

ETIHAD's FRMS EXPERIENCE

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الإتجاه
ETIHAD
AIRWAYS
ABU DHABI



Capt. Tony Mackenzie

Head of Regulatory Affairs & Operations Compliance
Etihad Airways

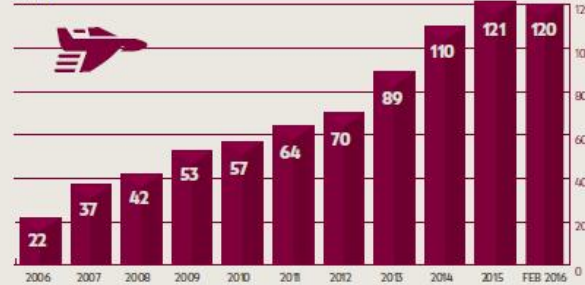
ABOUT ETIHAD

FEB 2016
FAST FACTS
& FIGURES

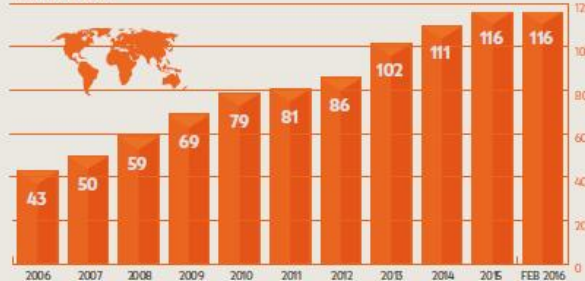


OUR BUSINESS

FLEET



DESTINATIONS*



* Passenger and cargo

- Commenced operations 2003
- A319 / A320 / A321 / A330 / A340 / A350* / A380
- B777 / B787 / B747
- Short / medium / long and ultra-long haul operation worldwide
- 2250 flight crew
- 6514 cabin crew

* 2017

WHY DO WE HAVE AN FRMS?

- CAR-OPS 1
- CAR PART X
- ICAO FRMSTF
- ICAO/EASA Intelligent scheduling on top of predictive FDTL
- Balanced rosters

ETIHAD's FRMS is supervised by Capt. Tony Mackenzie, the GCAA appointed UAE representative to the ICAO Fatigue Risk Management Strategic Task Force. He continues to contribute significantly to FRMSTF recommendations.

WHAT SHOULD AN EFFECTIVE FRMS ACHIEVE?

- Robustness and flexibility of planning/rostering - processes supporting commercial imperatives

Roster 'Published_A320-FO-APRIL', Schedule

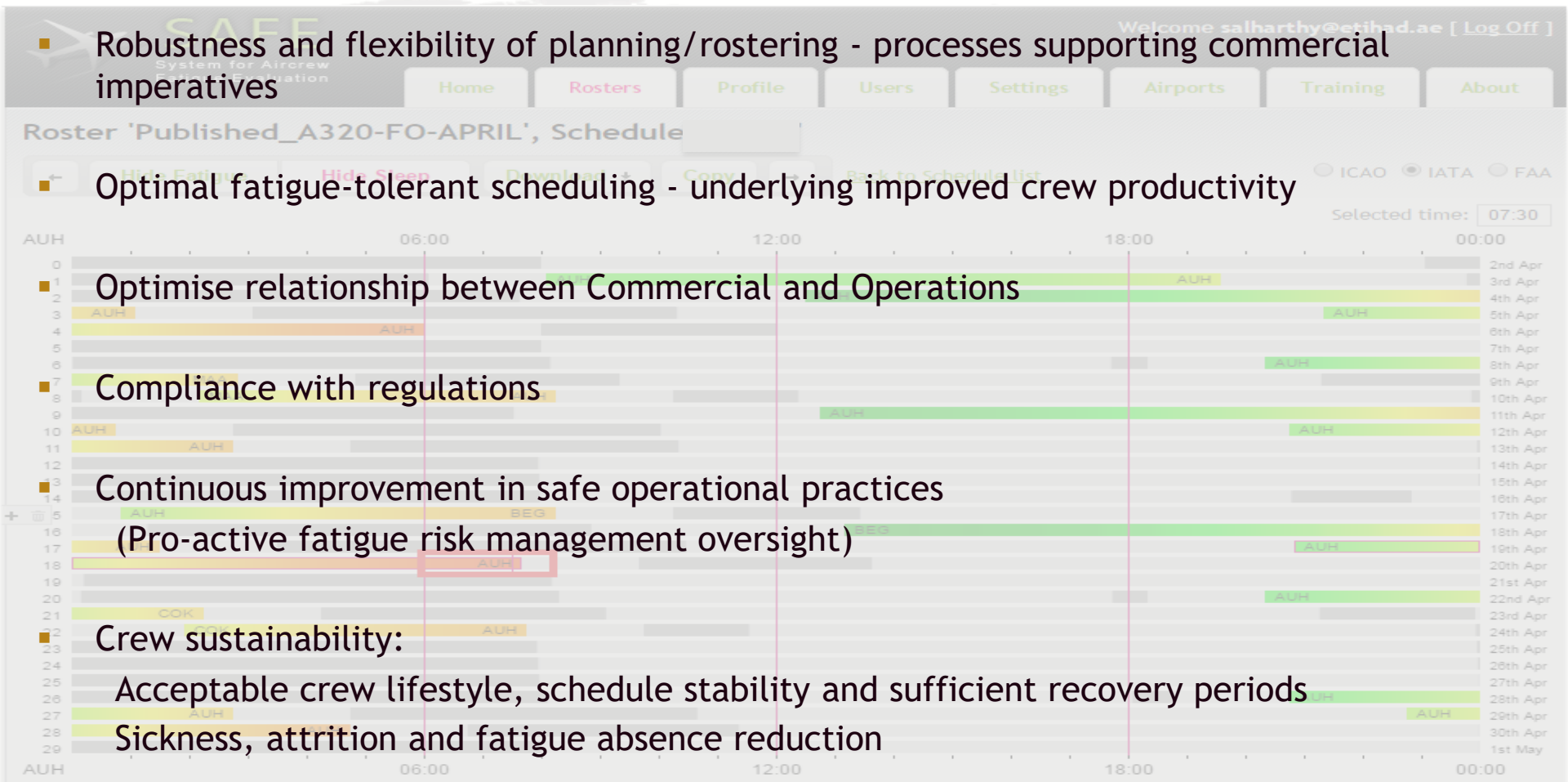
- Optimal fatigue-tolerant scheduling - underlying improved crew productivity

- Optimise relationship between Commercial and Operations

- Compliance with regulations

- Continuous improvement in safe operational practices
(Pro-active fatigue risk management oversight)

- Crew sustainability:
Acceptable crew lifestyle, schedule stability and sufficient recovery periods
Sickness, attrition and fatigue absence reduction



IT'S GOOD FOR BUSINESS

Targeted Analysis and investigation



Maximizing crew utilization safely

Robust defenses against fatigue related risk
Operational efficiencies
Reduced fatigue absence, attrition, sickness



Reduction in cost

USD 1M reduced insurance premium achieved

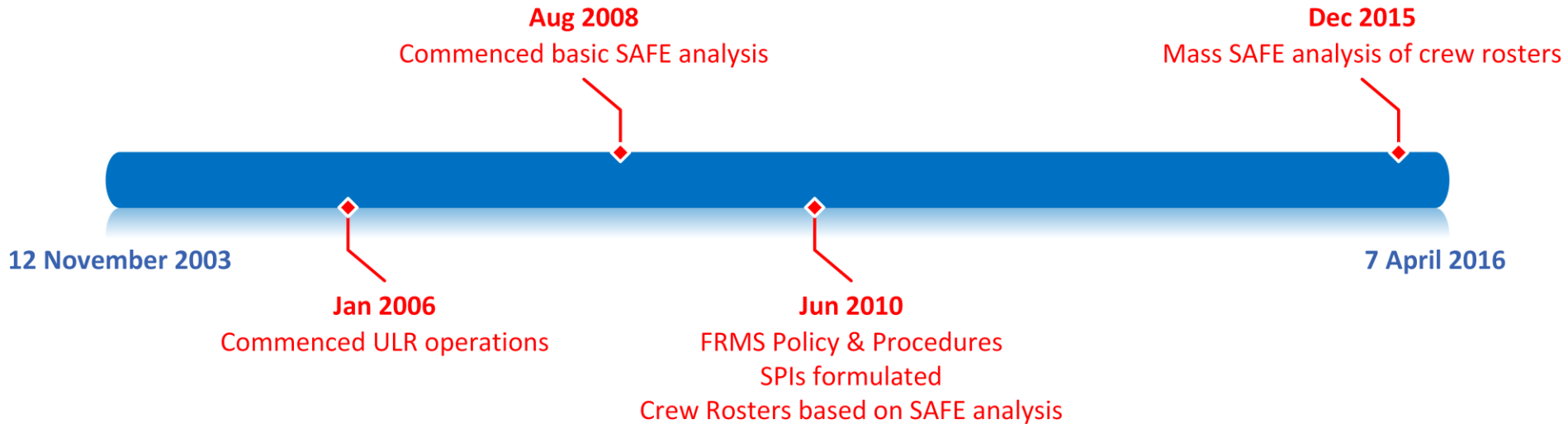


Safer airline

2008 - PRESENT

MILESTONES

Managing potential fatigue effectively in an environment of unprecedented rapid growth



2010 - PRESENT

- FRMS policies and procedures
- FRMSTF recommendations - 90% implementation
- FRMSAG
- FRMS promotion
- FRMS integration in SMS - FTG reports submission via Intalex

- Manager Fatigue Risk Operations and Fatigue Risk Officer
- SAFE integrated in AIMS system with auto-analysis of rosters
- Flight Crew / Cabin Crew FTG trends
- FRMS Guide for Pilots and Cabin Crew
- Sleep Studies – B787 LRV Operations

POLICIES & GUIDELINES

ETIHAD AIRWAYS Fatigue Risk Management System (FRMS) Policy

As a commitment to the continuous improvement of safety, ETIHAD has an FRMS to manage potential fatigue-related risks. This (FRMS) applies to all operations across all fleets.

The Fatigue Risk Management Safety Action Group (FRMSAG) manages the processes used for identifying fatigue hazards and assessing the associated potential risks. The FRMSAG Team also analyses potential risks recommending appropriate mitigating implementation strategies and monitoring controls.

Management is responsible for:

- Providing adequate resources for the FRMS
- Providing adequate crewing levels to support rosters that minimise potential fatigue risk within acceptable transparent limits
- Providing flight and cabin crew with both legal and adequate opportunities for recovery sleep between duties
- Creating an open non punitive culture that promotes open and honest reporting of fatigue related hazards and incidents
- Providing FRMS training to flight, cabin crew and other FRMS support staff
- Ensuring that the fatigue risks within their area(s) of responsibility are managed appropriately
- Regularly consulting with flight and cabin crew regarding the effectiveness of the FRMS through fatigue surveys, and demonstrating continuous improvement and providing an annual review of the FRMS.

Flight and cabin crew are required to:

- Make appropriate use of time off between periods of duty to obtain adequate sleep and rest
- Participate in fatigue risk management education and training. Develop a personal rest strategy that is effective
- Report fatigue-related hazards and incidents through the Intelix Fatigue Report and comply with the FRMS Policy
- Inform their manager or supervisor immediately prior to or during work if: They know or suspect they or another crew member are suffering from unacceptable levels of fatigue; or they have any doubt about their or another crew member's capability to accomplish their duties
- Fatigue Risk Management must be considered a core part of our business as it provides a significant opportunity to improve both the safety and efficiency of our operation and to maximise the well-being of our staff.

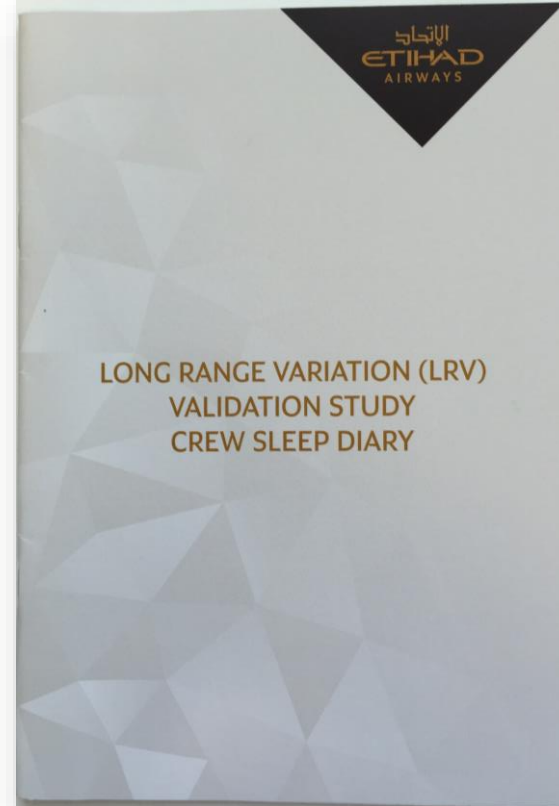
Policy Authorised by:

SVPO

Date:



FRMS PROMOTION



FATIGUE RISK MANAGEMENT SAFETY ACTION GROUP (FRMSAG)

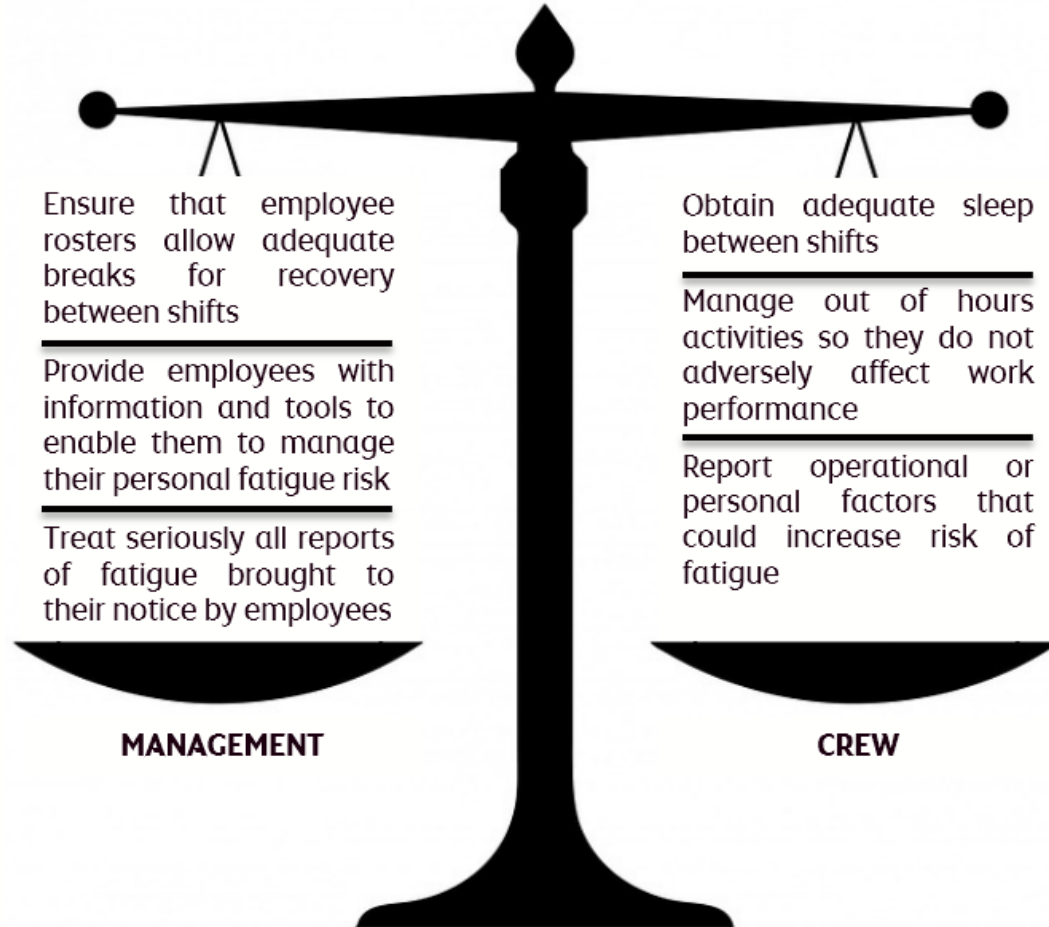
- Regulatory Affairs & Operations Compliance
(Chairperson)
- Fatigue Risk Operations
- Crew Resources
- Crew Planning
- Flight Operations Senior Management
- Fleet Management
- Crew Training
- Corporate Safety and Quality
- Aviation Medical Examiners

AGENDA

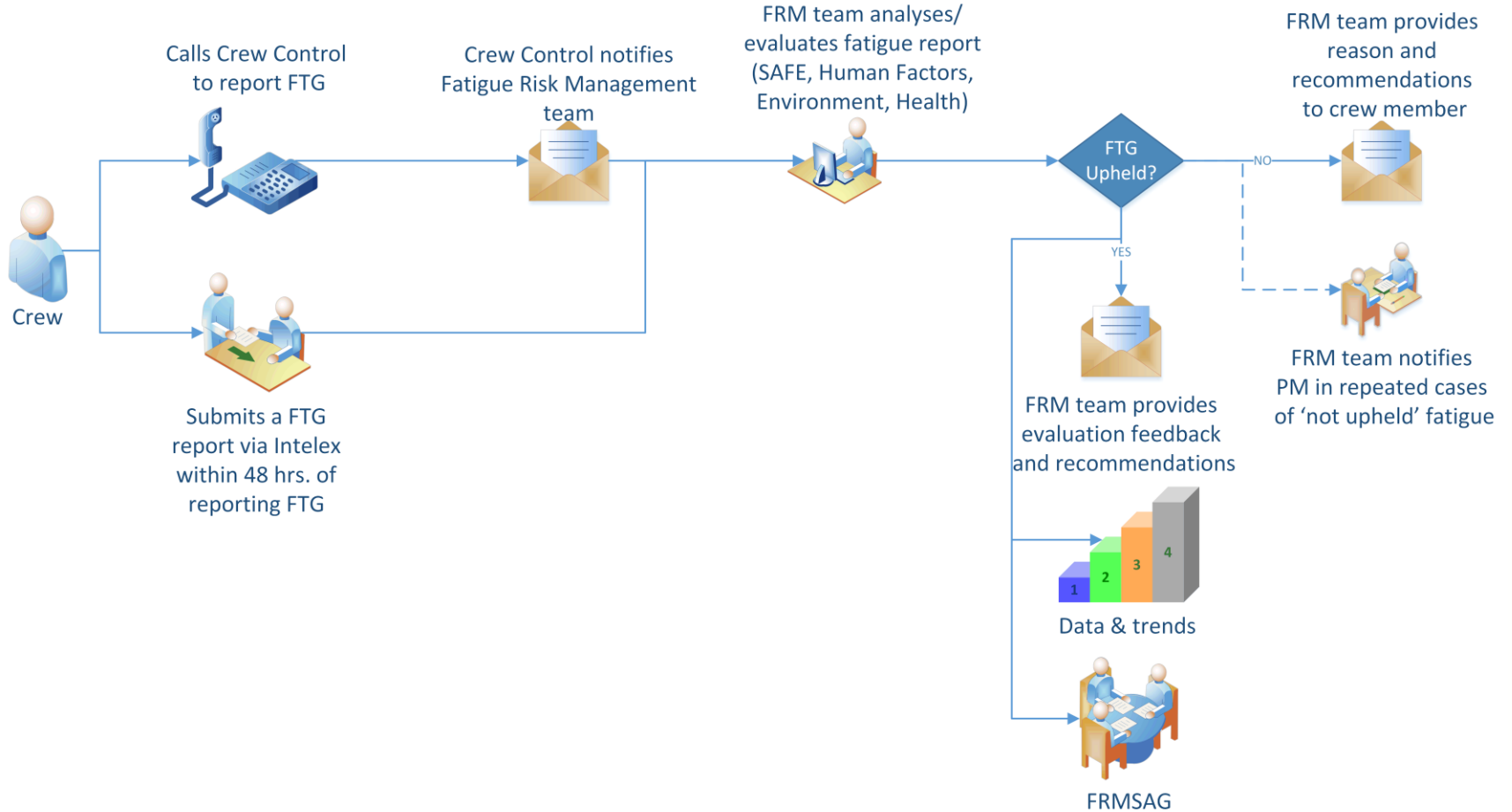
- ✓ Discuss and analyse fatigue related issues
- ✓ Roster analysis and tactical changes
- ✓ Hazards and risks to operations
- ✓ Risk assessments for new and existing routes
- ✓ Risk mitigation measures
- ✓ Monitor agreed SPIs
- ✓ Ensure FRMS policy implementation
- ✓ Ensure regulatory compliance and guidance
- ✓ Recommendations to senior management

CONFIDENCE AND TRUST

SHARED RESPONSIBILITY



REPORTING PROCESS



PROCESSES & OUTPUTS

SAFE Programme Standard User Procedures

1. Etihad FRMS Samn Perelli Scale SAFE Limits for Pilots

Samn- Perelli Scale Limits - Pilots	
Planning Stage	5.2 (normal Planning Limit)
Day of Operation	Exceptionally, Absolute Limit 5.6 (see Note 1 Below)
Cumulative Total – block of consecutive flights or 3 night flights	15.2, Exceptionally 15.6 (see Note 2 below)

Note 1 : For pilots, normal planning to 5.2. When making tactical changes, going to 5.4 for a single work block is acceptable. An absolute limit of 5.6 applies to a single work block.

Note 2: Exceptionally, a cumulative total of 15.6 for a block of consecutive flights, or 3 night flights. Requires the approval of either SVPO/VPFO and agreement of the operating pilot.

2. Etihad FRMS Samn Perelli Scale SAFE Limits for Cabin Crew

Samn- Perelli Scale Guideline Limits - Cabin Crew	
Planning Stage	5.8
Day of Operation	5.9

RISK MITIGATION MEASURES - LRV

- LRV operations using 2 Captains and 2 First Officers (GCAA approved - first operation in UAE)
- Every LRV flight is monitored for fatigue and discretion - flights entering discretion are reported to GCAA monthly. In 2015, 2% LRV flights entered discretion of which only 0.19% reached Absolute Maximum Discretion (well below GCAA limits)
- Detailed Fatigue Evaluation form completed for every duty period exceeding 20 hours - utilised in further LRV studies

RISK MITIGATION MEASURES - PLANNING

- Night duties limited to 3 in 7 days (regulation permits 5)
- EAST-WEST 48 hour separation rule
- 15 hour HUB rest between night duties
- 27 hour rest after long-haul night duty
- Planning rules to prevent alternating Night-Day roster patterns
- Mandatory extra days off for cabin crew operating NRT-AUH following feedback
- Progressive changeover of medium-haul night flights from turnarounds to layovers

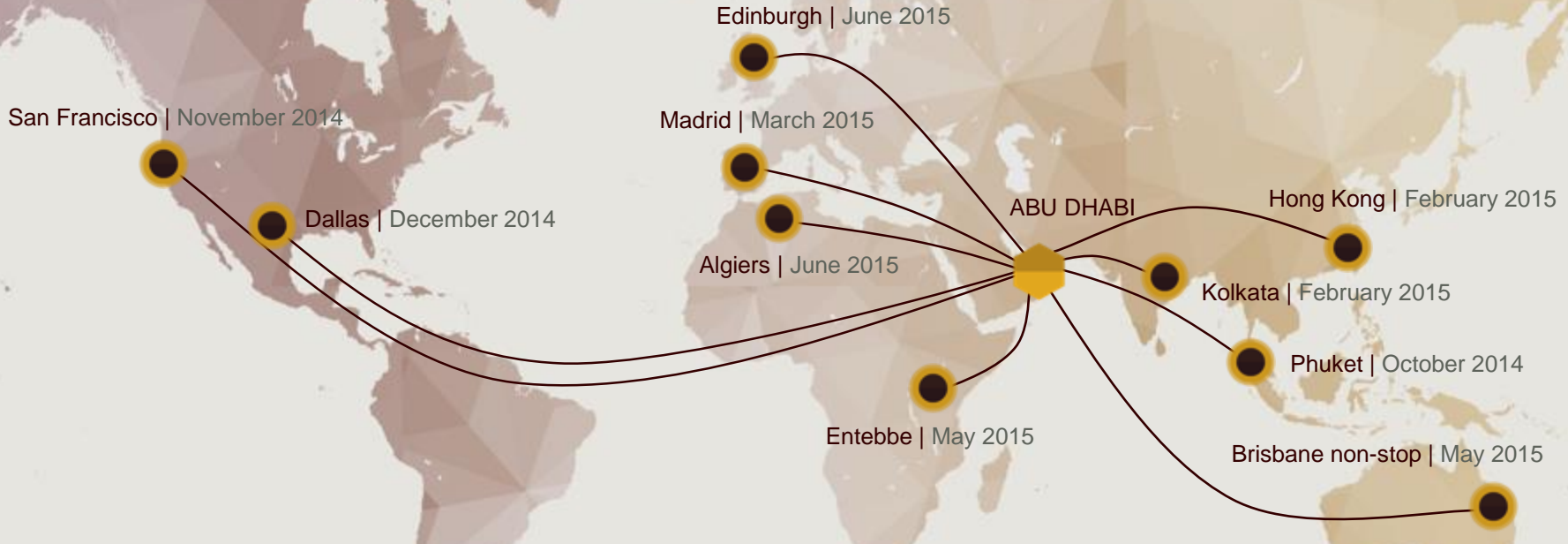
THE WAY FORWARD

ONGOING DEVELOPMENT & IMPROVEMENT

- Working closely with GCAA to create, maintain and further develop a robust LRV policy document, incorporating superior FRM measures compared to current ULR rules within CAR-OPS
- Multi-stakeholder participation in a monthly FRMSAG meeting, chaired by HRAOC, to monitor agreed SPIs, analyse fatigue-related issues, identify hazards and risks. In addition, to ensure effectiveness of FRMS policy implementation, regulatory compliance and make recommendations to senior management
- Dedicated, trained Regulatory Affairs and Operations Compliance team to supervise and manage FRMS
- Crew Resources staff FRMS trained and tested annually by Controller FTL, Quality and Standard

ONGOING DEVELOPMENT & IMPROVEMENT

- SAFE integration in AIMS (Q4 2016)
- Ongoing safety data analysis of potential relationship between operational events and crew alertness levels
- Predictive analytical approach by studying planned and actual rosters. This process is to identify potential fatigue risk/hazards, implement effective risk mitigation controls/actions
- Risk assessments on flight pairings in conjunction with SAFE to formulate better scheduling practices
- Implementation of 2 CP and 1 FO complement on selected long-haul flights to allow appropriate rest for flight crew



THANK YOU