IASS 2019 - TAIPEI

BREAKING BARRIERS

AIRLINES FLIGHT DATA MONITORING

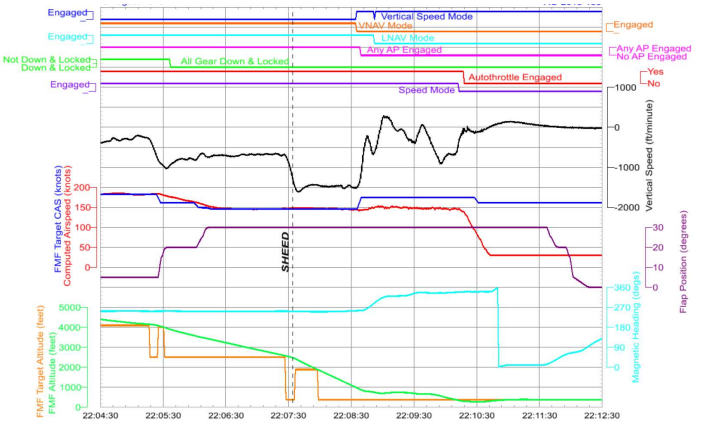
➔ A PILOT'S PERSPECTIVE ➔

Session 9 – Pilot Training - Capt. Bertrand de Courville

FDM/FOQA DATA

WHO ARE THE OWNERS?

WHO ARE THE USERS?



WHO ARE THE USERS?

- **De-identified** data

Relatively opened access

- Airline safety department
- Training department
- University, consultants
- « ASAP/FOQA », D4S »
- Manufacturers, Etc.

- **Identified** data

Very restricted access

- Safety investigation boards in case of serious incident or accident
- “Gate keepers” or trusted persons in case of “FDM/FOQA events”

THE BEGINNING…
(70s)

FDM AIRLINE/UNION AGREEMENT

Prerequisite: absolute TRUST

Pilots/Management agreement

Robust and efficient barriers

Successful FDM programs

But, 40 years later, pilots still …

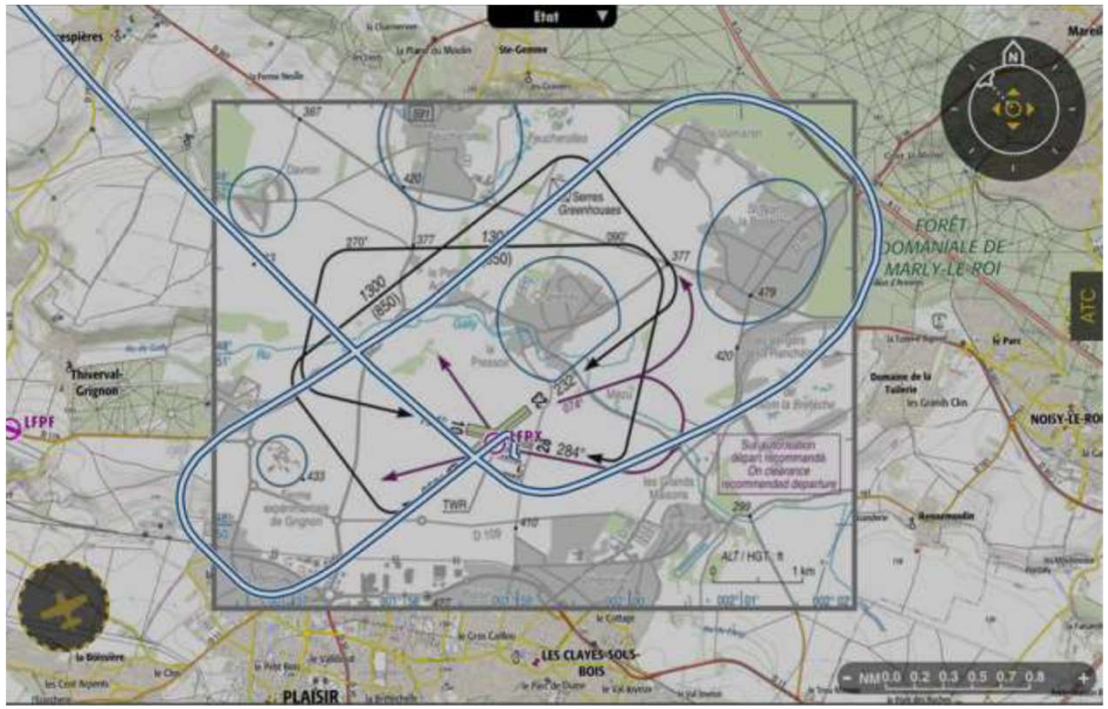
- need permission to see their own data
- know about it only when something bad has happened
- keep a defensive attitude regarding recorded flight data

And in the end:

Very limited innovations : "*No one dared to change anything*"

FLIGHT DATA USERS

Even general aviation pilots have access to their flight data …



Approach and landing flight path at Chavenay (LFPX). DR250 (2nd July 2019 - Air Nav Pro Software). Avoidance of noise protected areas can be checked just after the flight.

GIVING PILOTS DIRECT ACCESS TO THEIR OWN FLIGHT DATA

Case 3

World's First Video-Based Flight Review Application, *"Furikaeri"*

Using Big Data to Help Pilots Fly Safer and Improve Skills

As the world's first, the ANA Group has introduced an application that allows pilots to watch a video review of their performance post-flight via tablet. Post-flight reviews assist pilots in flying safer and polishing their technical skills.

This review application immediately analyzes Big Data collected from on-board sensors and other sources, combining this data with animations of flight conditions, gauges, and ground topography for a visual reproduction of the flight. Pilots can use their own mobile devices to review their flight performance at any time. The cutting-edge technology behind the video review was created by a project team made up of some 50 experts drawn from various companies and divisions within the ANA Group, as well as consultants from outside.

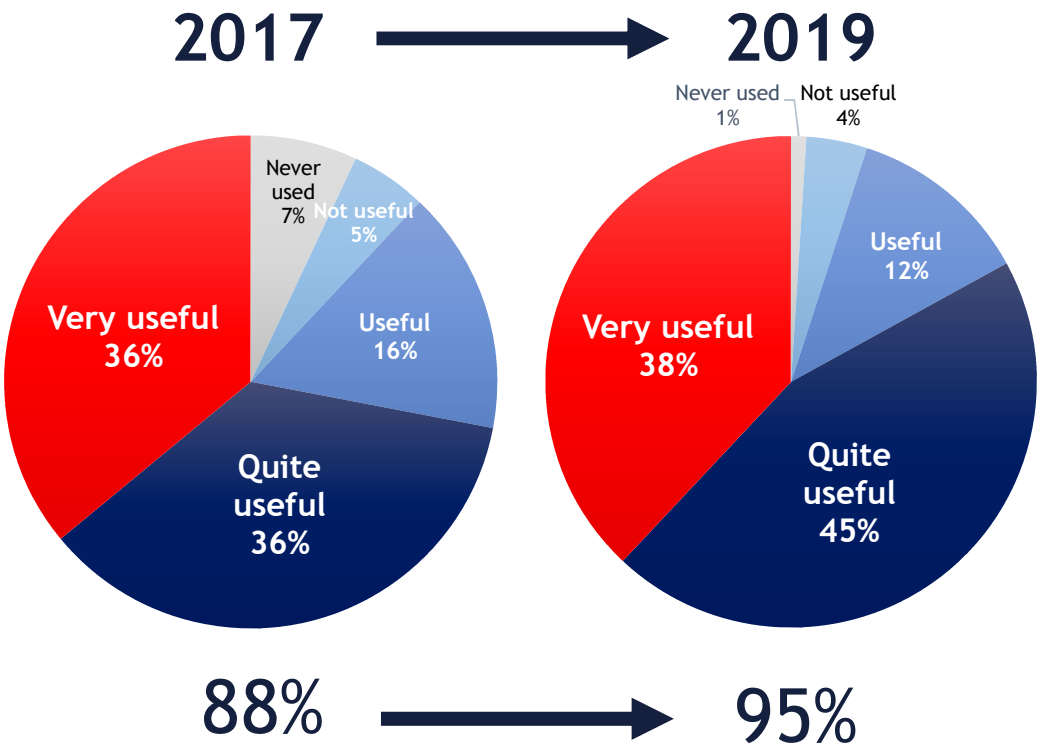
Conceptual Image of the Post-Flight Video Review Application

The major global airlines have been emphasizing unanticipated risk as an important safety concept alongside traditional incident avoidance and the prevention of recurrence. At the same time, aircraft technology is rapidly advancing through IoT, networking, and data processing.

GIVING PILOTS DIRECT ACCESS TO THEIR OWN FLIGHT DATA

- Since **April 2017**
- **3,000 pilots**
- **140,000+** animations already replayed
- **250** replayed daily
- An animation request **every 4th to 5th flight**

GIVING PILOTS DIRECT ACCESS TO THEIR OWN FLIGHT DATA

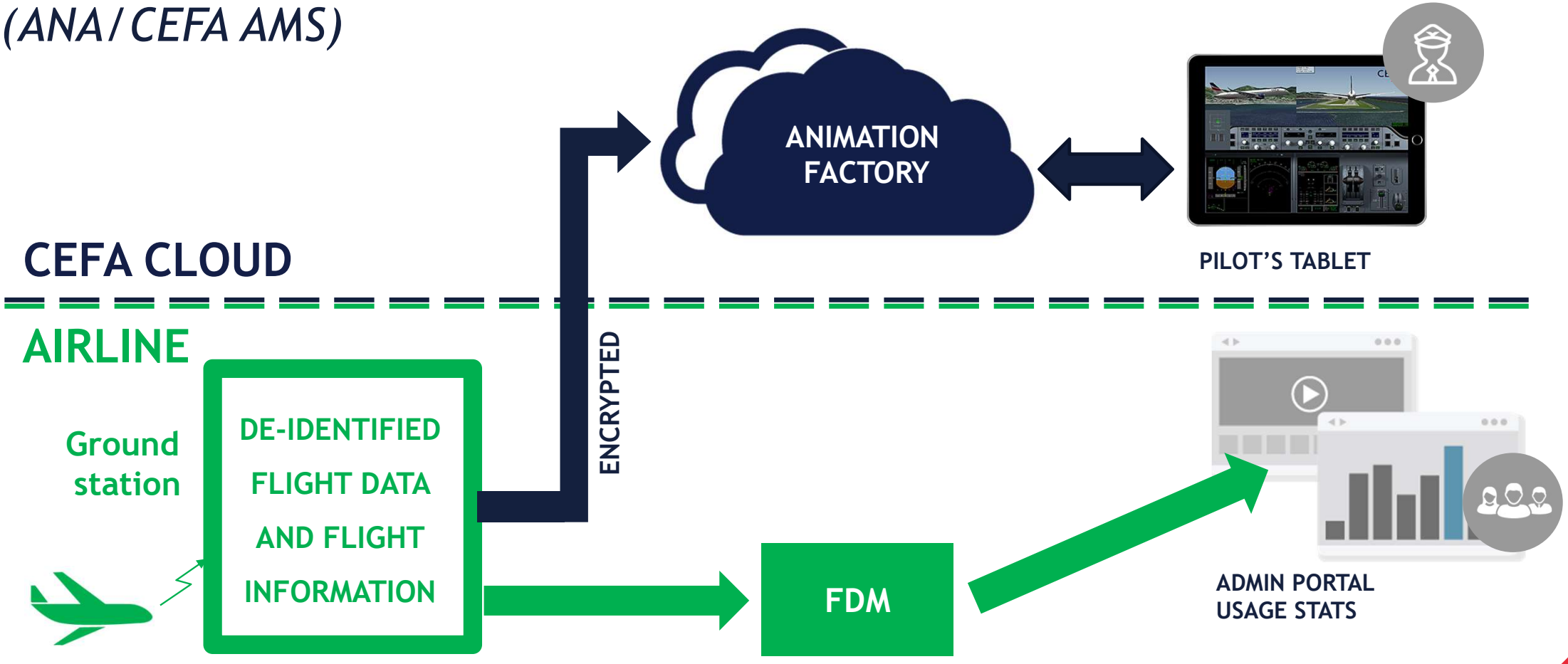


"Is "CEFA AMS" useful for safety and technique?"

Percentage of the pilots agreeing that CEFA AMS is "*useful, quite useful or very useful*" for performance review and safety enhancement.

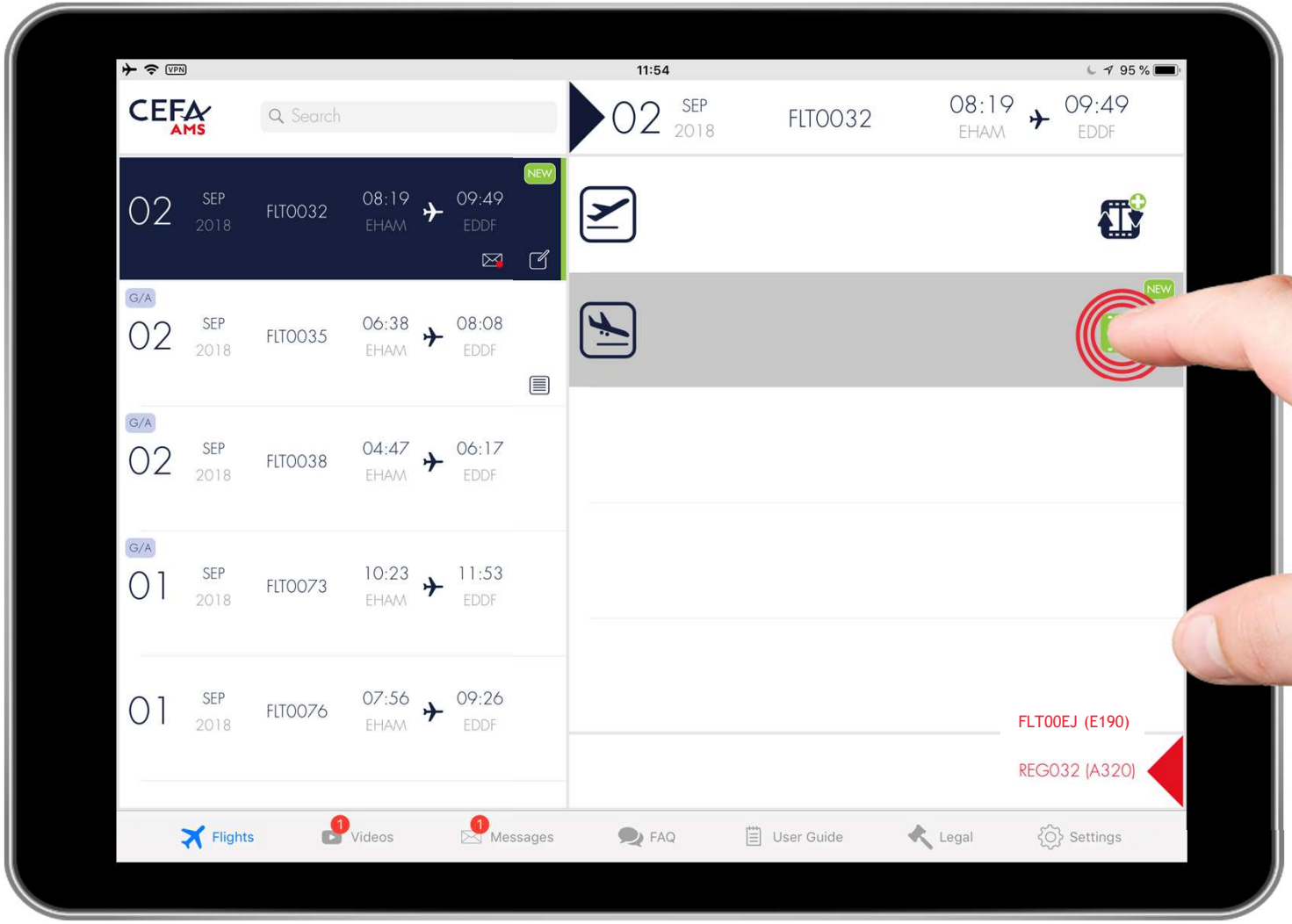
HOW DOES IT WORK?

(ANA / CEFA AMS)



ON PILOT'S IPAD OR SURFACE TABLET

ON YOUR IPAD OR SURFACE TABLET



ON IPAD OR SURFACE TABLET

A SECURE SYSTEM

CONFIDENTIALITY/ANONYMITY

- Pilots become their own gatekeeper: they have an access only to their own flights on a personal account.
- The anonymity of the involved pilot is respected
- Confidentiality is preserved: animation are replayed in a streaming mode and cannot be downloaded
- Airlines FDM/FOQA programs remain unchanged: FDM events are monitored and addressed the same way

THE BENEFITS

(SELF) DEBRIEFINGS / REPORTING

- Flight International magazine published a premonitory article in 1966 : "(…) *airline managements should be persuaded that flight recorders aren't just crash recorders* (…) ***they are pilot training aids***".
- Airmanship, experience building, learning processes are based on pilots capacity to question themselves about their own performance, after each flight.

THE BENEFITS

(SELF) DEBRIEFINGS / REPORTING

- Data animations make possible self-debriefings - or debriefings while the crew is still together - based on factual data, not only on pilot's memory.
- Complex and dynamic situations can be understood better and - if needed - reported better. This is most valuable for sequence of events where automation changes can be easily missed.
- Learning become possible after any flight: this help to built up self confidence. No need to "ask permission".
- EMPOWERMENT SELF CONFIDENCE TRUST

GIVING PILOTS DIRECT ACCESS TO THEIR OWN FLIGHT DATA

"It has revolutionized the company culture regarding the debriefings and the use of flight data"

"It has freed pilots' speech!"

M. Hideo Morioka
Senior Director at Safety promotion and Flight Data Analysis

FLIGHT SAFETY FOUNDATION

72nd annual
INTERNATIONAL AIR SAFETY SUMMIT
IASS 2019

What next ?

Self data animation is transforming the learning and debriefing practices for every pilots. In order to take the best out of this change, the following steps are proposed

1. Approach airlines organizations and/or aeronautical universities for further research regarding the benefits of *self data animation* concept.
2. Assemble an AeroSafety World article to highlight the benefits of *self data animation*.
3. Approach relevant organizations (EOFDM?) for examining the implementation framework in airlines.
4. Construct workshops dedicated to best practices for *self data animation tool* (implementation and use).

THANK YOU!