The FAA's Fatigue Risk Management Program for Air Navigation Service Providers

Presented to: **10th International Conference on MANAGING FATIGUE**

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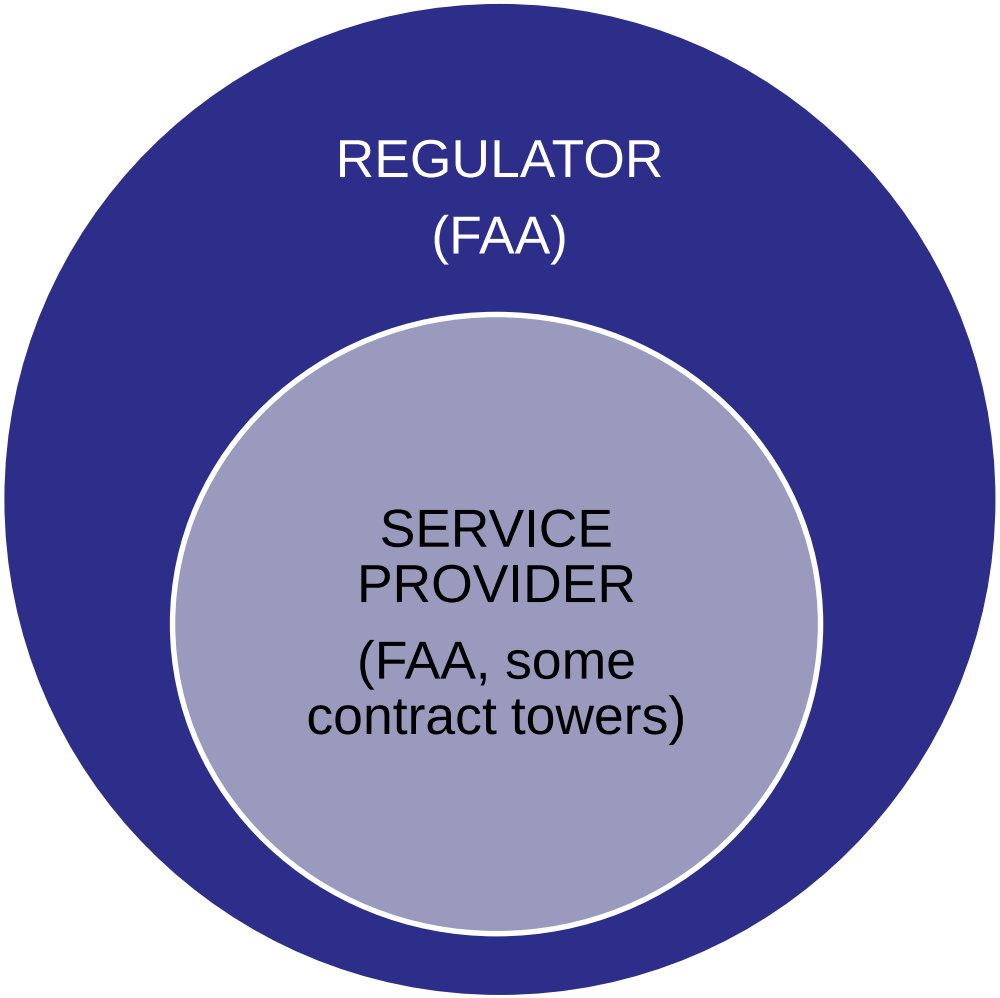
Safety & Technical Training
Air Traffic Organization
Federal Aviation Administration
Washington, DC

Date: **March 22, 2017**

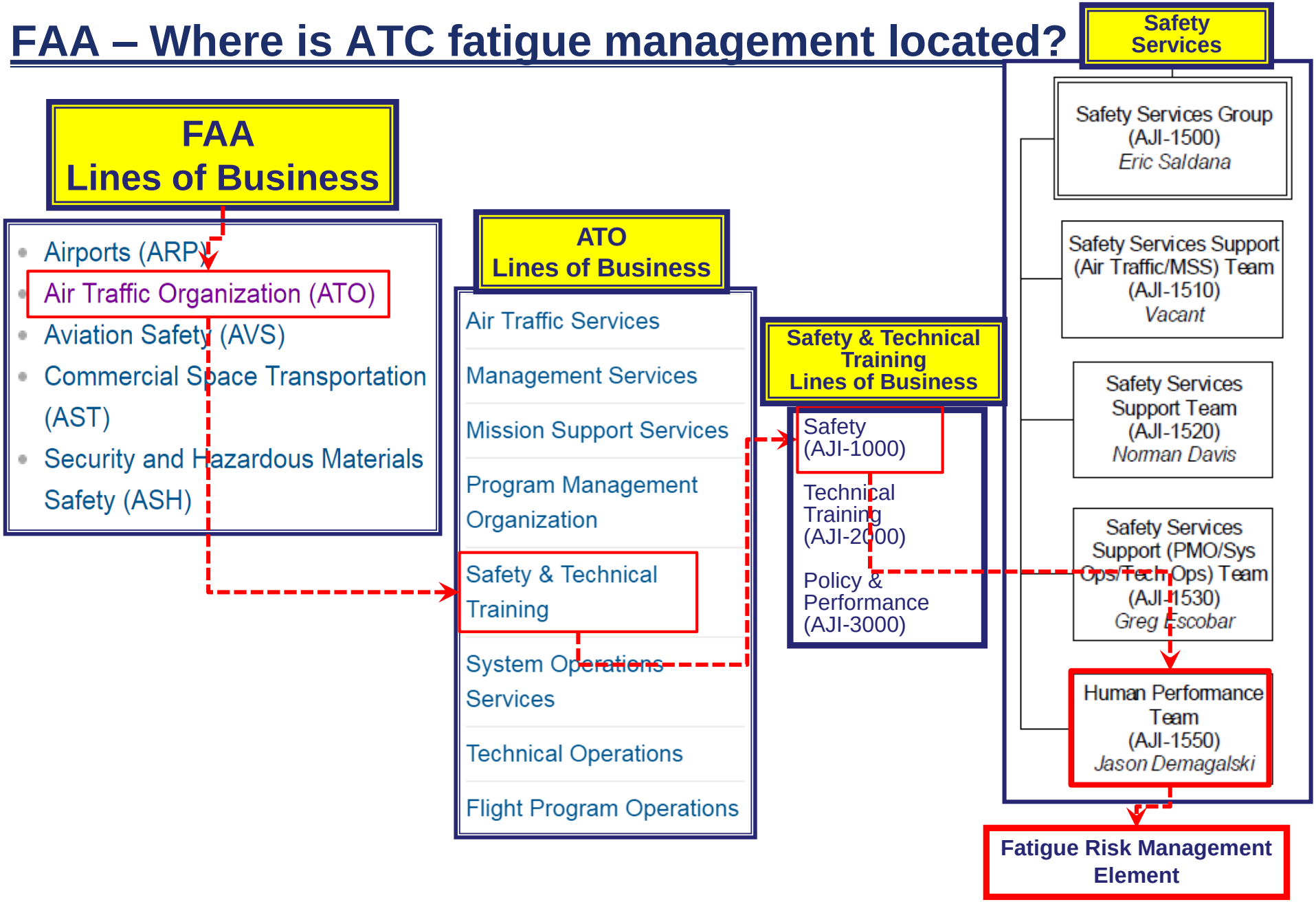
Federal Aviation Administration

Air Navigation Services in the United States



- **UNITED STATES**:
  - **Regulator** = FAA
  - **Service Provider** = FAA, contract (towers only)
- **SOME OTHER COUNTRIES**:
  - **Regulator** = Government civil aviation authority
  - **Provider** = Company

FAA – Where is ATC fatigue management located?



FAA ATO Definition of "Fatigue"

Identical to ICAO* definition

*International Civil Aviation Organization, website: www.icao.int/

6. Definitions. The following definitions apply in this order.

a. **Fatigue.** A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian (from Latin *circa* meaning "about" and *dies* meaning "day") phase, or workload (mental and/or physical activity) that can impair an individual's alertness and ability to perform safety-related duties.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

ORDER JO 1030.7A

8/31/2012

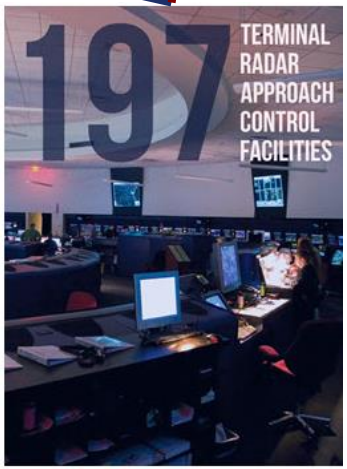
SUBJ: Air Traffic Organization Fatigue Risk Management

Fatigue Risk Management (FRM) is a vital component of the Federal Aviation Administration's (FAA) Safety Management System (SMS) and establishes the policy to define, assess, and manage fatigue-related safety risk within the National Airspace System (NAS).

Joseph Teixeira
Vice President
ATO Safety and Technical Training

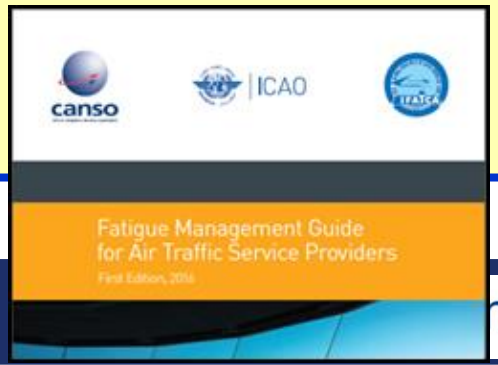
August 31, 2012

Who is Covered by the Order?



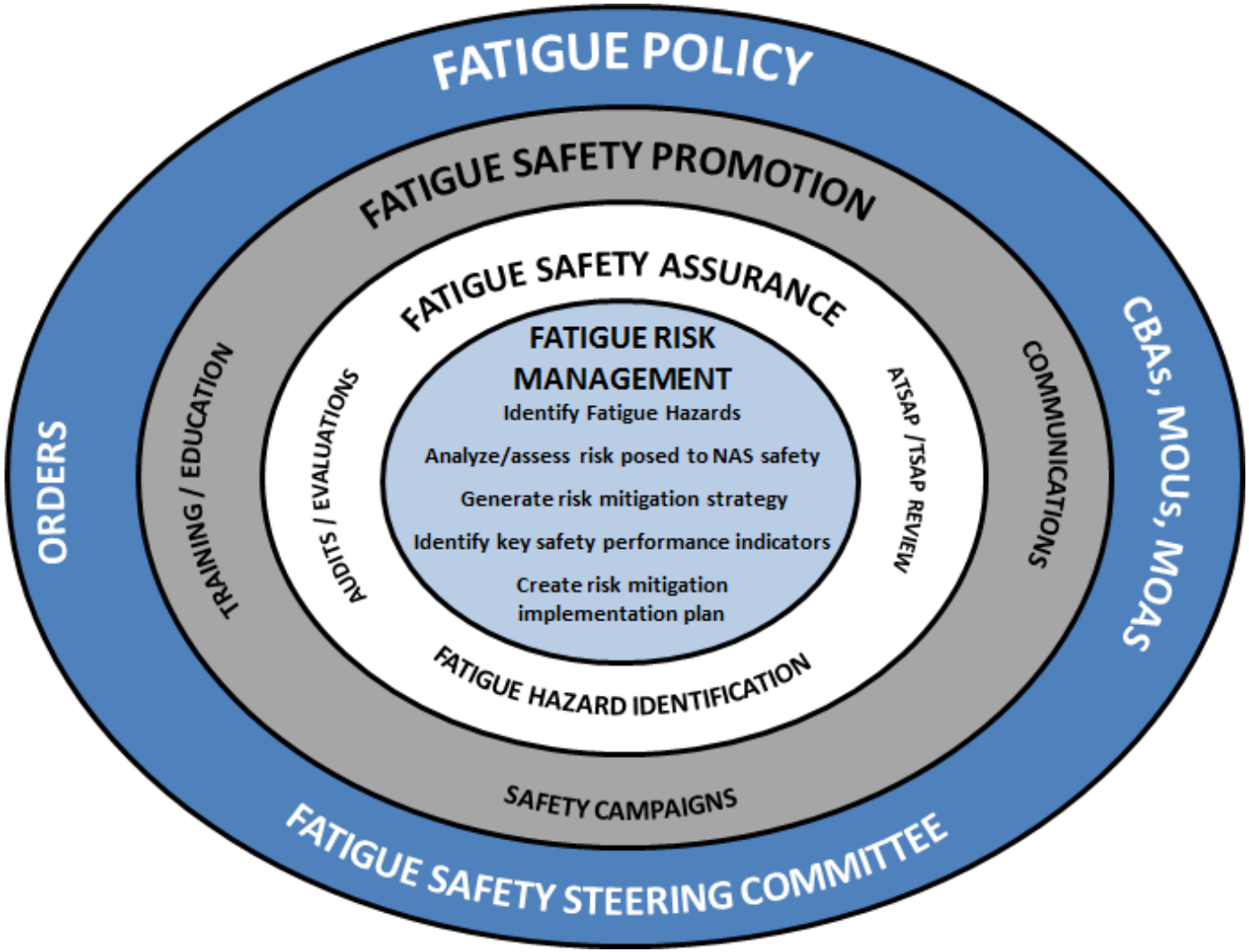
Approaches to Fatigue Risk Management for ANSPs*

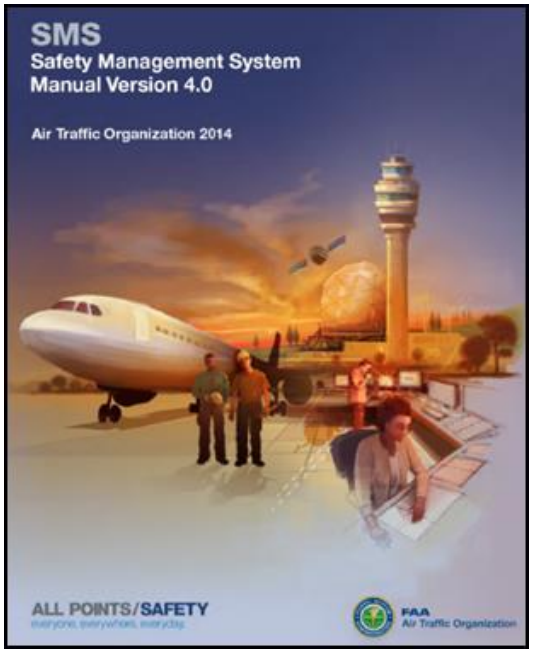
	PRESCRIPTIVE APPROACH	RISK MANAGEMENT APPROACH
REGULATOR	**REGULATOR**: ▪ Sets limits (work hours etc.) ▪ Fatigue risk managed within **Safety Management System** (**SMS**)	**REGULATOR**: ▪ Ensures that ANSP manages fatigue risk to level equivalent to – or better than – prescriptive approach ▪ Establishes **fatigue risk management system (FRMS)** regulations and develops processes for approval and oversight of an ANSP's FRMS
SERVICE PROVIDER (ANSP)	**ANSP**: ▪ Abides by prescriptive limits ▪ Implements personal fatigue mitigation	**ANSP**: ▪ Identifies fatigue limits ▪ Manages risk to stay within limits ▪ Identifies safety objectives and targets ▪ Self-monitors via FRMS processes



FAA ATO Fatigue Risk Management Program

Aligns with FAA ATO Safety Management System





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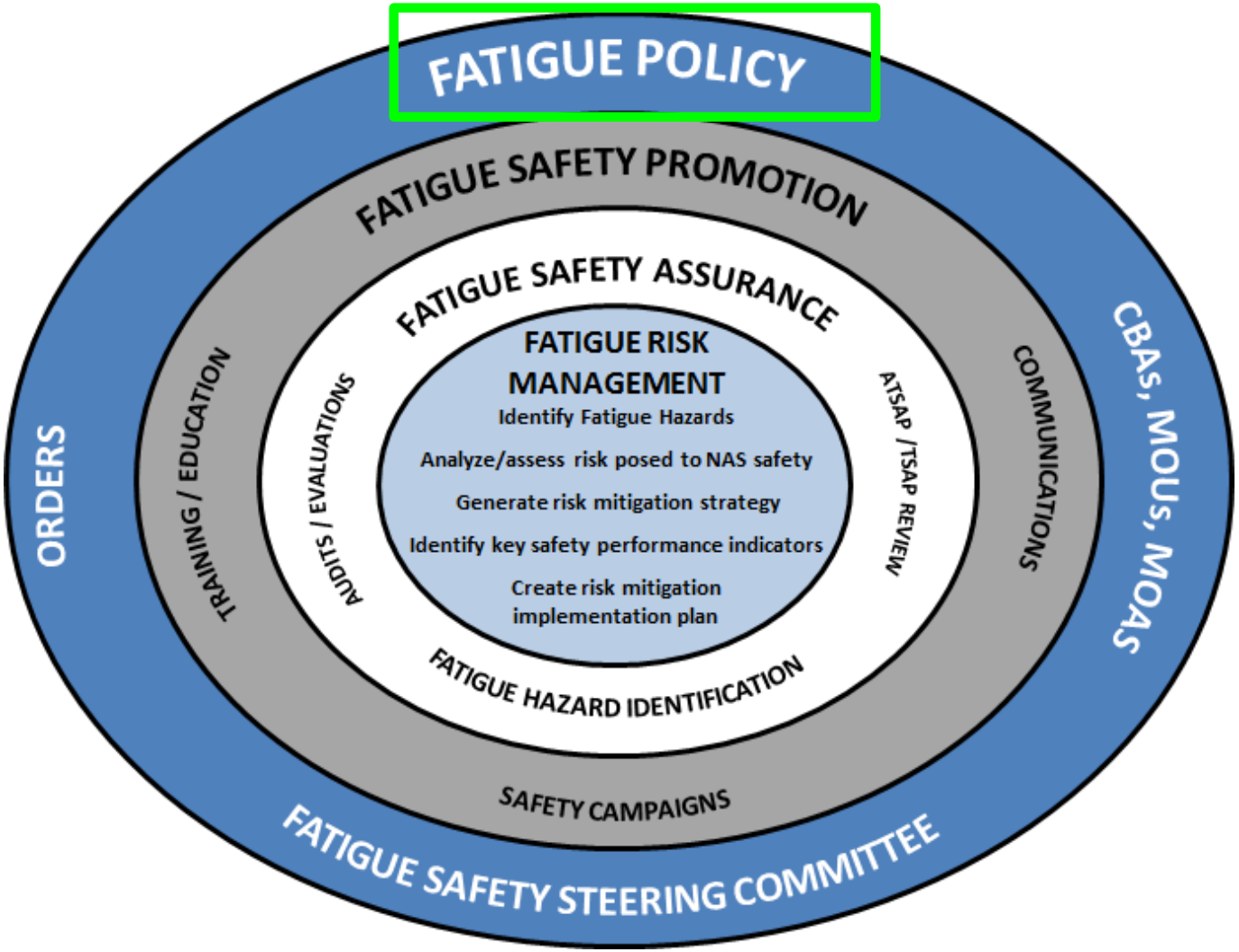
FATIGUE POLICY



ATO FRM Policy and Related Agreements

2-6-6. RELIEF PERIODS

a. Personnel performing watch supervision duties are responsible for ensuring that breaks are administered in an equitable manner and applied so as to promote the efficiency of the agency. They are also responsible for ensuring that breaks are of a reasonable duration.

NOTE–
Breaks to recuperate are p
engage in activities necess
order to effectively manag

b. Personnel perform
are responsible for kn
employees to ensure th
assignments.

c. Personnel perform
must not condone or
during any period duti
instance must be han
applicable Agency p
collective bargaining ag

2-6-7. BASIC WATCH SCHEDULE

a. Facility watch schedules must take into account normal traffic flow, thereby permitting the posting of a continuing schedule for an indefinite period of time. Facility management is responsible for ensuring watch schedules are in accordance with collective bargaining agreeme

b. Air traffic co
duties are those dir
separation of airc
criteria:

1. Do not work
in a shift.

2. Hours wor
operational or not, w

2-6-13. SINGLE PERSON MIDNIG OPERATIONS

a. In order to ensure that a receiving c prepared to accept an aircraft, coordination between facilities/operational areas must be accomplished either manually via landline, or positively acknowledged via automation, (for example, acceptance of the handoff by keystroke entry), when an operational area is operated with one ATCS between the hours of 0000L to 0500L.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

ORDER JO 7210.3Z

Effective Date:
December 10, 2015

SUBJ: Facility Operation and Administration

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION
AND
THE FEDERAL AVIATION ADMINISTRATION

Section 8. All operational personnel are obligated by their significant safety duties and professional responsibilities to prepare for duty with consideration for being well-rested and mentally alert. It is the employees' responsibility to recognize and report to their supervisor when they are unable to perform operational duties due to fatigue. Upon request, employees that self-declare as unable to perform operational duties due to fatigue will be granted leave in accordance with the leave provisions contained within the 2009 CBA. Additionally, at his/her request, an employee that self-declares as fatigued, shall be assigned other facility duties, to the extent such duties are available. If no such duties are available, the employee will be granted leave as described above.

7/1/11
Date

NATCA, FAA announce tentative contract agreement

The National Air Traffic Controllers Association an
Administration announced a tentative agreement
agreement.

affic Controllers Association and the Federal Aviation
nounced a tentative agreement on a new collective

Air Traffic Organization and AEA eff. December 16, 2012

Preamble

ining agreem ent, hereinafter referred to as the "Agreem ent," is
working conditions for a ll bargaining unit em ployees, facilitate the
f disputes and contribute to the growth, efficiency and prosperity of
ffective air traffic control system in the world. The true m easure of
will no t be th e number of disagreements the Parties resolve, but
r and integrity with w hich the Part ies jointly adm inister this

ARTICLE 1

Parties To The Agreement

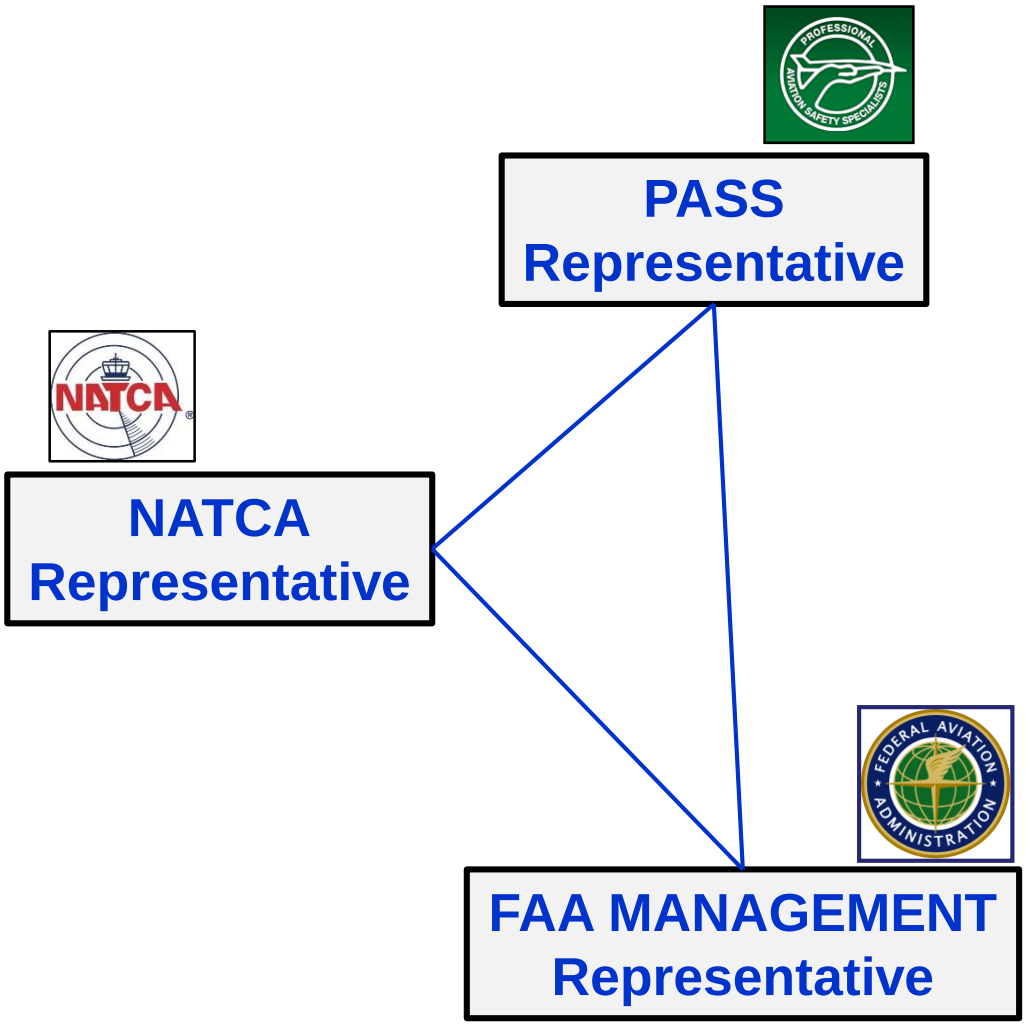
Section 1. This Agreem ent is m ade by and be tw
Specialists (AFL-CIO), hereinafter referred to as "
Aviation Administration, Department of Tran spo
"FAA" or the "Agency," and collectively as the "P

Section 2. The Agency recogn izes the Union as t
for all Air T raffic Organization (ATO) employees
exclusive representative by the Federal Labor Rela
09-0098 (Appendix I), and Case No. WA-RP-11-00

Section 3. This Agreem ent shall cover all bargain
units listed in Section 2. If the bargaining unit list
other employees, those employees shall be covered by this Agreement.

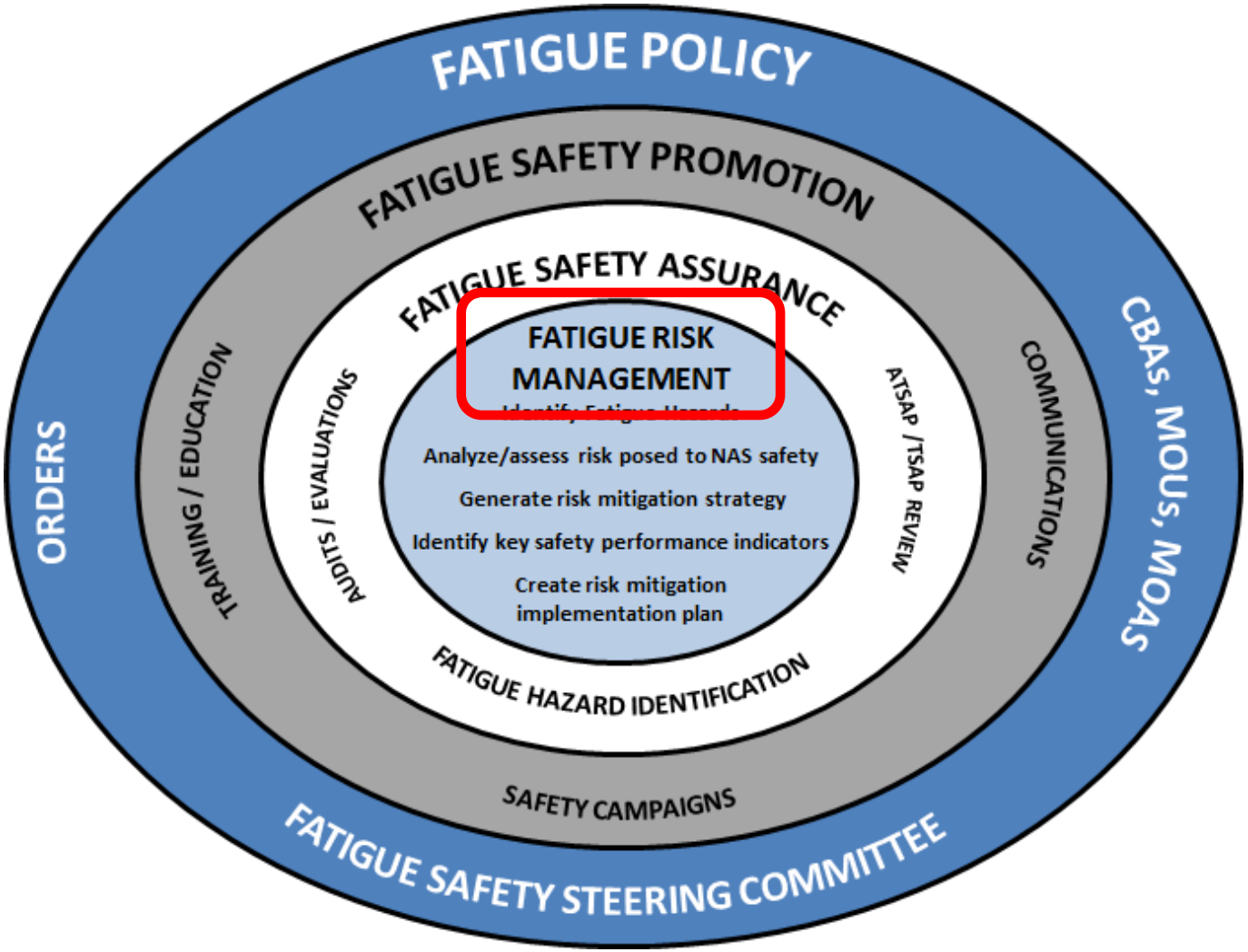
ATO Fatigue Safety Steering Committee (FSSC)

- Established by charter
- Meets in-person quarterly
- Reviews work schedule compliance with JO 7210.3Z
- Reviews fatigue-related incidents and voluntary safety reports
- Recommends courses of action, revisions to Orders, process updates, etc.



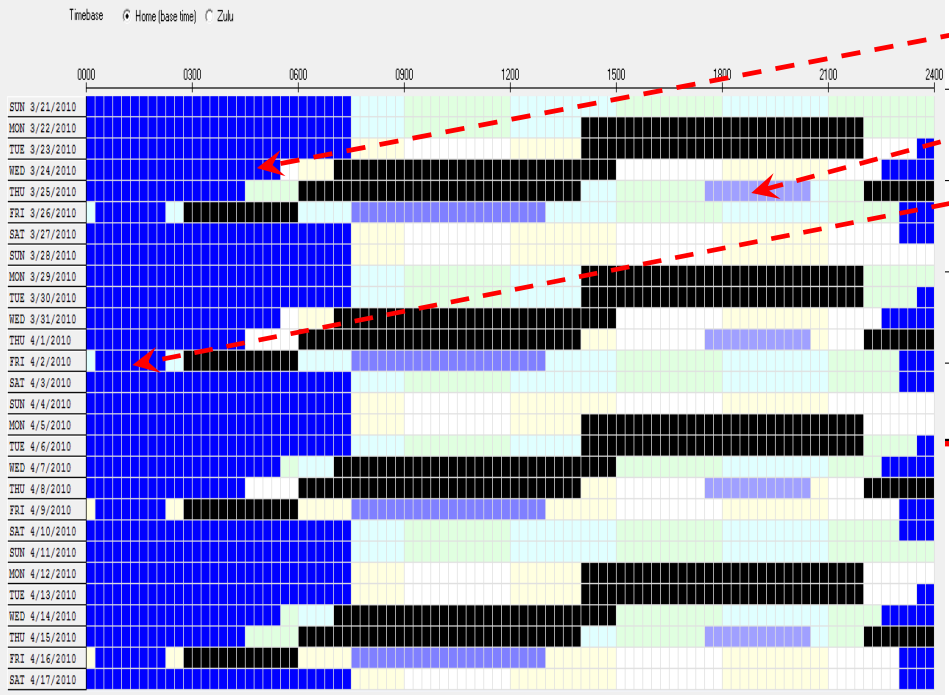
FAA ATO Fatigue Risk Management Program

FATIGUE RISK MANAGEMENT



Work Schedule Fatigue Risk Quantification

- Commercially available modeling software
- Estimated sleep* obtained prior to various shift types (early AM, days, mids, etc.) and on days off
- Work schedule risk score = area below 77% effectiveness



INTERVAL TYPE	SLEEP PERIOD DURATION (HRS)	SLEEP QUALITY	MAXIMUM POSSIBLE SLEEP (HRS)	SLEEP ONSET TIME	SLEEP OFFSET TIME
NIGHT SLEEP prior to an RDO	Up to 8.50	excellent (100%)	Up to 8.50	23:00 (or 90-minute rule*)	7:30
NIGHT SLEEP - before AFTERNOON (1300-1959 start)	Up to 7.50	excellent (100%)	Up to 7.50	00:00 (or 90-minute rule*)	7:30
NIGHT SLEEP - before MIDDAY (1000-1259 start)	Up	excellent		00:00	
NIGHT SLEEP - before DAY (0700-0959 start)	Up				
NIGHT SLEEP - before EARLY AM (before 0700 start)	Up				ule*
AFTERNOON NAP - before MID	3	fair (67%)	2.01 (67% of 3.0 hrs)	3 hours prior to sleep offset	90-minute rule*
RECUPERATIVE BREAKS (sleep period preceded by 15 minutes wake and followed by 30 minutes wake)	2	excellent (100%)	2	00:00 break = 00:15 02:45 break = 03:00	00:00 break = 02:15 02:45 break = 05:00
AM SLEEP - after MID	Up to 5.5	good (83%)	Up to 4.57 (83% of 5.5 hrs)	90-minute rule*	13:00

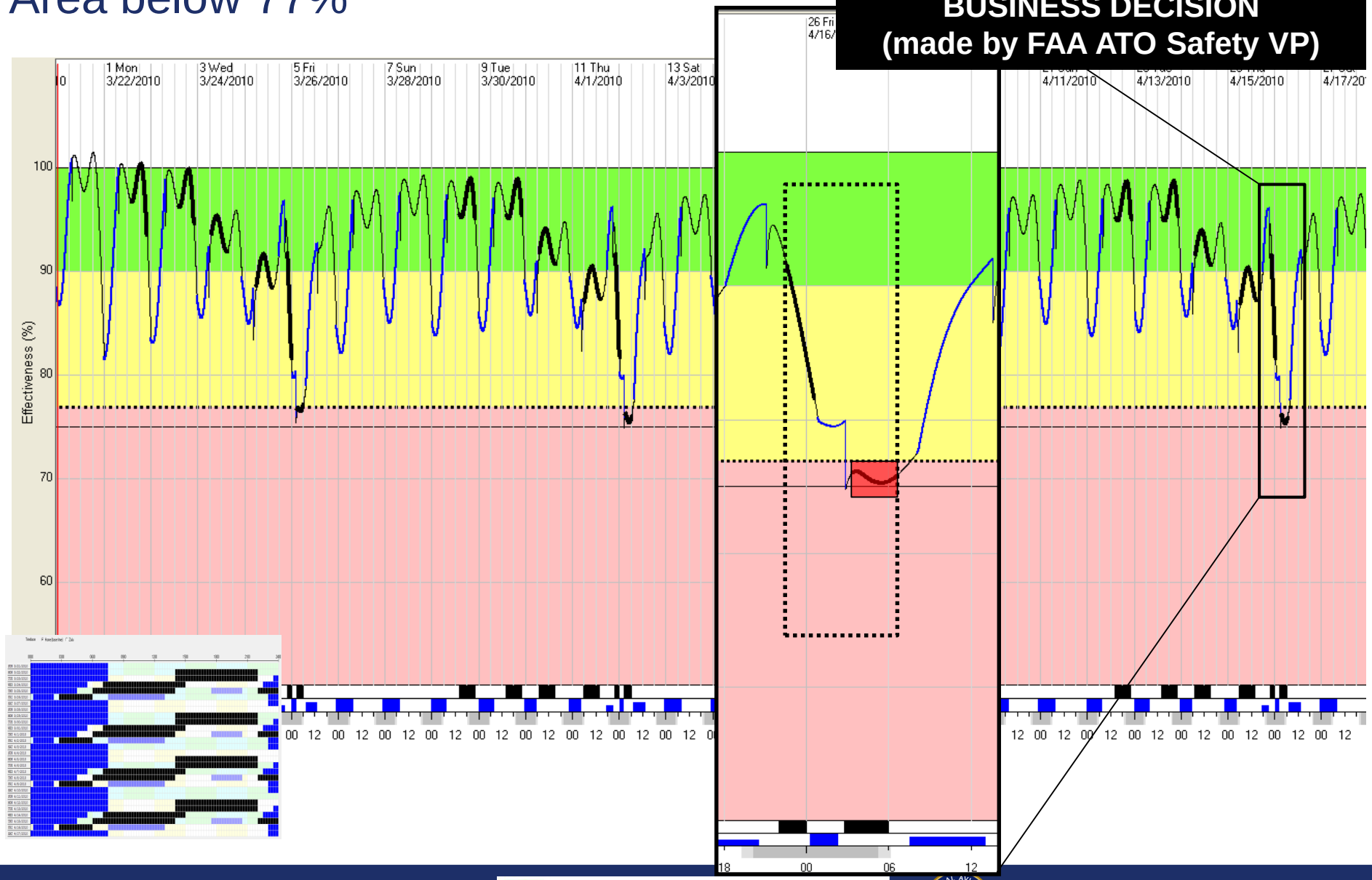
*90-minute rule: To allow for commute time etc. to/from work:
- Sleep ONSET did not start until at least 90 minutes after shift end
- Sleep OFFSET occurred at least 90 minutes before shift start

*** Estimated from ATC survey and actigraphy results + assumptions based on sleep literature**

Fatigue Risk Quantification

Area below 77%

ACCEPTANCE of RISK
is a
BUSINESS DECISION
(made by FAA ATO Safety VP)



Fatigue Risk Quantification – NEXT STEPS

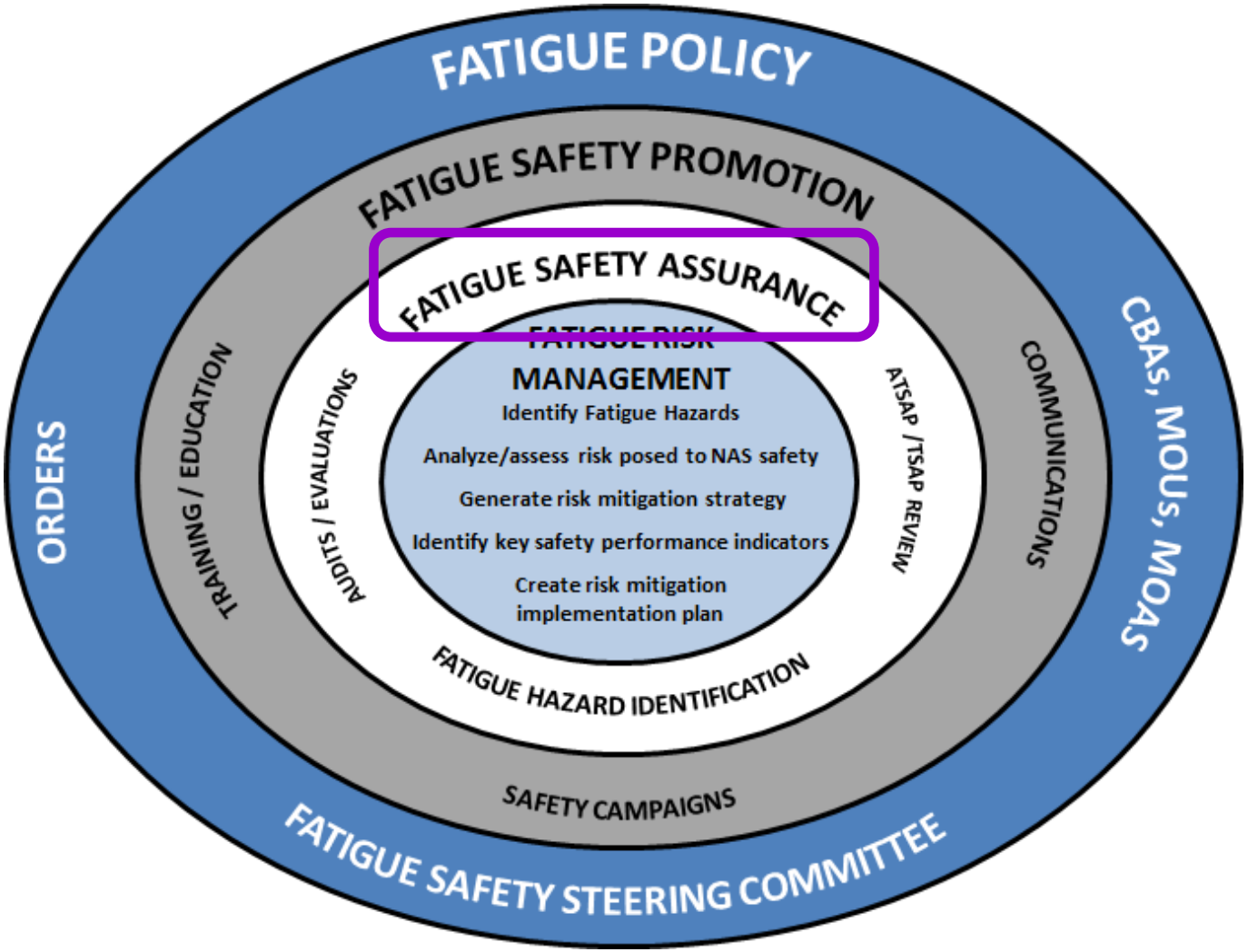
Severity / Likelihood	Minimal 5	Minor 4	Major 3	Hazardous 2	Catastrophic 1
Frequent A	Low	Medium	High	High	High
Probable B	Low	Medium	High	High	High
Remote C	Low	Medium	Medium	High	High
Extremely Remote D	Low	Low	Medium	Medium	High
Extremely Improbable E	Low	Low	Low	Medium	High* / Medium

*Risk is high when there is a single point or common cause failure.

Figure 3.7: Risk Matrix

FAA ATO Fatigue Risk Management Program

FATIGUE SAFETY ASSURANCE

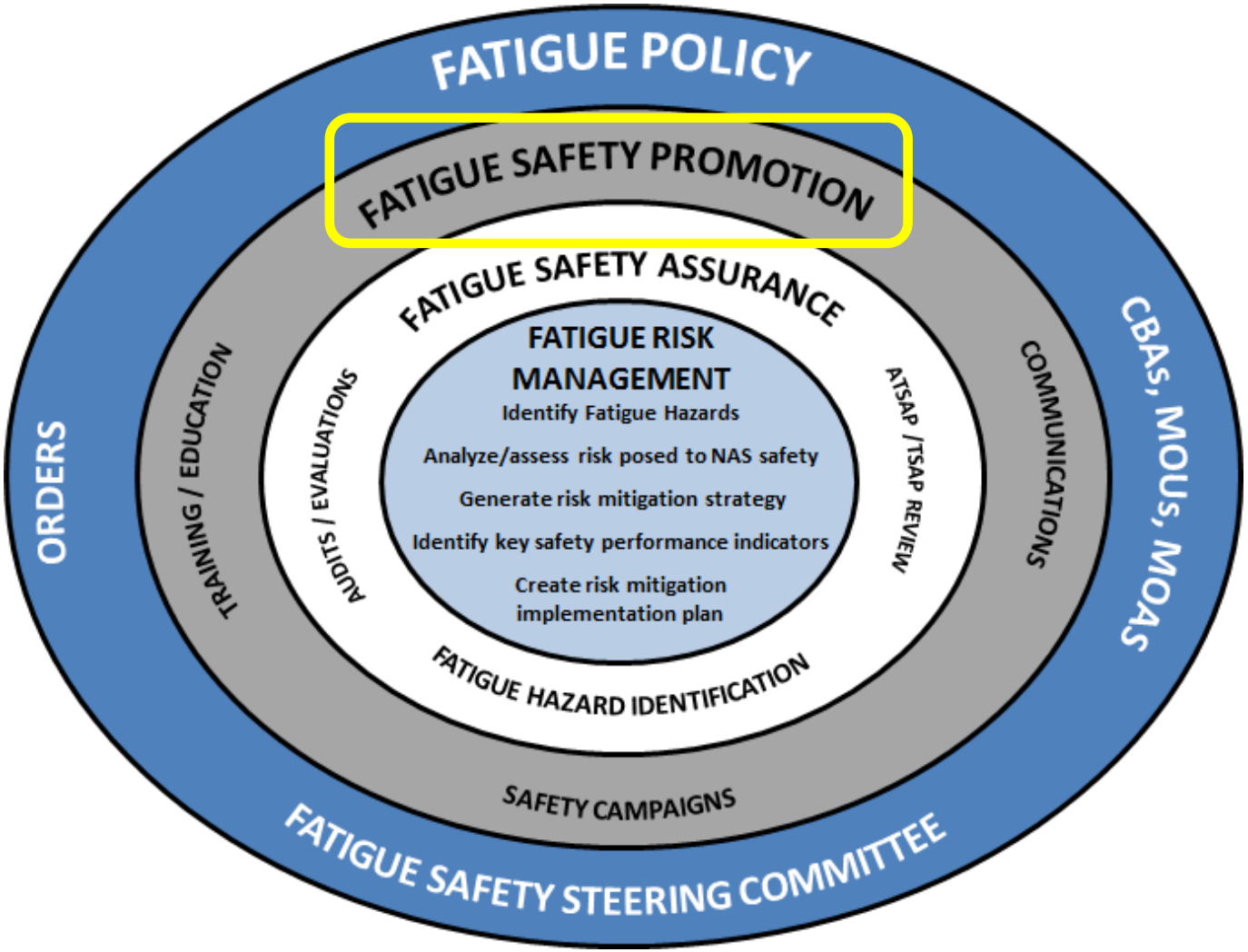


Voluntary Safety Reporting Program: ATSAP

- ✓ Personnel **voluntarily report** safety and operational concerns (including fatigue)
- ✓ **REPORTING is NON-PUNITIVE** (cannot be used to de-certify or de-credential an air traffic controller)
- ✓ Identifies emerging fatigue hazards

FAA ATO Fatigue Risk Management Program

FATIGUE SAFETY PROMOTION



Fatigue Safety Training, Campaigns, Communications

TRAINING

BULLETINS

DO YOU KNOW YOUR FACILITY'S PROCEDURES for SINGLE-PERSON MIDNIGHT OPERATIONS? (0000L – 0500L)

ORDER JO 7210.3Z

Effective Date: December 10, 2015

2–6–13. SINGLE PERSON MIDNIGHT OPERATIONS

WHO: Controllers working midnights.

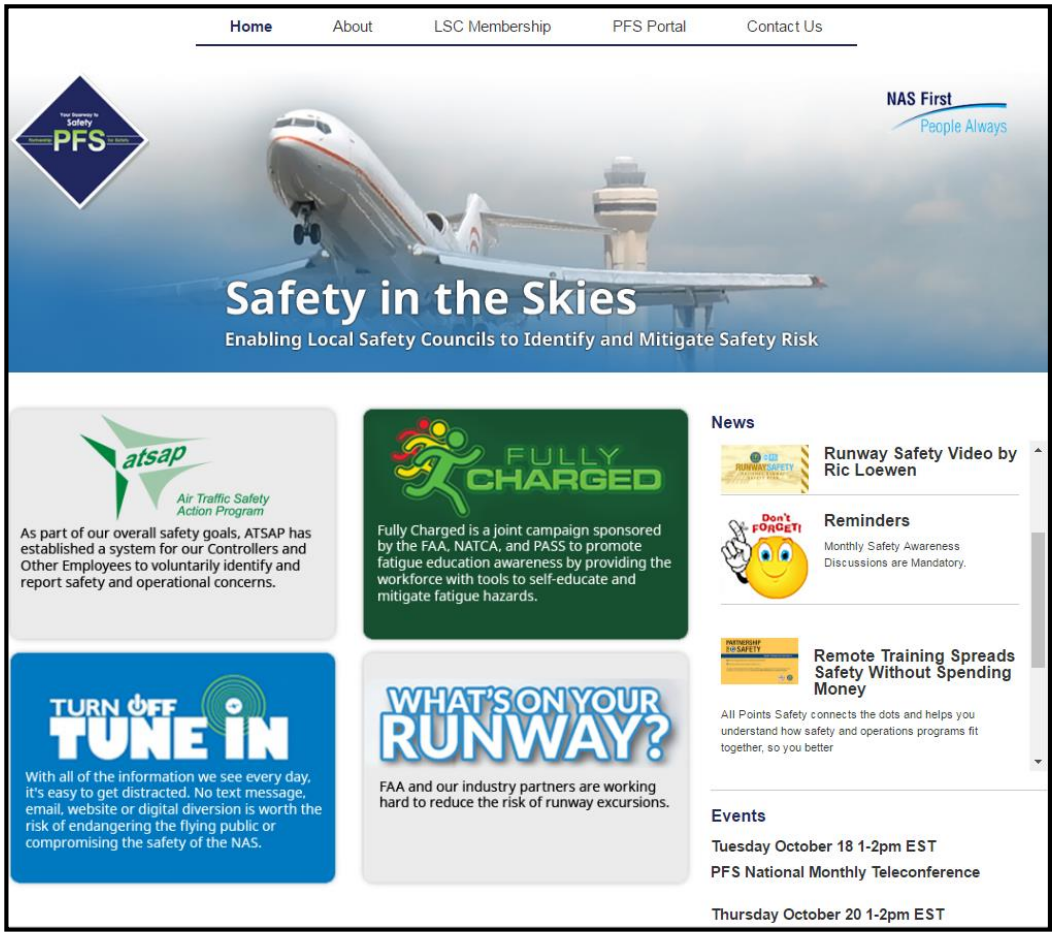
WHAT: Midnight Operations Required Hand-off Procedures

HOW: Hand-off MUST be accomplished either:

MANUALLY - e.g., verbal communication via landline
OR
POSITIVELY ACKNOWLEDGED - via automation

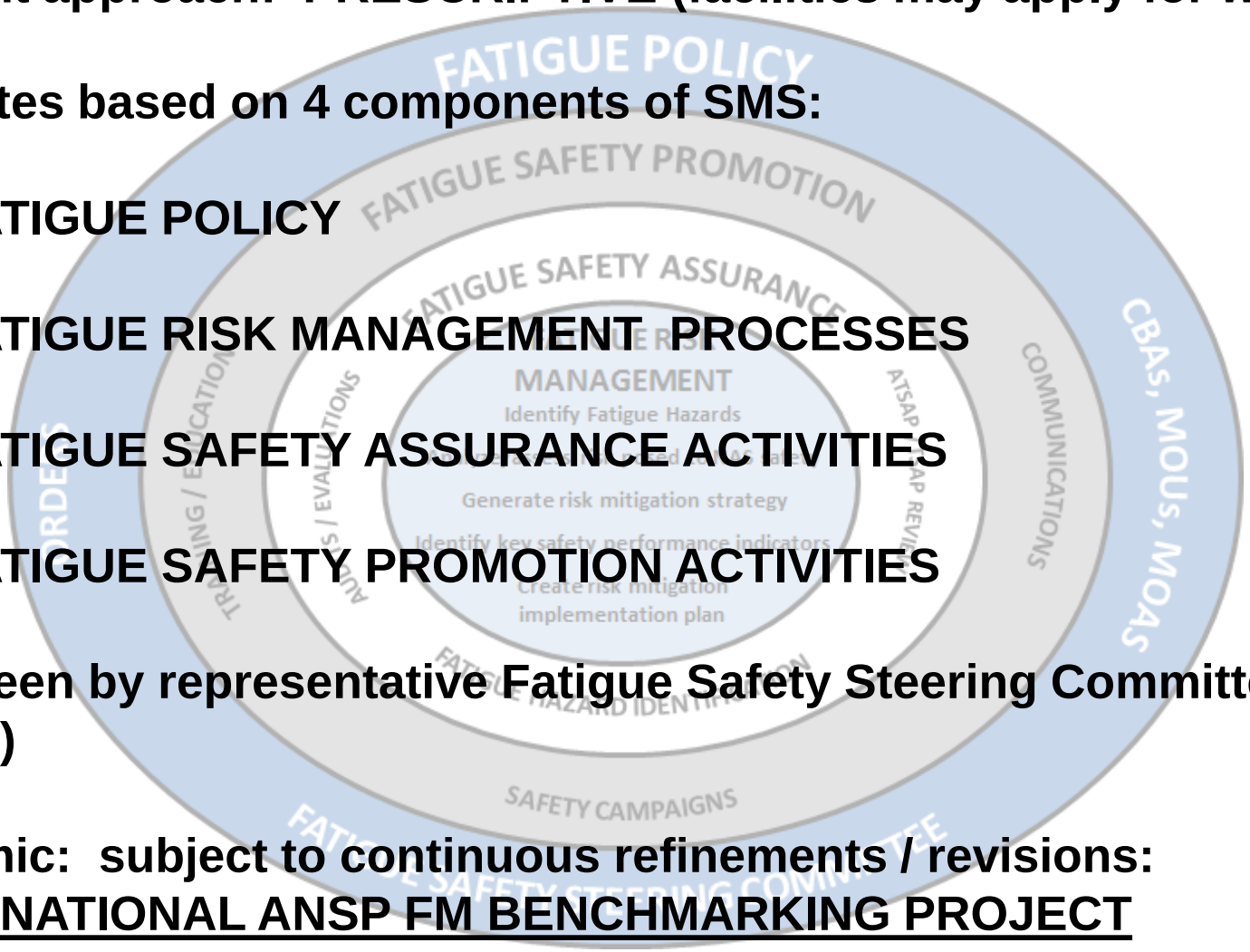
WHY: The pressure for rest and our biological clock degrade alertness during midnight shifts. Requiring a positive action to accept traffic will help ensure that controllers are alert and prepared.

PARTNERSHIP for SAFETY CAMPAIGN



Summary: FAA ATO Fatigue Risk Management Program

- **Current approach: PRESCRIPTIVE (facilities may apply for waivers)**
- **Operates based on 4 components of SMS:**
  - **FATIGUE POLICY**
  - **FATIGUE RISK MANAGEMENT PROCESSES**
  - **FATIGUE SAFETY ASSURANCE ACTIVITIES**
  - **FATIGUE SAFETY PROMOTION ACTIVITIES**
- **Overseen by representative Fatigue Safety Steering Committee (FSSC)**
- **Dynamic: subject to continuous refinements / revisions: <u>INTERNATIONAL ANSP FM BENCHMARKING PROJECT</u>**



ATO FRMP – Acknowledgements (partial list…)

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Ginger Demakos, NATCA

Dean Iacopelli, NATCA

Dale Wright, NATCA

Peter Gimbrere, NATCA

Genna Teitelbaum, NATCA

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Lauren Waggoner, IBR

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Kathy Sanford, PASS (prior FSSC member)

Rick Huss, ATO/FAA – prior FRMT Lead

Bob Jones, ATO/FAA (prior FSSC member)

Wanda Geist, ATO/FAA (prior Technical Operations advisor)

Jason Canton, ATO/FAA (FSSC member)

Kelly McGonigal, PASS (FSSC member)

Jim Mayer, ATO/FAA (current Technical Operations advisor)

QUESTIONS
and
POINT of CONTACT

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