



Facilitating FRM in the Airline Industry

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The Role of the National Aviation Authority

Operator Responsibilities under EASA Regulations

FRM Implementation

First Things First



First Things First



Role of the NAA

- Ensure that the operator is managing their fatigue related risks to an acceptable level of safety
- Recognise that an FRM needs to be unique to each operator
- Recognise that operational maturity is required for a successful FRM implementation

NAA Needs for an FRM

- A platform of robust prescriptive flight and duty limitation regulations.
- Time and resources to develop sufficient knowledge related to fatigue management processes.
- Access to scientists.
- Experience in oversight of performance-based regulations.
- Clear approval and oversight processes.

Challenges for the NAA

- Providing a regulatory environment that supports effective safety reporting
- Performance-based regulations require different regulatory skill sets
- Assessing the balance – flexibility with tolerable risk.
- Provision of consistent and comprehensive guidance to operators
- Consistency in regulatory decisions

Stepping stones to success



European Regulation Subpart FTL

- **Operator Responsibilities ORO.FTL.110**
 - 10 Specific areas that require the operator to demonstrate the fatigue management performance of crew members rosters
- There are also a number of specific procedures and processes that are required to be part of the OM and will require approval with the prescriptive FTL requirements
- EASA's explanatory material states "The use of FRM is encouraged and FRM might also be a useful tool to demonstrate compliance with the responsibilities established in ORO.FTL.110,"

Operator Responsibilities

ORO.FTL.110

An Operator shall:

- ORO.FTL.110 (b) ensure that flight duty periods are planned in a way that enables crew members to remain sufficiently free from fatigue so that they can operate to a satisfactory level of safety under all circumstances;
- ORO.FTL.110 (d) take into account the relationship between the frequency and the pattern of flight duty periods and rest periods and give consideration to the cumulative effects of working long duty hours combined with minimum rest periods;

Operator Responsibilities

ORO.FTL.110 (continued)

An Operator shall:

- ORO.FTL.110 (e) allocate duty patterns which avoid practices that cause a serious disruption of an established sleep/work pattern, such as alternating day/night duties;
- ORO.FTL.110 (g) provide rest periods of sufficient time to enable crew members to overcome the effects of the previous duties and to be rested by the start of the following flight duty period;

Managing Night Duties

- Additional requirements for the management of night duties where they exceed 10 hours Flight Duty Period
- CS FTL.1.205 Flight Duty Period (a) (2) states “appropriate fatigue risk management in relation to the surrounding duties and rest periods”
- GM1 CS FTL.1.205(a)(2) provides further detailed guidance of what is required over and above ORO.FTL.110 responsibilities
- Full compliance with ORO.FTL.120 requirements is NOT required
- Demonstration of these additional requirements do NOT provide the operator with FRM privileges

Moving to FRM

- The operator needs to be able to demonstrate fully that they are meeting the Operator Responsibilities **BEFORE** developing an FRM



Fatigue Risk Management

- FRM is something that grows from a mature and successful SMS
- FRM requires a separate approval process which will include the need for a safety case
- FRM process must be fully demonstrated for operators to use the standard variations

FRM Requirements

- A culture change that supports different attitudes and behaviours
- *Managing risks rather than eliminating a problem*
- Shared responsibility
- Acknowledge/address complexity
- Complex issue requires multiple solutions
- Science-based/data-driven solutions
- Evolve/integrate new science/data
- Continuous evaluation/enhancement

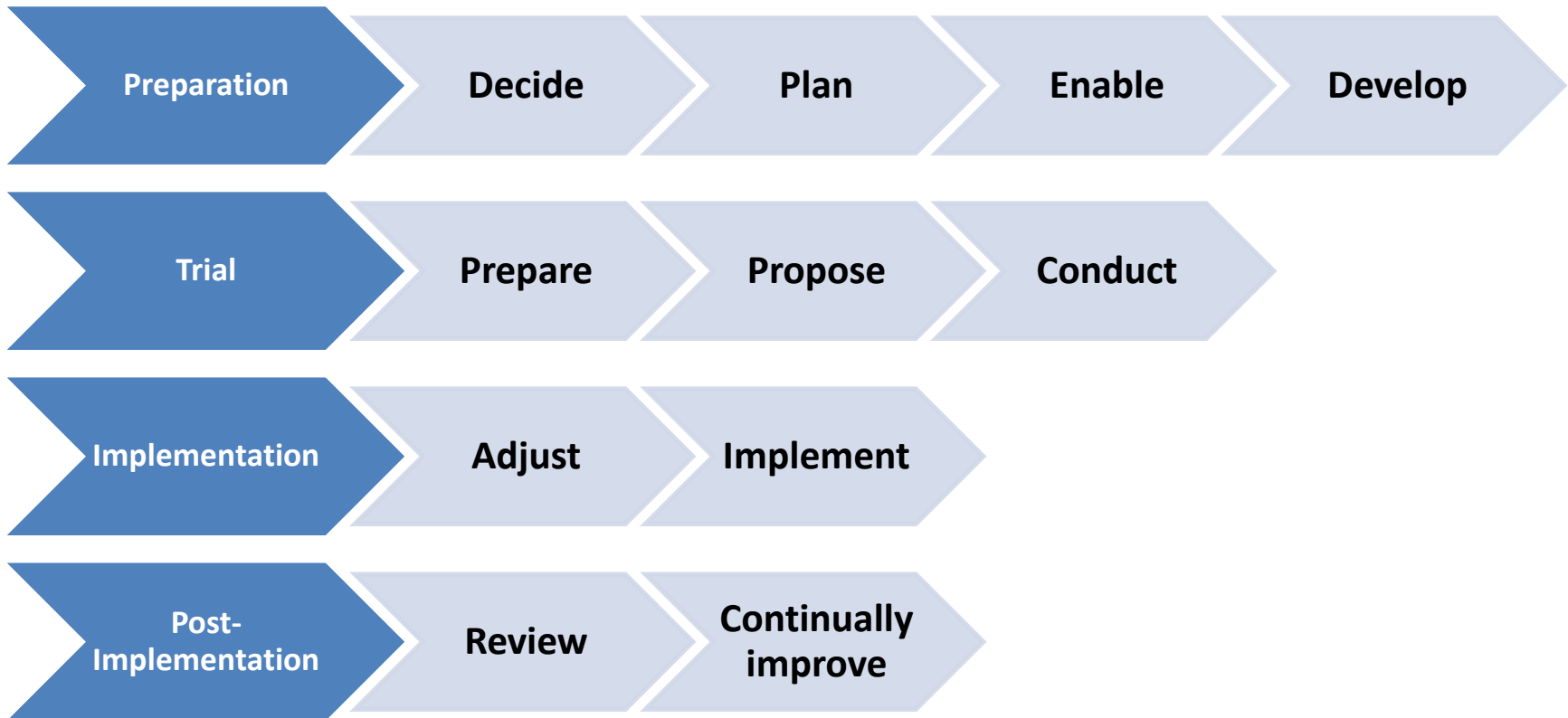
FRM under the Regulations

- Two specific areas of application within the regulations (*Two pilot unknown state of acclimatisation table and reduced rest*)
- FRM is route specific not generic
- Trip patterns for these areas of application need to be nominated, assessed and monitored
- Other areas where it will be required: Article 22 and Article 14 applications – route / trip / rule specific

FRM Implementation

- There is no 'off-the-shelf' version of an FRM that will suit all operators
- An FRM needs to be developed, understood and managed by people who have comprehensive experience in the complex operational environment to which it will apply
- A fully functioning FRM doesn't happen overnight
- Implementation is necessarily accomplished in phases

Operators FRM Implementation Process

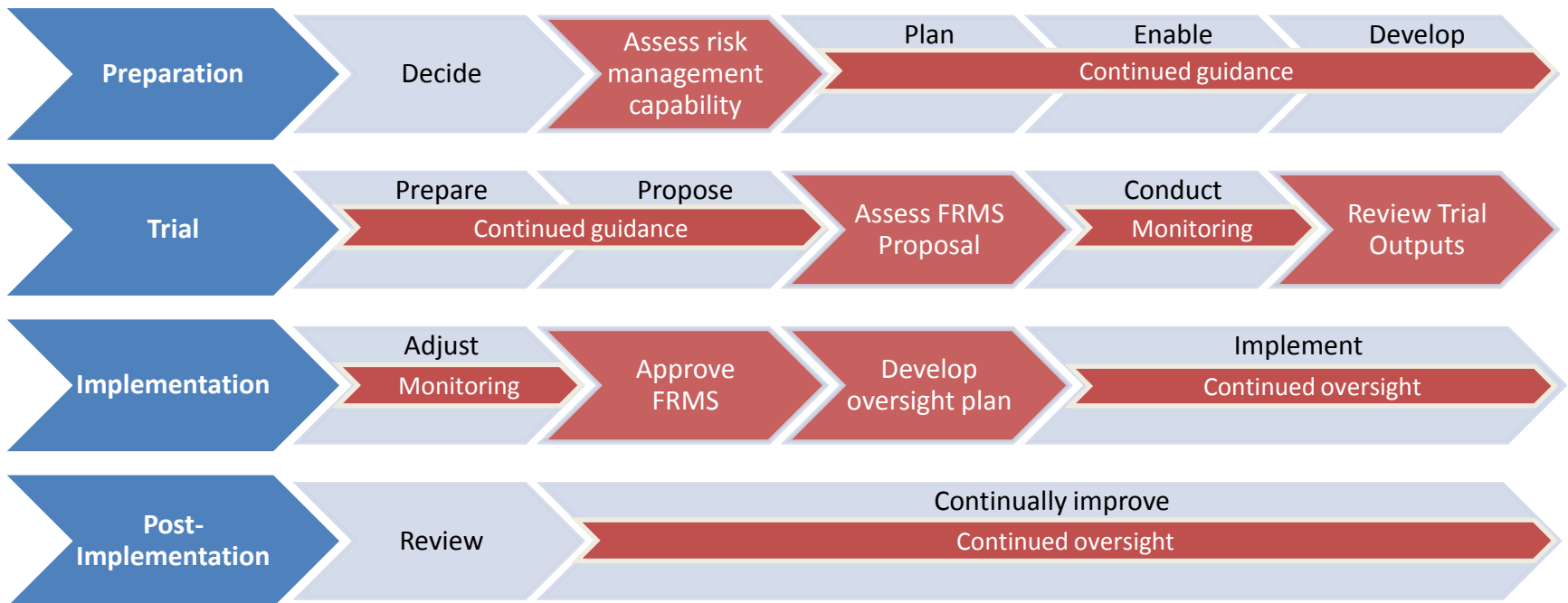


Question for the Operators

Are we ready for FRM?

- Operator must assess their ability to operate under an FRM
 - Commitment
 - Reporting Culture
 - Resources
 - Gap Analysis
- Must develop internal oversight

Authority FRM Approval Process



NAA Preparation

Risk Assessment of the Operator

- Notification of intent is received from an operator
- Confirm key personal in place
- Review resources to support development
- FRM checklist
- Review operator's implementation plan
- Conduct a risk assessment of the operator
- Acceptance of the operator's implementation plan

Operator develops a Trial proposal

- Roles for assuring the safety performance of the FRM are established
- Necessary authorities and communication channels are active
- FRM safety performance indicators have been developed and agreed on
- The procedures and process for periodic evaluation of the safety performance indicators are established
- Appropriate feedback is established between the FRM processes and the FRM safety assurance processes
- FRM documentation/training/communication processes are fully implemented

NAA Reviews Trial proposal

- Acceptance of initial FRM processes
 - Review data and information collected
 - Review collated reactive, proactive and predictive risk assessments
 - Review proposed risk mitigations
 - Evaluate the specific safety case
 - Agree to adjustments in the mitigations if necessary
 - Review initial training programme
 - Review fatigue safety promotion material and methods
 - Agree on a trial timeline

Evaluating the Safety Case

Key elements when reviewing the trial proposal

- **Six steps**
 - Assessment of nature, scope and impact of proposed change
 - Assess hazard and consequence identification
 - Evaluate the way the risk has been assessed
 - Assess the risk mitigations
 - **Assess the claims, arguments and evidence**
 - Assess assurance plan to manage residual risk



NAA Approval Process

Questions to ask

- Has the fatigue related risk been clearly identified?
- Who has ownership of the fatigue risk assessment?
- Is the language, fatigue risk matrix and process appropriate?
- Who is involved in the FRM?
- Does the fatigue risk assessment give you all the relevant information to make an assessment?
- Is the fatigue risk assessment objective?
- Have assumptions been made?
- Does the fatigue risk assessment have a conclusion?
- Do you understand it?
-Is it reasonable?

Reminder – ICAO states

- FRM processes **must** be functioning before approval can be given by State



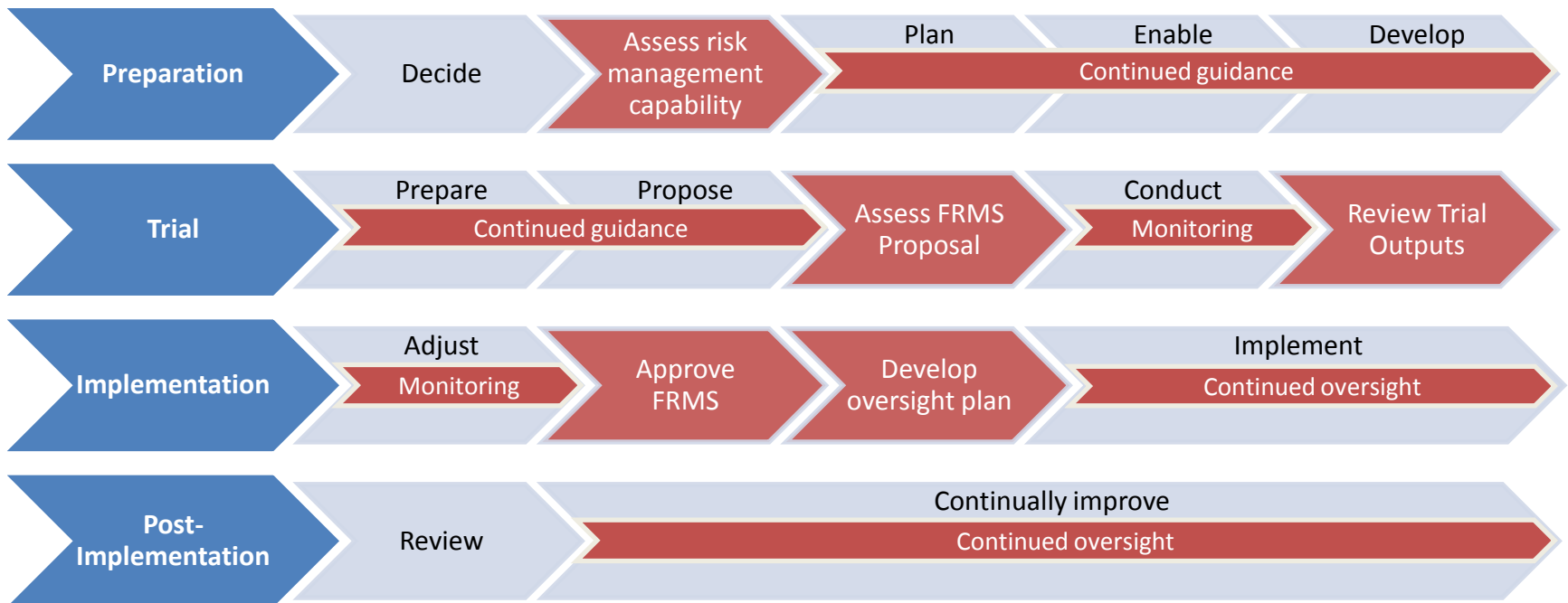
Operator Assurance Process

- Check that the FRM is working as intended and is effective
- That it is meeting its regulatory requirements
- Identify where changes in the operating environment have the potential to increase fatigue risk
- Identify areas for improvement in the management of the fatigue risks
- Verify the fatigue risk mitigations are in place and effective

NAA Final Approval Process

- Approval of FRM
 - Validation of the FRM assurance processes
 - Review performance against the agreed SPI's
 - Revise limits as required
 - Review change management as a result of assurance functions
 - Review continuous improvement processes
 - Review recurrent training and promotion processes
 - Review final documentation
 - Grant approval

FRM Approval Process

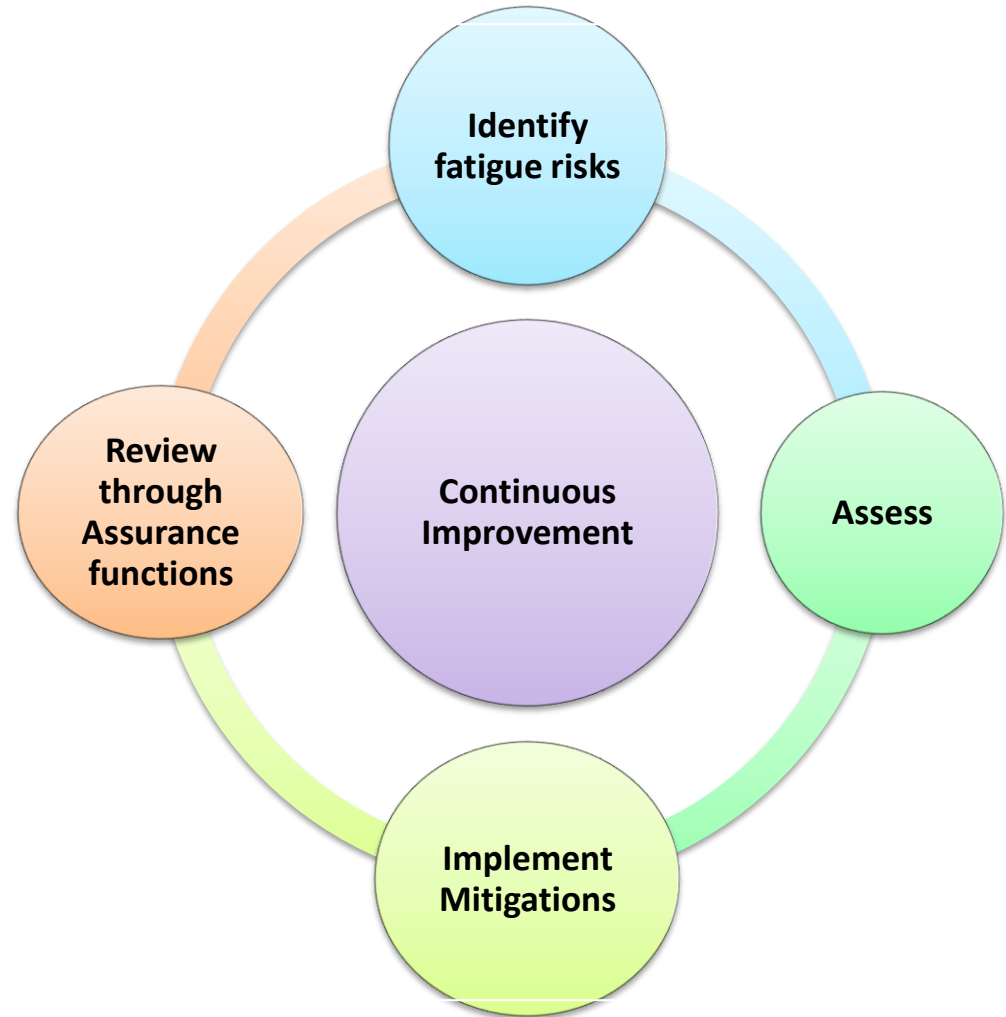


NAA Continuing Oversight Actions

- Gap analysis
- Do you do what you say you do?
- Show me
- Assessing fatigue safety performance indicators and targets
- Engaging at different levels
- Asking difficult questions
- Judging the responses and evidence
- Review fatigue safety assurance functions and actions
- **Assess overall buy-in and the assess the interfaces between inter-departmental**

FRM Continuing Oversight

- Assess agreed performance indicators and mitigation measures using information from the assurance process
- Work with the operator to adjust mitigations and/or limits, if required
- Set up continuous review audit programme



Summary

- Regulatory confidence is the first step
- Demonstrate management of fatigue risks within the operation under prescriptive regulations through the SMS
- FRM requires demonstrable operational maturity
- An FRM takes time to develop and mature, so work closely with all stakeholders – regulator / operator / crew

Thank you

FRM Implementation Process

