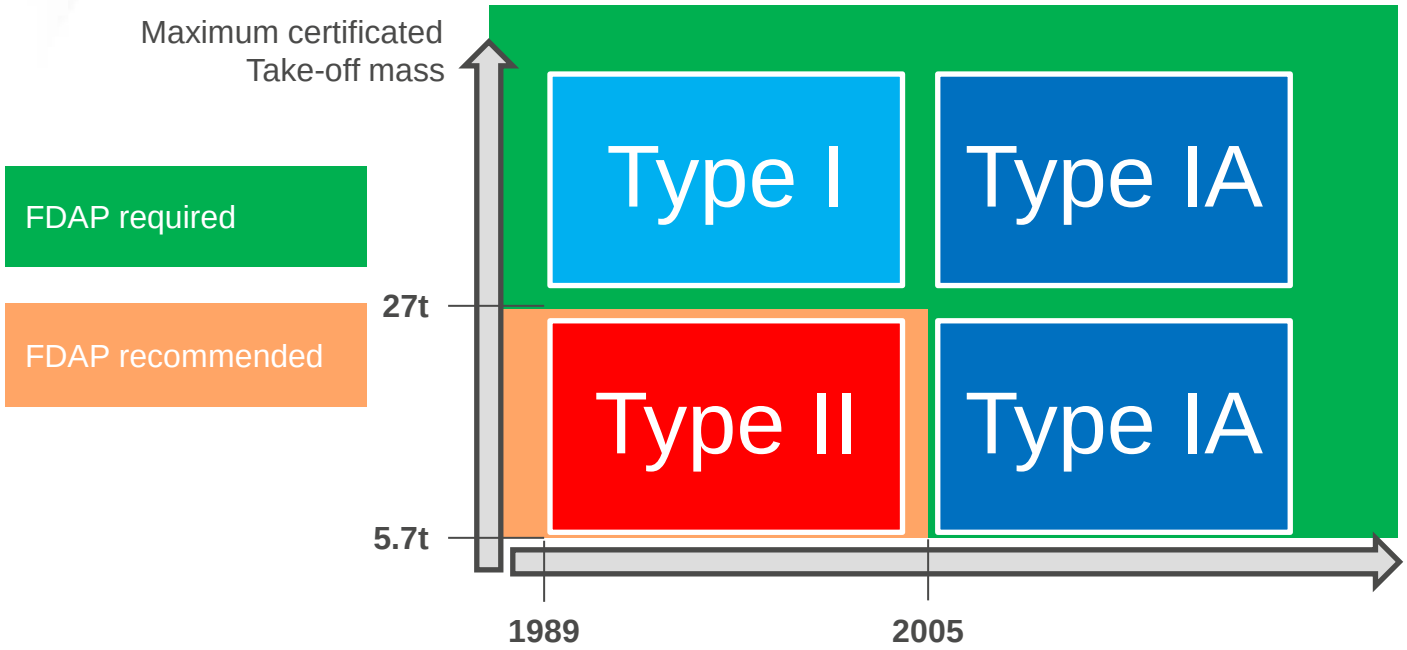
As-is

Rationale of the proposed alternative:

- Consistency between FDR type & FDAP

Potential show stopper of the proposed alternative:

- Easy access to recorded data => QAR



Recommendation: Type I instead of Type II

Proposed alternative

Modification

3.3.1 **Recommendation** All aeroplanes of a maximum certificated take-off mass over 5 700kg should be equipped with a Quick Access Recorder (QAR). This QAR should record at a minimum the parameters recorded by the Flight Data Recorder and the operator should establish and maintain a flight data analysis programme as part of its safety management system.

No change

3.3.2 The operator of an aeroplane of a maximum certificated take-off mass in excess of 27 000 kg shall establish and maintain a flight data analysis programme as part of its safety management system.

New

3.3.3 All aeroplanes of a maximum certificated take-off mass over 5 700kg for which the individual certificate of airworthiness has been first issued on or after 1 January 2005 shall be equipped with a Quick Access Recorder (QAR). This QAR shall record at a minimum the parameters recorded by the Flight Data Recorder and the operator shall establish and maintain a flight data analysis programme as part of its safety management system.

New

6.3.2.5 **Recommendation** All aeroplanes of a maximum certificated take-off mass of over 5 700kg, up to and including 27 000 kg, for which the individual certificate of airworthiness is first issued on or after 1 January 1989, should be equipped with a Type I or Type IA FDR.