

# **Regulating new ATM / CNS systems in Singapore**

# What we will cover

1. Safety oversight regulator's focus
2. How is the regulator empowered?
3. Rule development
4. Putting it together and validating
5. Monitoring of ATM System's safety level

# Safety oversight regulator's focus

- **Looks at Compliance, Safety and Performance**
- **How?**
  - Conduct audits and inspections
  - Conduct safety investigations into incidents
  - Analyse breaches in Safety Performance Indicator Targets
- **Focuses on the goals of the State Safety Program and the Operator's Safety Management System**
  - Identify latent safety conditions and hazards that operations may have missed
  - Actions that can affect safety and performance

Identify areas of  
safety concern

Safety performance  
monitoring, audits,  
inspections

**Resolution  
of safety  
concerns**

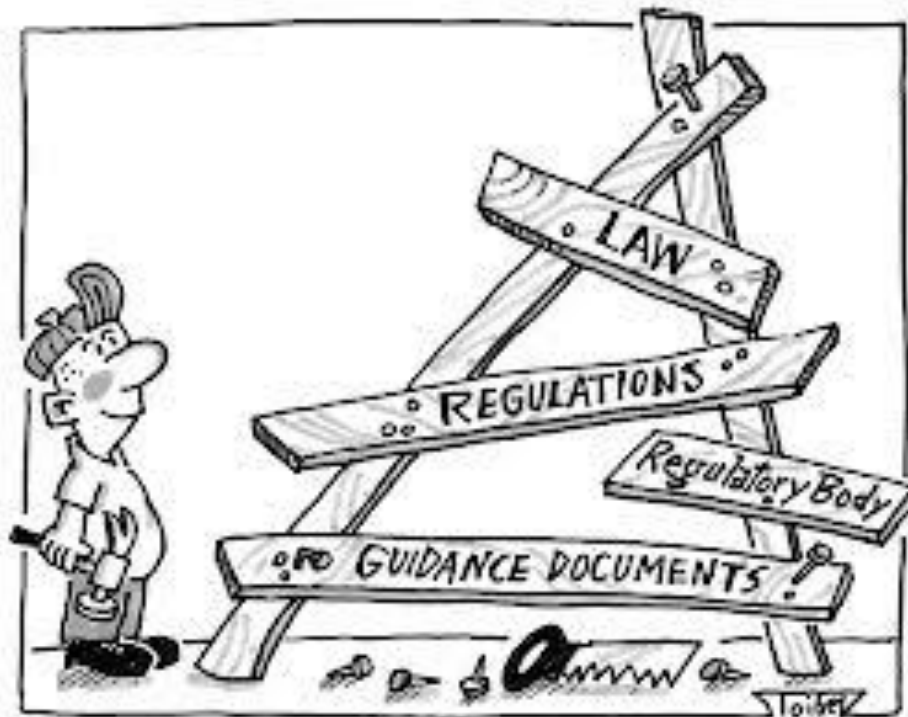
**Surveillance  
activities**

**SAFETY  
OVERSIGHT  
APPROACH**

**Changes &  
Events**

Introduction of  
ATM System

# Singapore's safety oversight regulation structure



# How is the Regulator empowered?

## LEGISLATION

### CURRENT

Air Navigation Act

Primary Legislation  
(Parliament)

Air Navigation Order

Subsidiary Legislation  
(Minister)

Air Operator Certificate  
Requirements

Singapore General  
Aviation Requirements

Singapore Airworthiness  
Requirements

Singapore Air Safety  
Publications

Manuals of Standards

Technical  
Requirements  
(CAA)

# Rule development

- **Rules originate from various sources**
  - Introduction of new or amendments to ICAO SARPs
  - Changes to safety policies
  - Industry feedback
  - New aviation developments which require new rules
  - Current rules to be deleted, amended or enhanced
- **Singapore implements ANS regulations (technical requirements) through the Manual of Standards (MOS)**

Examples:

  - MOS – AT (Aeronautical Telecommunications)
  - MOS – ATS (Air Traffic Services)
  - MOS – AIS (Aeronautical Information Services)
- **Issuing Advisory Circulars (ACs)**
  - Guidance provided to service providers on the meeting regulatory compliances where necessary

# Putting it together

- **Rule making**

- Are existing **safety critical related regulations** sufficient?
- Otherwise develop new rules where necessary

- **Steps**

- Submit draft new rules for review by Rule Development Committee (RDC)
  - Ensure rules developed in structured and coordinated manner
  - Ensure consistency of rules
- 6 months to 1 year to develop and approve new rules (Depending on complexity)
- Industry consultation is critical

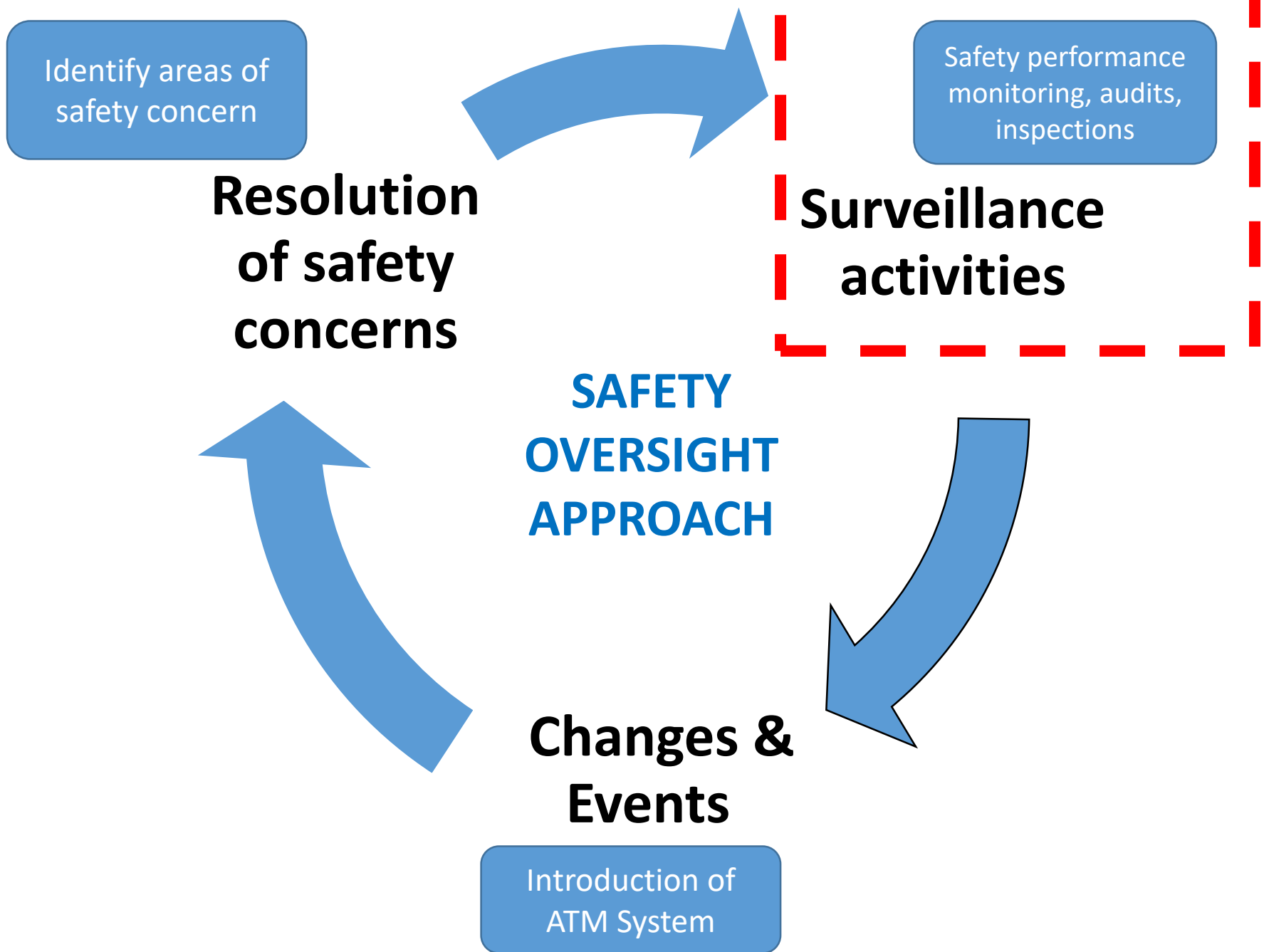
- **Validation**

- Validation of compliance to rules



# **Validating new ATM system is compliant and safe for operations**

- Regulator participates in key project milestones to provide regulatory feedback
- Review documentation about ATM system implementation and maintenance set up
- Conduct audits / inspection of new ATM site
  - Validate documented processes with site implementation
  - Identify safety issues
  - Identify that maintenance and operational processes are established before the system is operational
- Review and accept the Safety Case or equivalent
- Monitor the progress of the activities through regular updates
- Monitor the promulgation of aeronautical information prior to the start of the new / change to ATM operations



# Monitoring of ATM System's safety level

- Does not end at the commissioning and operation of ATM system
- Safety performance indicators
  - Establish safety performance indicators with ANSP
  - Monitor safety performance indicators to ensure ATM system provides safe operations
- Audits and inspections
  - Ensure aviation safety is maintained
  - Validate compliance to regulations

**Thank You**