



# FRM within FTL using FRMS

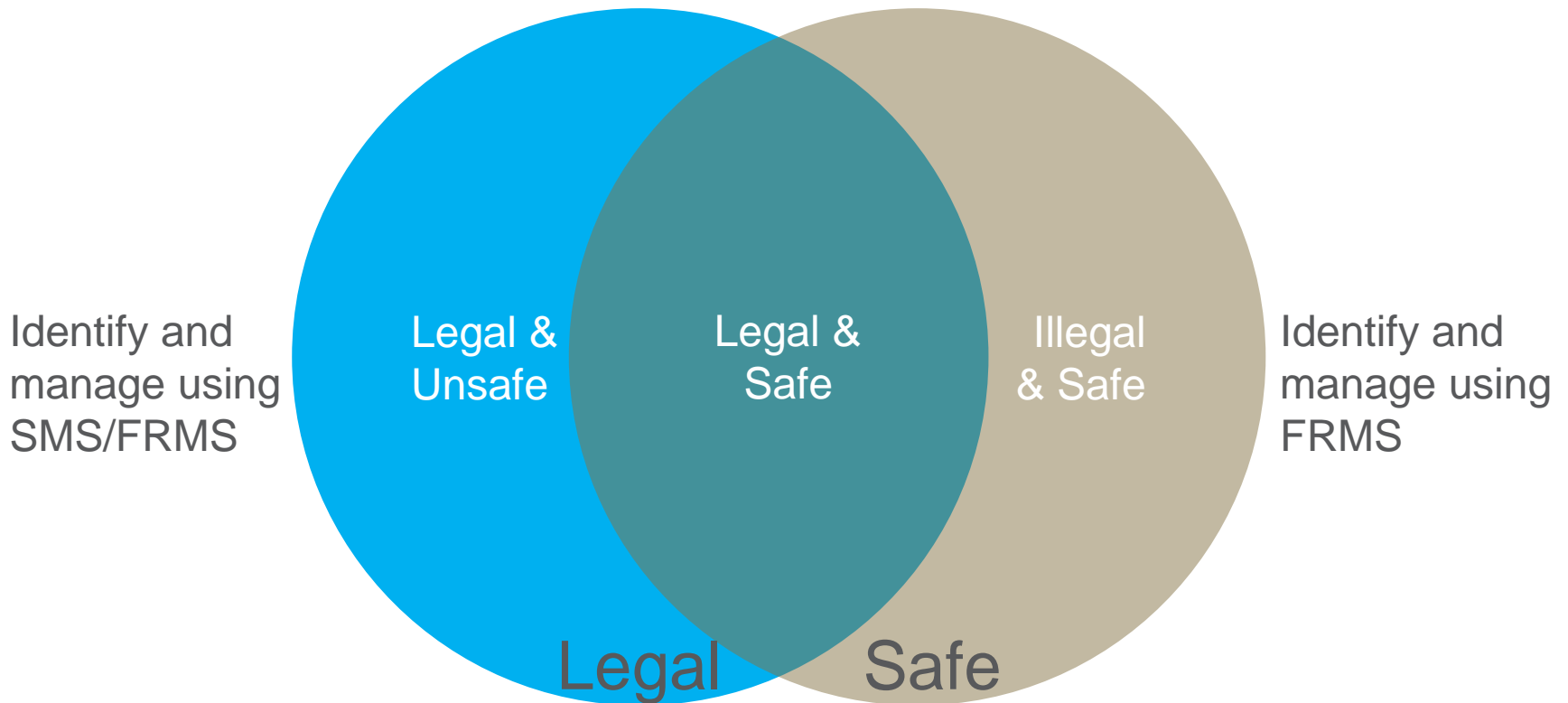
Nina McGrath, Group Safety Manager – FRMS

International FRMS Forum

Guangzhou

8<sup>th</sup> November, 2018

# FTLs and Safety



# Why does an Operator Implement FRMS?



Typically an airline begins its FRMS journey in response to changes in legislation.



# The Financial Case for FRMS



- FRMS is necessary in order to conduct a specific operation or for a variation to be approved.
- The financial benefit associated with allowing these operations can be quantified.
- This financial benefit can be used to balance the costs associated with implementing and maintaining an FRMS.



# CX & KA FRMS History & Features



## CX FRMS

Established 2010

Flight Crew only

## KA FRMS

Established 2012

Flight Crew only

- Not required by law in HK
- FRMS complements FTLs
- Fully integrated into corporate SMS

# Convincing Management



## Risk Management

- FRMS is industry best practice in managing fatigue-related safety risk in an operation.
- Without FRMS an operator may be unaware of the fatigue-related safety risks to which it is exposed.



# Convincing Management



## Insurance

- The cost of insurance is directly related to the risk the insurer is accepting.
- An operator that can demonstrate that they using industry best practice to manage fatigue-related safety risk in their operation may enjoy benefits.



# Convincing Management



## Employee Attraction, Engagement & Retention

- Cost of recruitment and training.
- Lifestyle on FRMS roster can attract crew.
- Demonstrate FRMS commitment to engage crew.



# Convincing Management



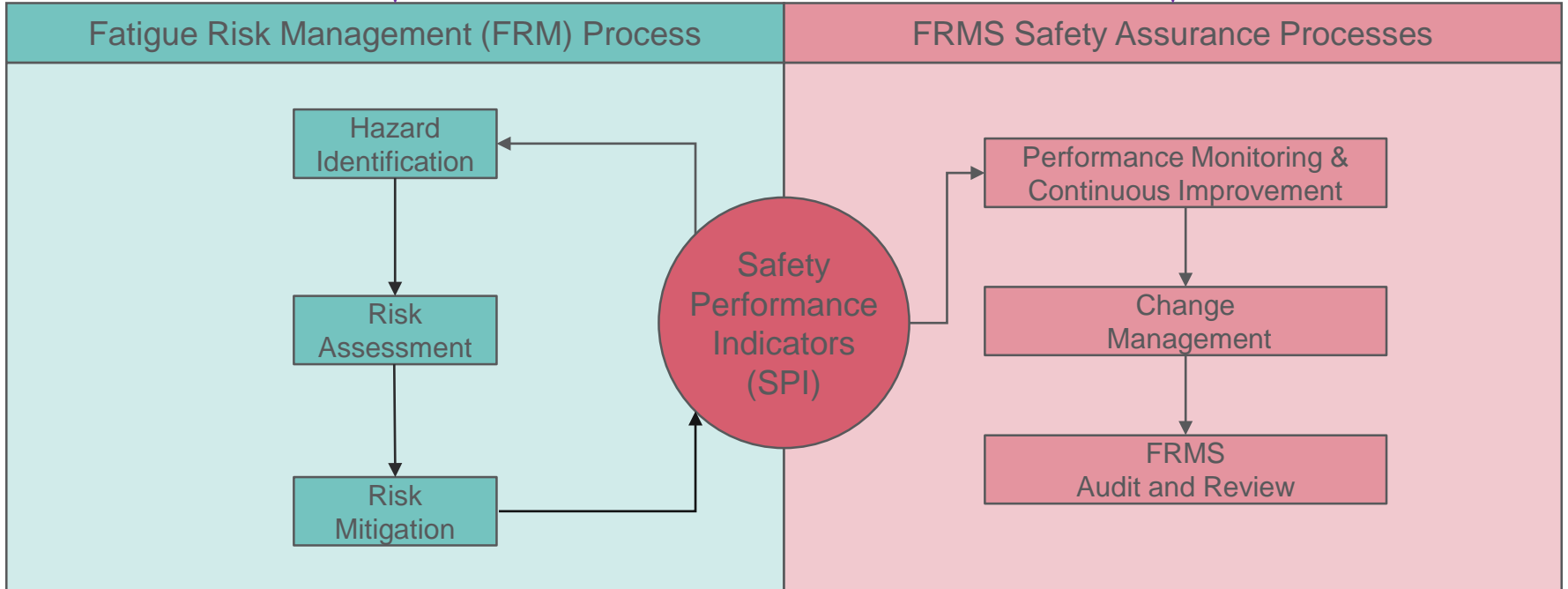
## Employee Attraction, Engagement & Retention

- Crew directly influence operating costs.
- Difficult to quantify the extent to which FRMS contributes to attraction, engagement and retention of crew.



# FRMS Policy

## Effective Reporting System

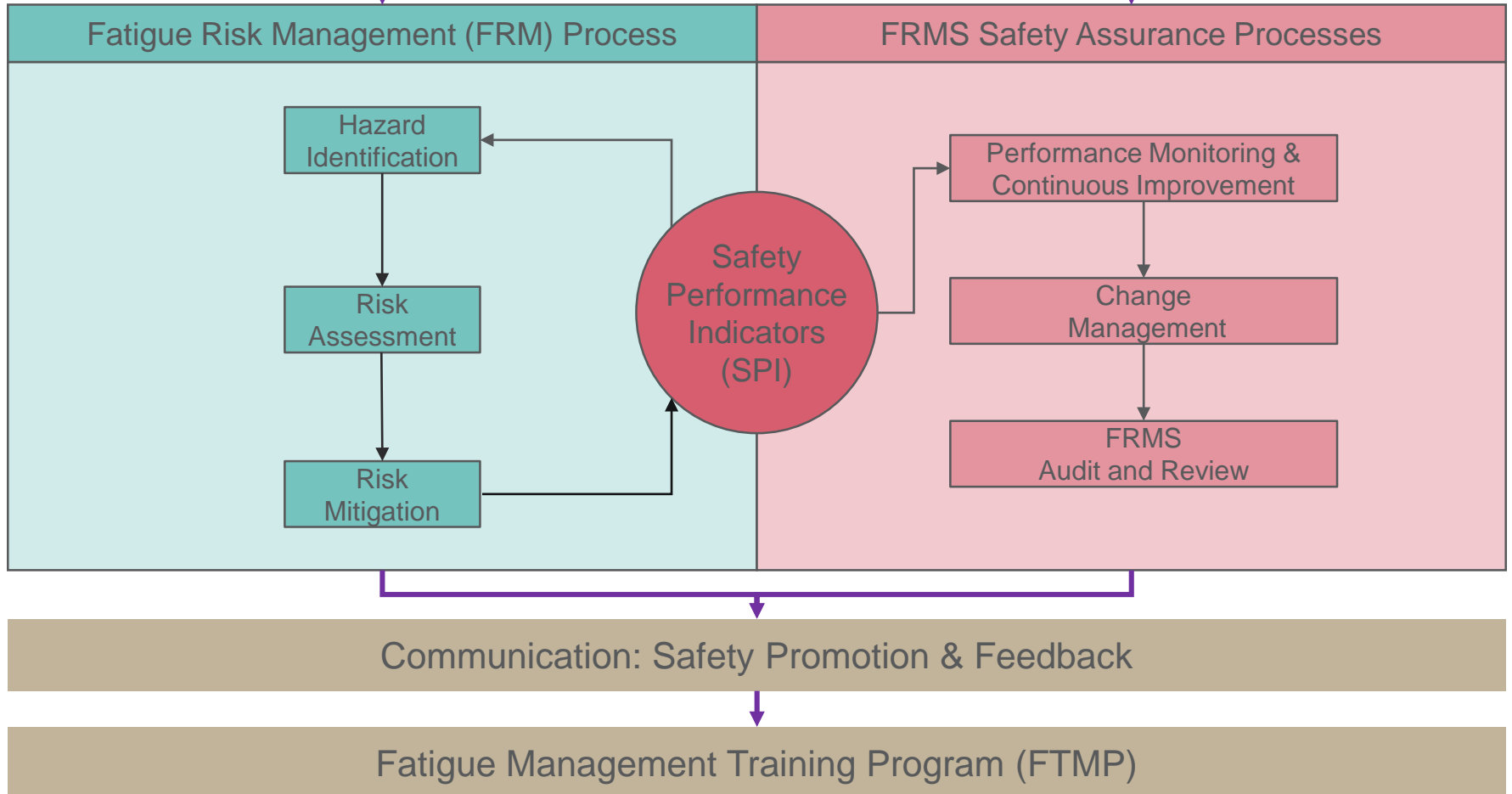


## Communication: Safety Promotion & Feedback

## Fatigue Management Training Program (FTMP)

# FRMS Policy

## Effective Reporting System



# Resources, FRMSC & FRMS Policy



## Cathay

FRMS Team

FRMS Committee

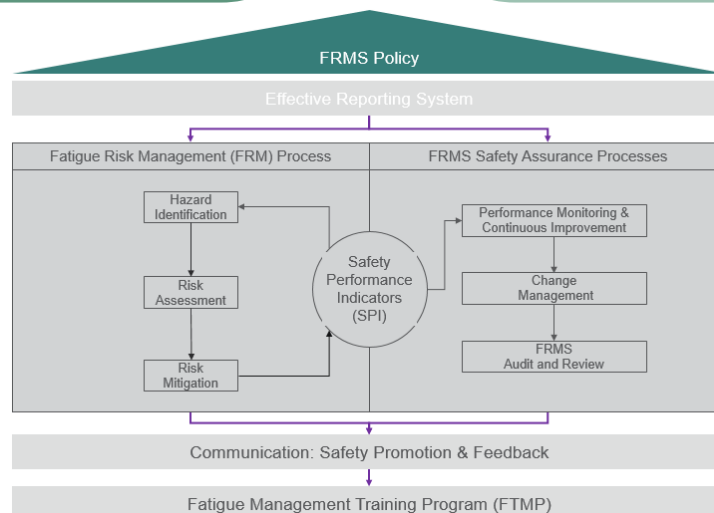
- Develop policy
- Manage fatigue-related safety risks

## Alternative

SMS Manager

FSAG

- Develop policy
- Manage fatigue-related safety risks



# Reporting System

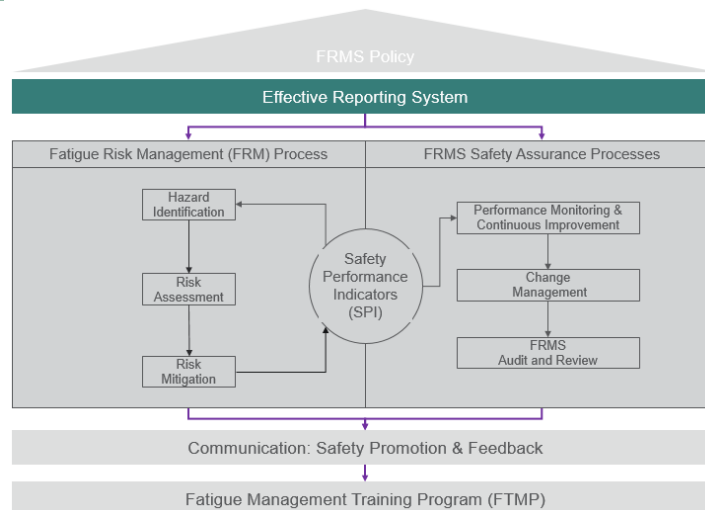


## Cathay

Specific tailored  
Fatigue Report forms.

## Alternative

Crew report fatigue via  
existing safety reporting  
forms.



# Fatigue Management Training Program

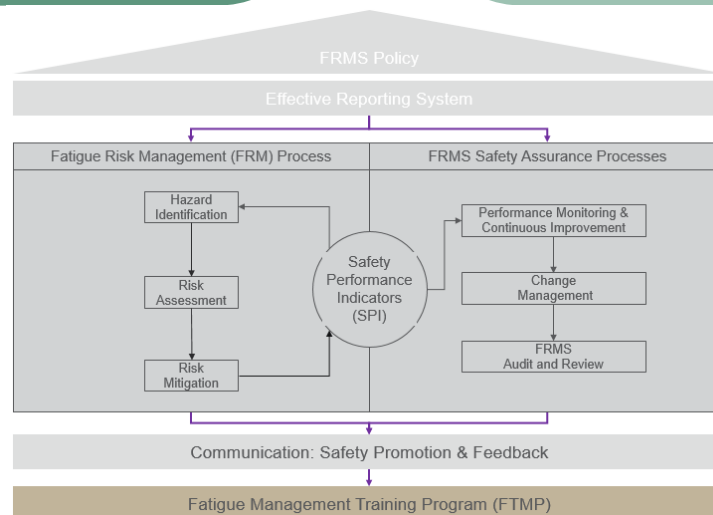


## Cathay

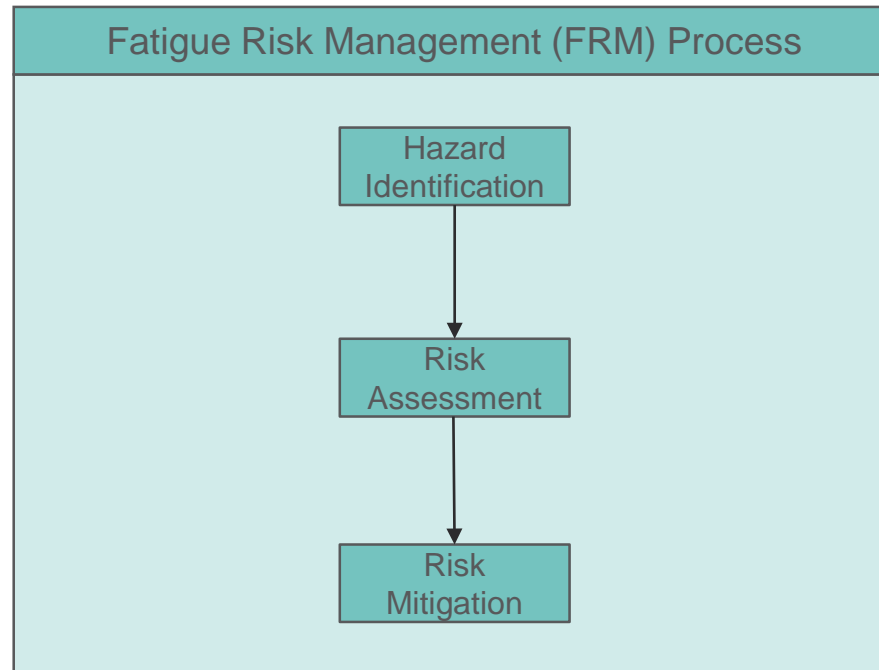
All flight crew complete sleep, fatigue and FRMS training program.

## Alternative

Add reporting to existing fatigue content in CRM. FRMS training program follows later.



# Step 5: FRM Process

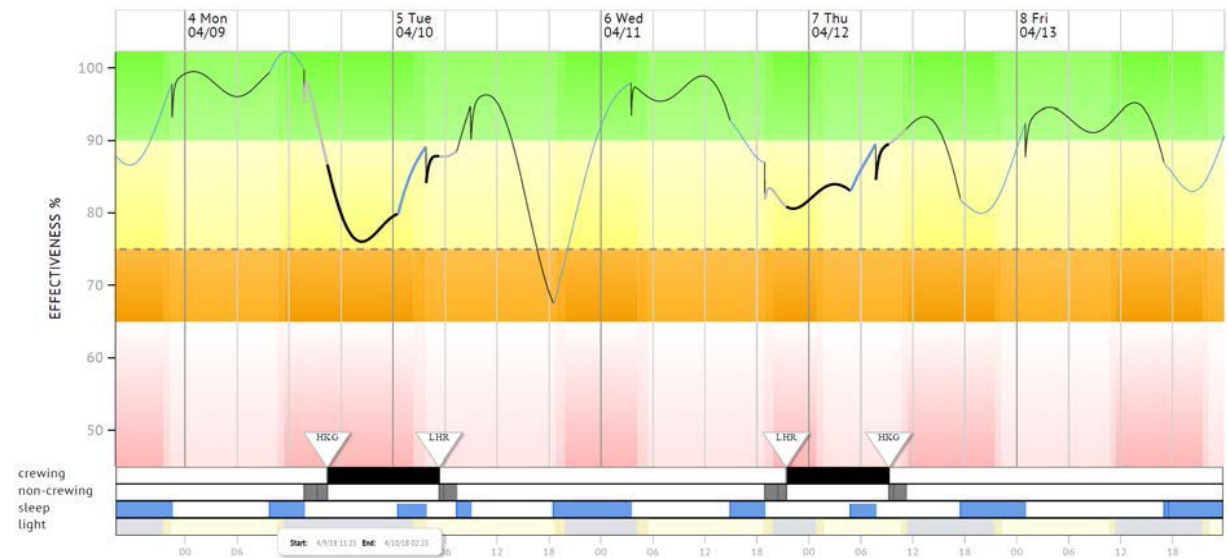


# FRM Process



## Hazard Identification

1. Reporting system
2. Biomathematical fatigue model's roster analysis outputs
  - Optional FRMS tool



# FRM processes



## Risk Assessment

| [] = Risk Component Value<br>< > = Risk Index Score |                                     | Severity                       |                           |                              |                            |                                   |
|---|-------------------------------------|--------------------------------|---------------------------|------------------------------|----------------------------|-----------------------------------|
|   |                                     | Negligible<br>1 <sub>[1]</sub> | Minor<br>2 <sub>[3]</sub> | Moderate<br>3 <sub>[9]</sub> | Major<br>4 <sub>[27]</sub> | Catastrophic<br>5 <sub>[81]</sub> |
| Likelihood  | Almost certain<br>5 <sub>[16]</sub> | LOW<br><16>                    | MODERATE<br><48>          | HIGH<br><144>                | ULTRA<br><432>             | ULTRA<br><1296>                   |
|   | Likely<br>4 <sub>[8]</sub>          | LOW<br><8>                     | MODERATE<br><24>          | HIGH<br><72>                 | ULTRA<br><216>             | ULTRA<br><648>                    |
|   | Possible<br>3 <sub>[4]</sub>        | LOW<br><4>                     | LOW<br><12>               | MODERATE<br><36>             | HIGH<br><108>              | ULTRA<br><348>                    |
|   | Unlikely<br>2 <sub>[2]</sub>        | INSIGNIFICANT<br><2>           | LOW<br><6>                | LOW<br><18>                  | MODERATE<br><54>           | HIGH<br><162>                     |
|   | Rare<br>1 <sub>[1]</sub>            | INSIGNIFICANT<br><1>           | INSIGNIFICANT<br><3>      | LOW<br><9>                   | MODERATE<br><27>           | HIGH<br><81>                      |



## Risk Mitigation

- Mitigations tailored to the risk they address.
- May be multiple options.
- Important to establish if the mitigation has been effective and check for unintended consequences using SPIs.





## Safety Performance Indicators (SPIs)

- Track the performance of your FRMS via SPIs.
- SPIs should be tailored to each operator.
- Refer to the [IATA FM TG paper](#) 'Fatigue SPIs: A Key Component of Proactive Fatigue Hazard Identification' for more information.



# Safety Assurance



- **Change Management** – Standing agenda item for the FRMSC meeting.
- **Internal Audit** – Compliance department's regularly scheduled internal audits.
- **External Audit** – Via IOSA (IATA member airlines) or an external party.
- **Review** – Is the FRMS still fit for purpose?



# Communication: Safety Promotion & Feedback

- Communicate FRMSC results to crew.
- Demonstrates FRMS effectiveness and encourages further crew fatigue reporting.

**Cathay**  
FRMS Bulletin  
Email, phone and open door policy



**FRMS Bulletin** An update on FRMS activities  
Group Safety and Operational Risk Management Department Trust Share Learn

May 2018 **FRMS Bulletin**

Inside this issue:

- Welcome
- ASR-F Statistics
- Highlights
- Fatigue Risk Mitigations
- Sleep Strategies for RES Duties
- FRMS for Flight Crew
- Apps CX FOP Tools & Toolkit
- FRMS Resources
- The FRMS Committee (FRMSC)
- The FRMS Team

**Apps – CX FOP Tools a**  
Following feedback from flight crew, th FDP is provided to crew to assist in c:

**CX FOP Tools**  
Crew can now comput CX App Store.

**FRMS Resources – ASR-F & Training Program**  
The ASR-F is available via the AGD Mobile eReports App on iPad or the AGD Web Portal: <https://agd.cathayair.com> (intranet) or [gsmo.cathayair.com](http://gsmo.cathayair.com) (external)  
AGD Quick Reference Guides are available at the following locations:
 

- AerosDoc app > EFB Manuals
- IntraCX > Flight Crew Team > Safety > AGD Quick Reference Guides

 All flight crew are enrolled in the Fatigue Risk Management System For Flight Crew (LP-GSORM-FRMS) program via Learners' World.
 

- The program consists of four modules: M1 Recognising Fatigue, M2 FRMS Policy, M3 Factors Affecting Sleep and M4 Flight Crew Rest Period Guidelines.
- After program completion, modules are available in "Learning History" for reference.

 The Learners' World program A-Days Training for Flight Crew (LP-GSORM-ADAYS) is available for US and Australian-based crew who wish to apply for A-days.

**The FRMS Committee (FRMSC)**  
The FRMS Committee is chaired by General Manager Group Safety and Operational Risk Department (GSORM) Richard Howell and made up of representatives from Flight Operations (Aircrew, Flying & Operations), Flight Crew (HKAOA, AAOA, AOAD, AOA&E & USAOA) Corporate Medical Department (CMD) and GSORM. The FRMSC meets bi-monthly.

The current representatives are:

|                 |   |               |
|-----------------|---|---------------|
| Richard Howell  | General Manager GSORM                   | GSORM - Chair |
| Andeeon Siu     | Head of Group Safety and Security       | GSORM         |
| Nina McGrath    | Group Safety Manager – FRMS             | GSORM         |
| Zora Ho         | Asst. Manager Group Safety – FRMS & SMS | GSORM         |
| CN Brad Pieters | Confidential Reporting Program Manager  | GSORM         |
| Dr. Horace Lee  | Head of Aviation Medicine               | CMD           |
| Dominic Perret  | General Manager Aircrew                 | FOP           |
| Dennis Leung    | Head of Crew Resources                  | FOP           |
| Ricky Hul       | Rostering Manager                       | FOP           |
| CN Mark Hoey    | General Manager Operations              | FOP           |
| CN Chris Kempis | General Manager Flying                  | FOP           |
| CN Peter Hudson | Flight Operations Risk Manager          | FOP           |

**FRMS Flight Crew Representatives:**

|                      |  |
|----------------------|--|
| CN Glen Sycamore     | <a href="mailto:CRWGLG@cathayair.com">CRWGLG@cathayair.com</a>   |
| CN Anthony Fesche    | <a href="mailto:CRWAFJ@cathayair.com">CRWAFJ@cathayair.com</a>   |
| FO Jonathan Wiltsher | <a href="mailto:CRWJGW@cathayair.com">CRWJGW@cathayair.com</a>   |
| CN Ben Hayes         | <a href="mailto:CRWBHA@cathayair.com">CRWBHA@cathayair.com</a>   |
| FO Carl Gultford     | <a href="mailto:CRWCEG@cathayair.com">CRWCEG@cathayair.com</a>   |
| CN Stu Allan         | <a href="mailto:CRWASD@cathayair.com">CRWASD@cathayair.com</a>   |
| CN Darren Matun      | <a href="mailto:CRWDAAM@cathayair.com">CRWDAAM@cathayair.com</a> |
| FO Robert Baker      | <a href="mailto:CRWRBB@cathayair.com">CRWRBB@cathayair.com</a>   |
| FO Steve Jakob       | <a href="mailto:CRWSFJ@cathayair.com">CRWSFJ@cathayair.com</a>   |

**FRMS Team**  
The Team: Nina McGrath, Group Safety Manager – FRMS & Zora Ho, Asst Manager Group Safety – FRMS & SMS  
Email: [GSRMFRMS@cathayair.com](mailto:GSRMFRMS@cathayair.com)  
Find us at: GSORM, 1/F Central Tower, Cathay City

**AGD eReports**  
The ASR-F reporting rate is above the rolling 12 month average

**CX Toolkit**  
Another useful app to rest period timings at

**AGD eReports**  
AGD eReports

**Learners' World**  
Learners' World

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