



# **What ANA expects for the Progress on Intelligent Data Analysis for Aircraft Maintenance**

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ICAS Workshop @ Winterthur on Sep. 11, 2017



# About ANA



## ANA History

1952 : Incorporated “Nippon Helicopter & Aeroplane Transports Co., Ltd.”



1957: Name was changed to “All Nippon Airways Co., Ltd.”

1986 : Operation of first international flight (NRT-GUM)

1999 : Joined Star Alliance as its 9th member

2013 : Introduced holding company structure & start of ANA HOLDINGS INC.



# About ANA



## ANA Today

- Started Over 60 Years Ago...and Now...
- 2007 : “Airline of the Year” by ATW
- 2015: SKYTRAX Commendation for 5th Consecutive Year
- 2015: “World’s Best Airport Services” by SKYTRAX
- 2015: “Best Airline Staff in Asia” by SKYTRAX
- 2015: Highest 5-Star Rating 3rd by SKYTRAX
  - 3rd consecutive year to receive this award
  - ANA is the only 5-star rated airline in Japan!





# About ANA



## ANA Fleet : Total 257

	B777-300ER (22) B777-300 (7)		A320/321ceo (12) A320/321neo (4)
	B777-200ER (12) B777-200 (11)		B737-800 (36)
	B787-9 (24)		B737-700 (7)
	B787-8 (36)		B737-500 (16)
	B767-300ER (25) B767-300 (11) B767F/BCF (12)		DHC8-400 (22)



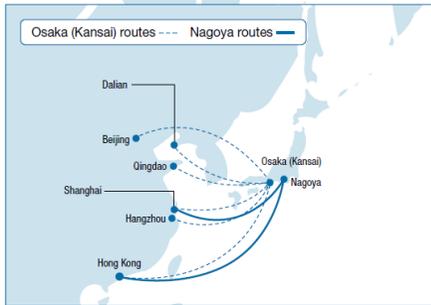
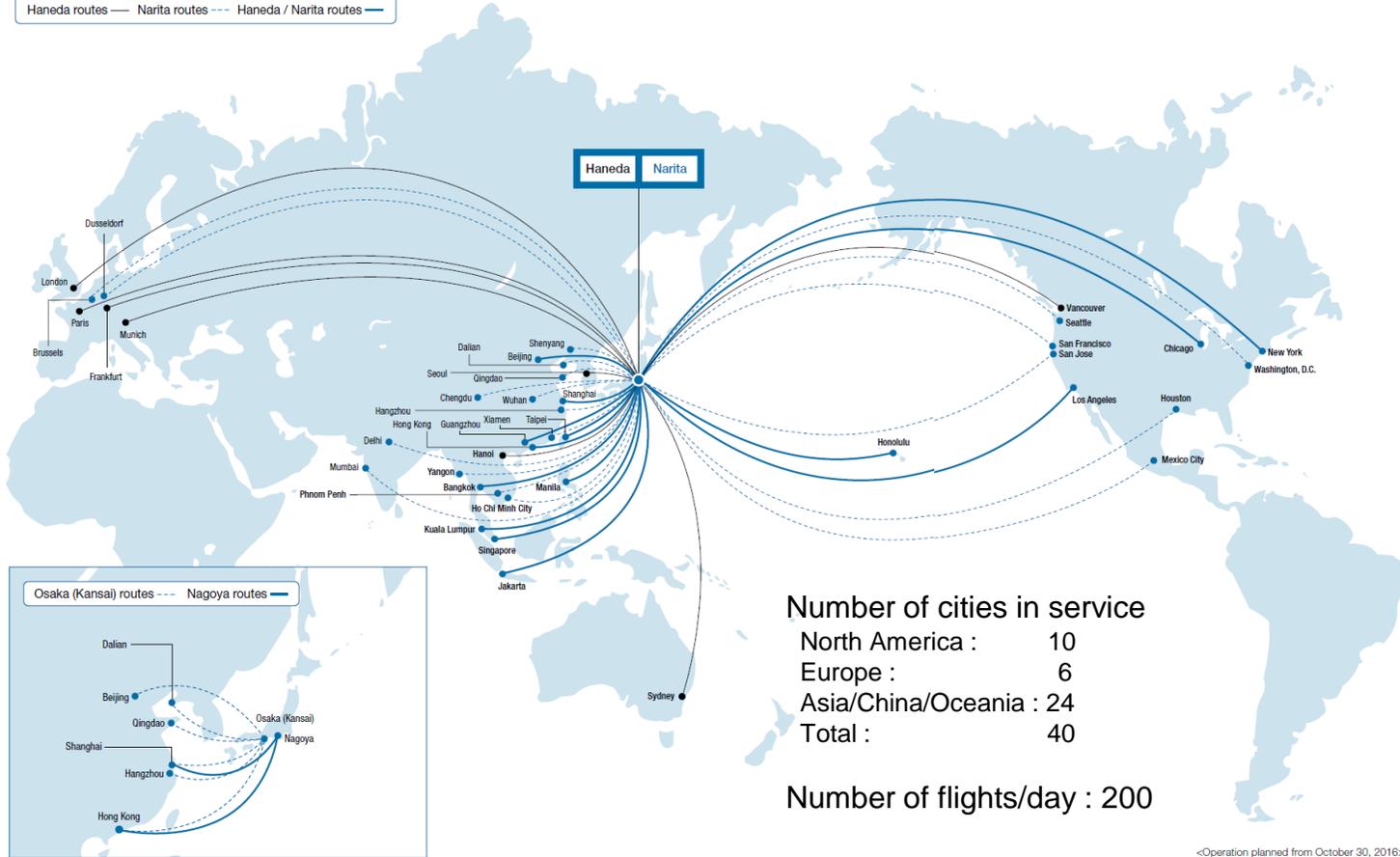
# About ANA



## Flight Route - International

ANA-Operated International Routes

Haneda routes — Narita routes - - - Haneda / Narita routes —



### Number of cities in service

North America :	10
Europe :	6
Asia/China/Oceania :	24
Total :	40

Number of flights/day : 200

Please refer to the following links for information on flights to the destination of your choice.

[International routes] [http://www.ana.co.jp/nwrm\\_ie/](http://www.ana.co.jp/nwrm_ie/)

[Domestic routes] [http://www.ana.co.jp/nwrm\\_de/](http://www.ana.co.jp/nwrm_de/)

<Operation planned from October 30, 2016>  
 • Haneda-New York, Chicago, Kuala Lumpur  
 Timely disclosure filed on June 29, 2016

<Operation planned from February 2017>  
 • Narita-Mexico City  
 Timely disclosure filed on May 12, 2016



# About ANA



## Flight Route - Domestic





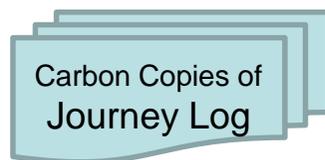
# History of Data Monitoring

ANA

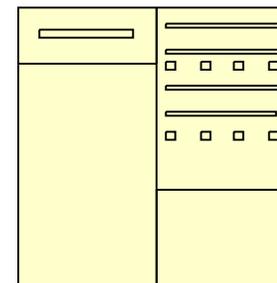
## Until 1980s :



During Cruise, Flight crew recorded  
ALT, TAT, SAT, Mach, N1, N2, EGT, FF

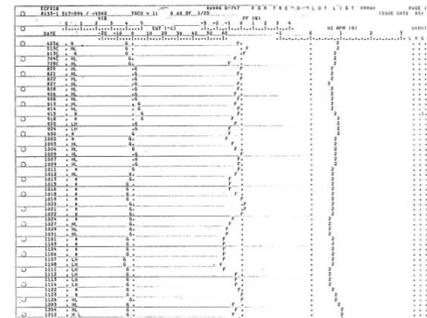


Manual Data Input



ANA Server

## Trend Monitoring



Print out every day



# History of Data Monitoring



ECFD18 8133-1 517-594 / -45A2 TSCD = 11 6 AS DF 1/25 ##### B-747 FDH TREND PLOT LIST ##### PAGE : 2  
 ISSUE DATE 83/ 1/25

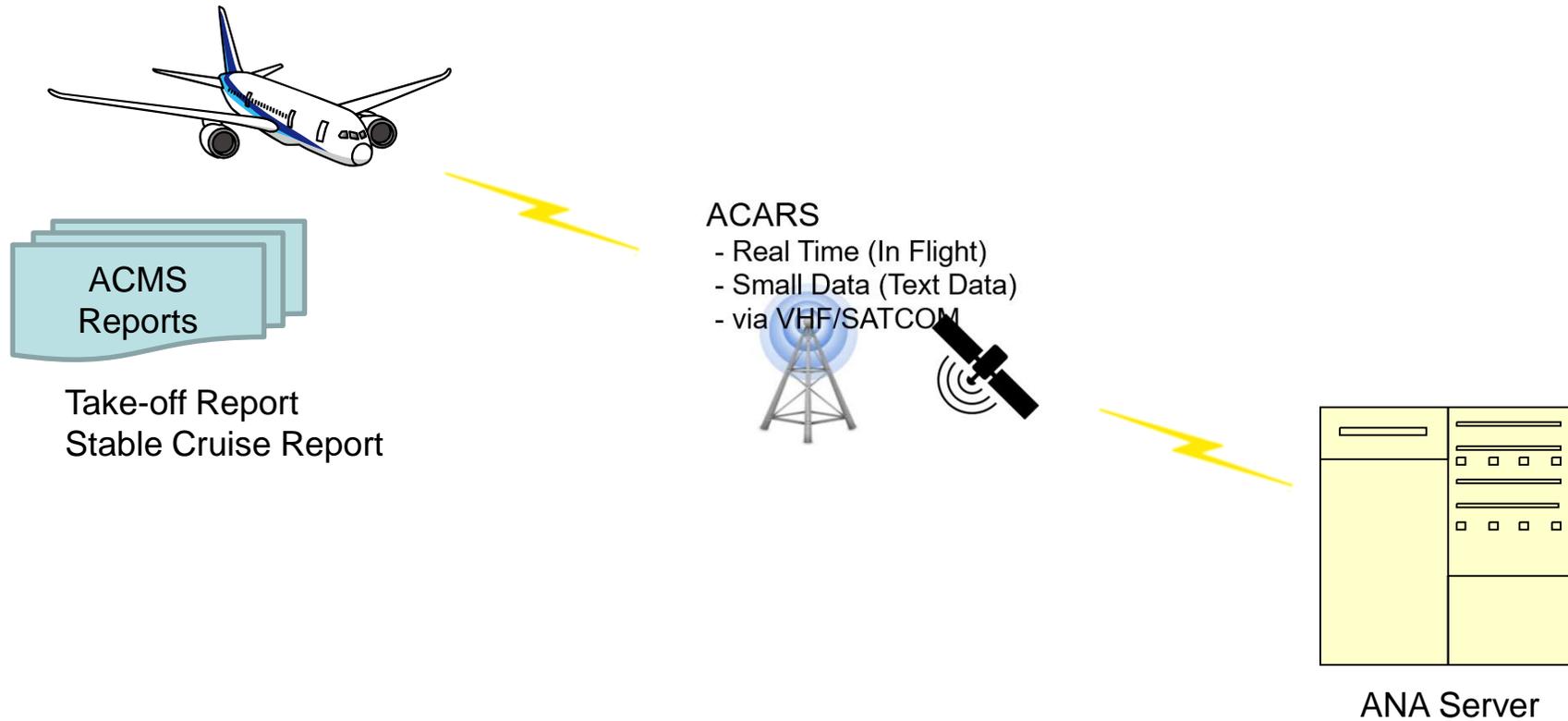
DATE	EGT (°C)											FF (%)				N2 RPM (%)			WARNING				
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# History of Data Monitoring



**In 1990s :**



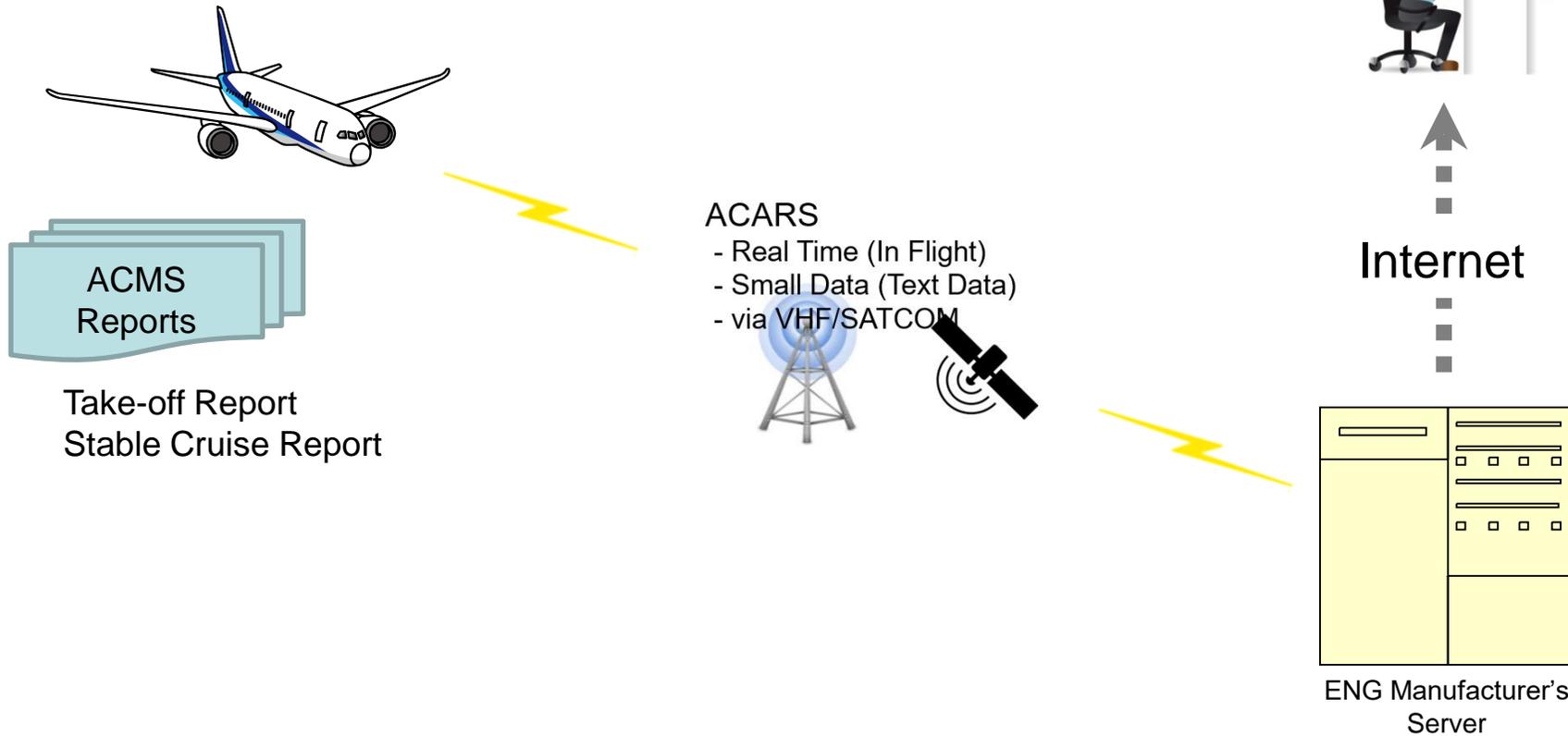


# History of Data Monitoring



## From 2000 and on :

Alert from ENG Manufacturer





# About QAR Data



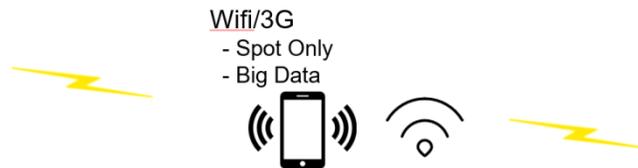
## In the Past :



QAR data are basically used to investigate what happened in the flight when we have some problem.

After the flight, mechanics need to replace the PCMCIA card to retrieve the data.

## Now :



Cloud Server



# To decrease the TFI Rate



## TFI (Technical Flight Interruption)

- Rejected Take Off (RTO)
- Air Turn Back (ATB)
- Diversion
- Abnormal Stop

## TFI Rate is a very important KPI for ANA

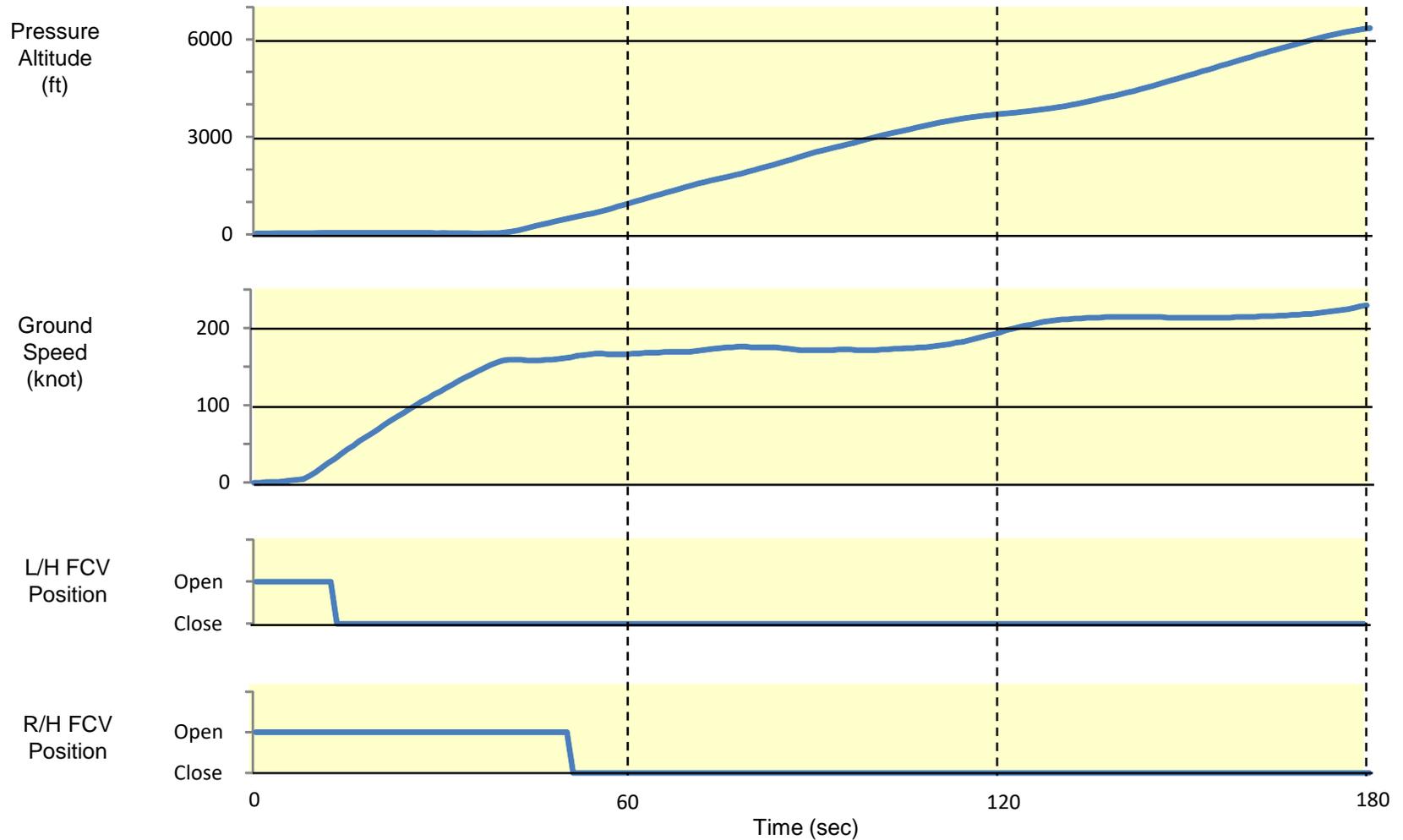
- due to recent SNS environment
- TFI Rate was 0.019/100 flights, i.e. 57 TFI events in FY2016



# To decrease the TFI Rate

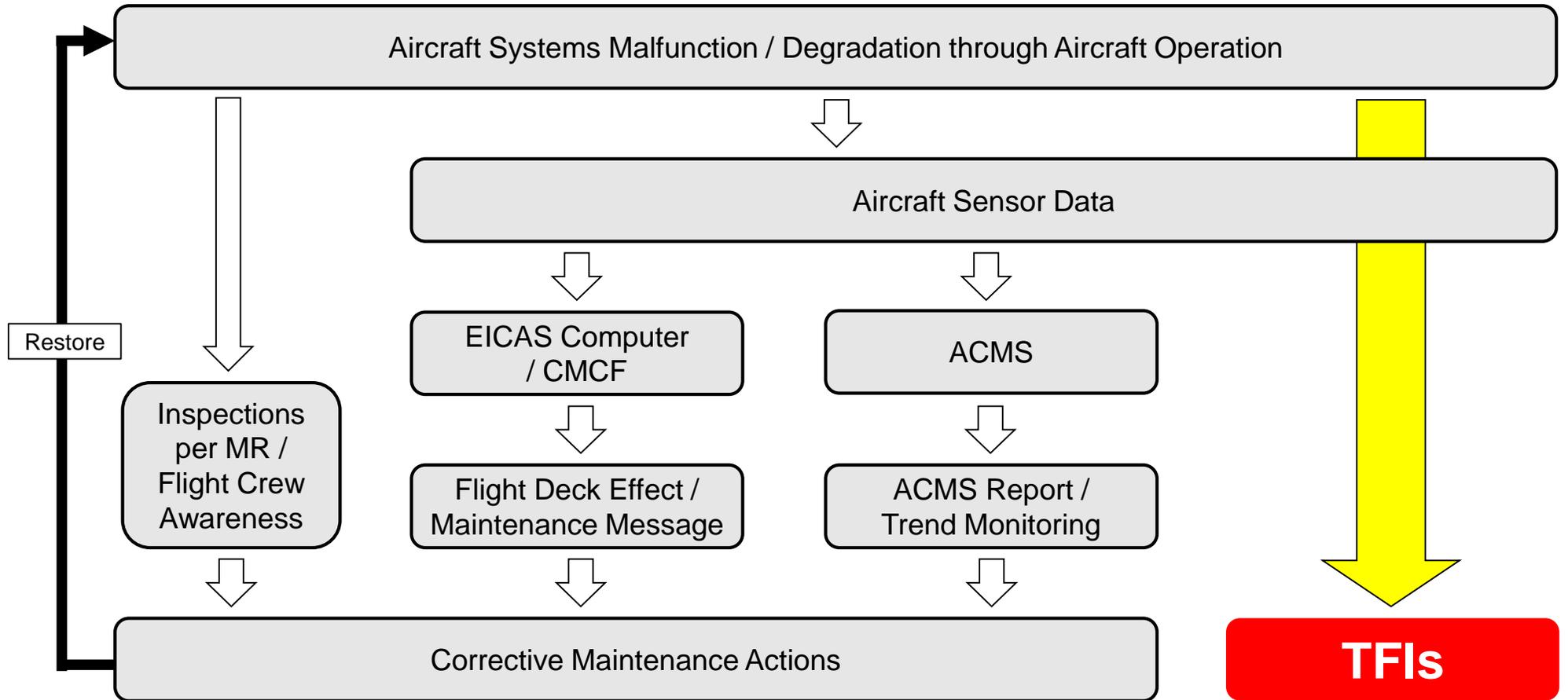


May 26, 2016 NH561 JA85AN (737-800) : ATB due to Dual Pack Off



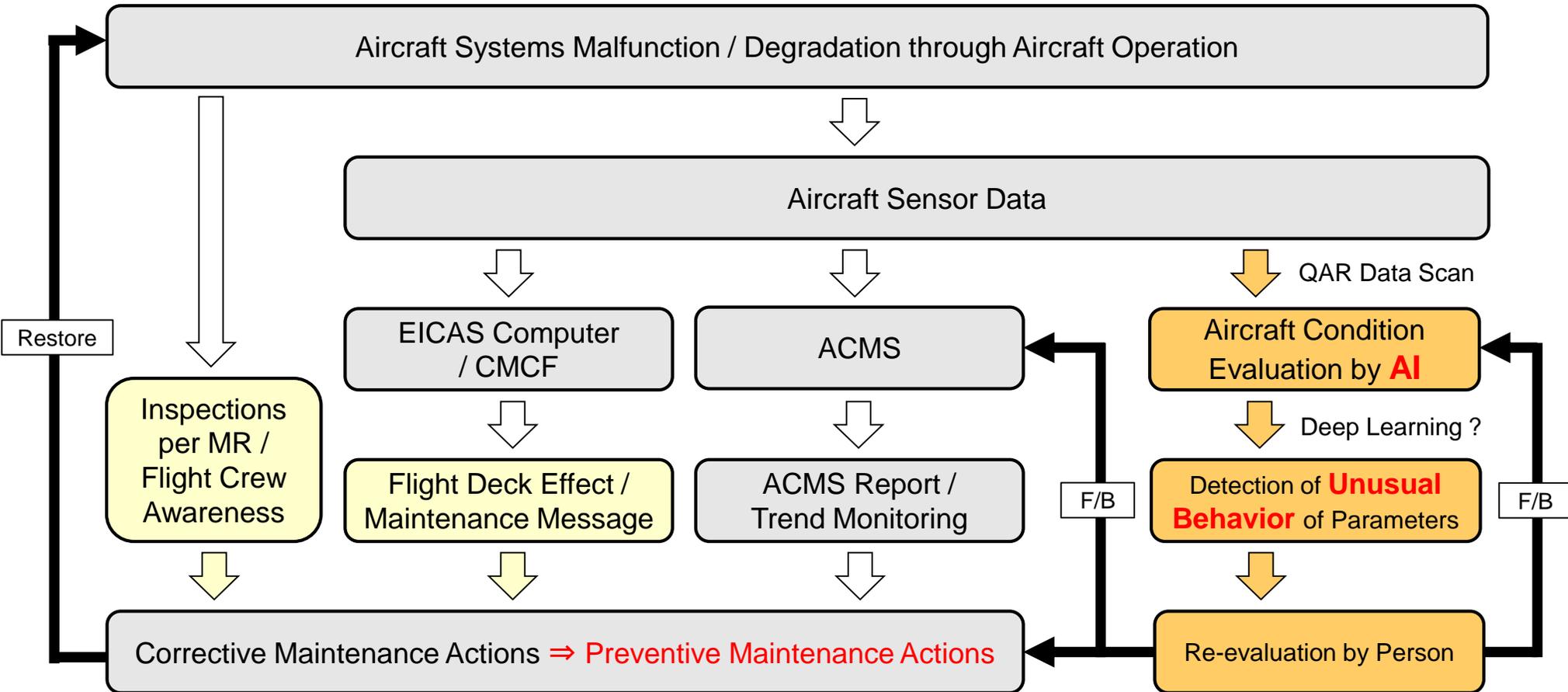


# To decrease TFI Rate



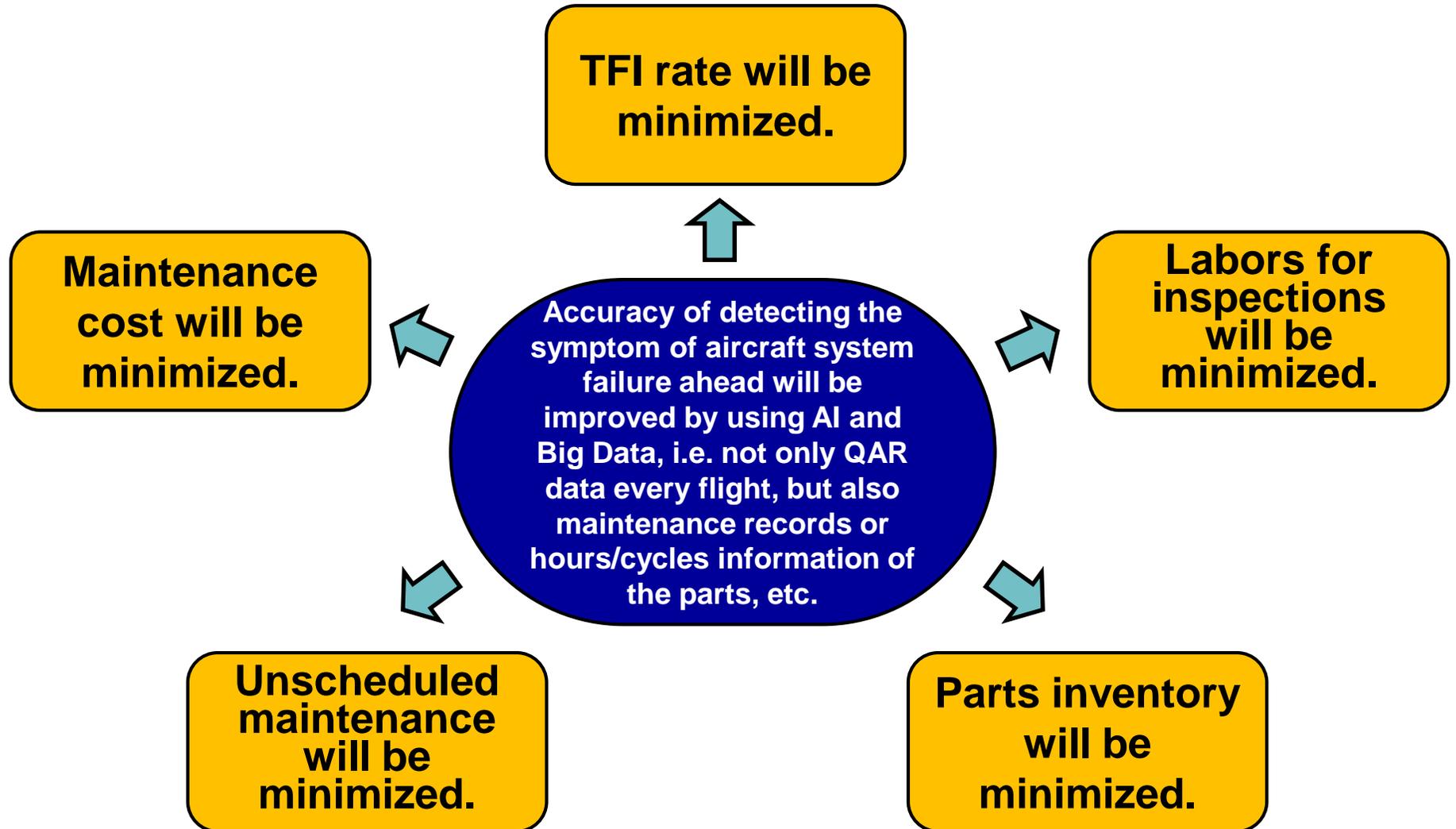


# To decrease TFI Rate





# How AI can change the world





# How AI can change the world



**But it's not that easy. We have to continue making efforts.**

## **Aviustry4.0**

**Aviation + Industry4.0 :**

**Projects to realize the world after the 4<sup>th</sup> Industrial Revolution in the aviation industry. This word implies “Challenge Spirits” with the words of “us” and “try” included. Let's try !**



**Thank you !!**