



Risk Based Systems and Safety Data Intelligence

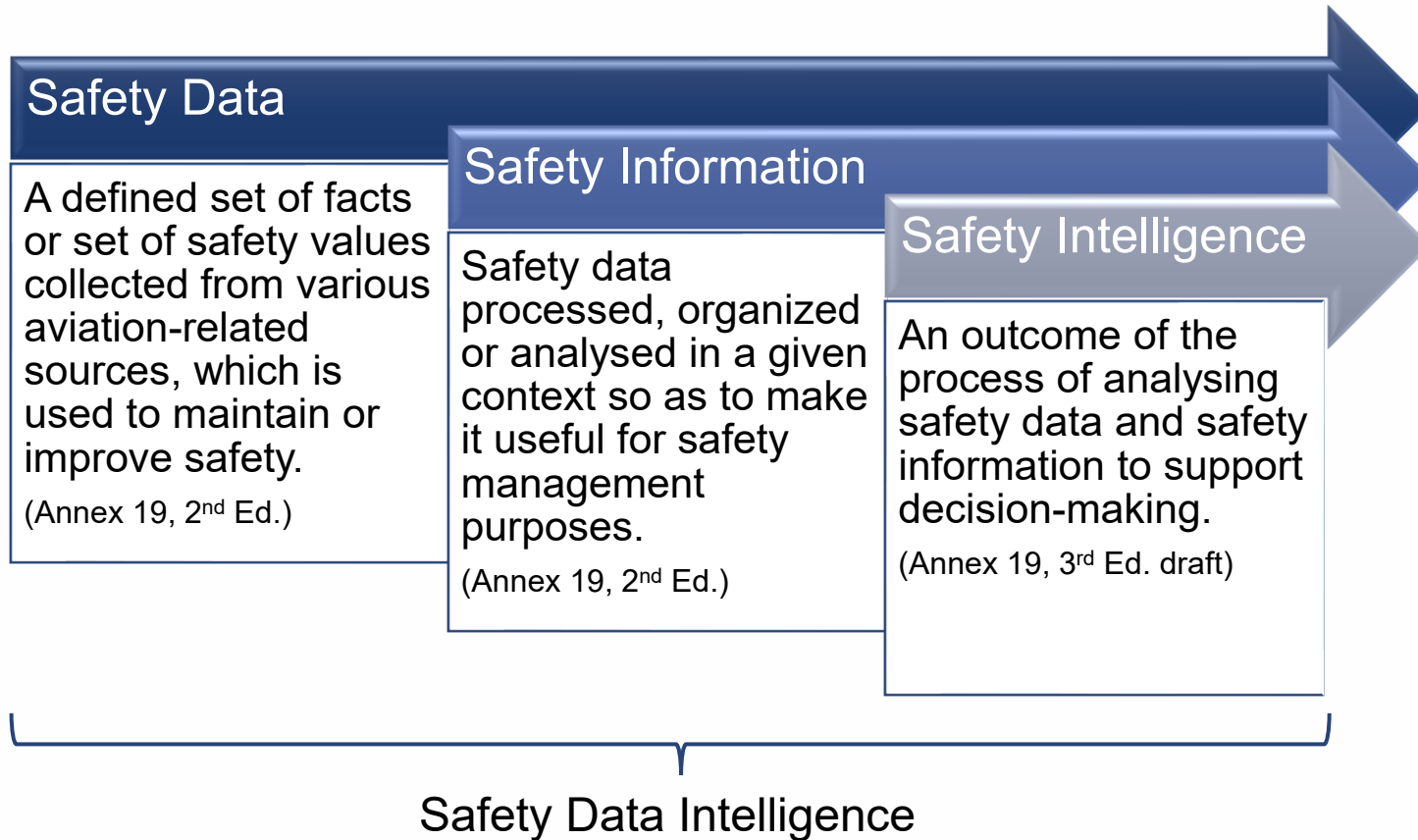
Fifth MID Safety Summit, Kuwait

Dr. Mohammed Raad

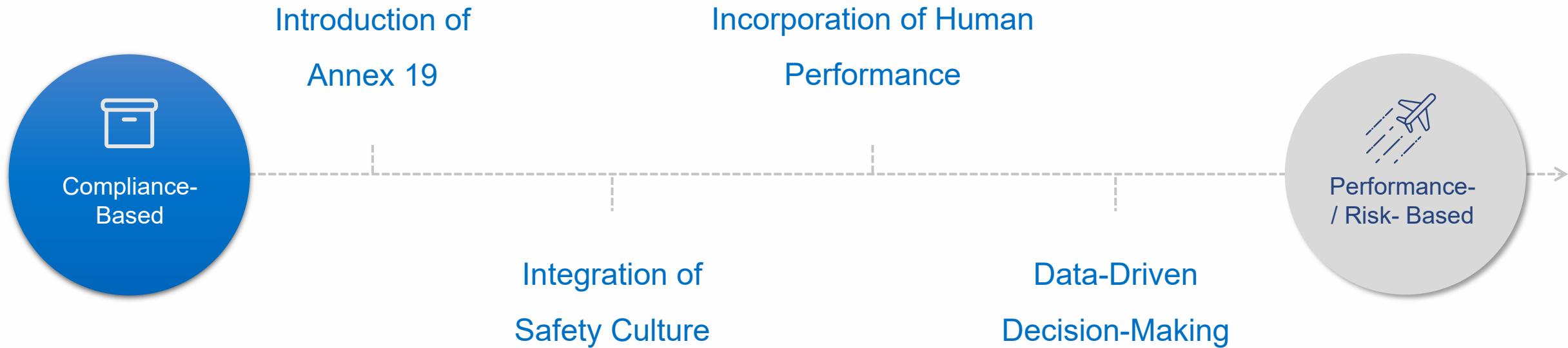


Introduction

Risk-Based Systems and Safety Data Intelligence

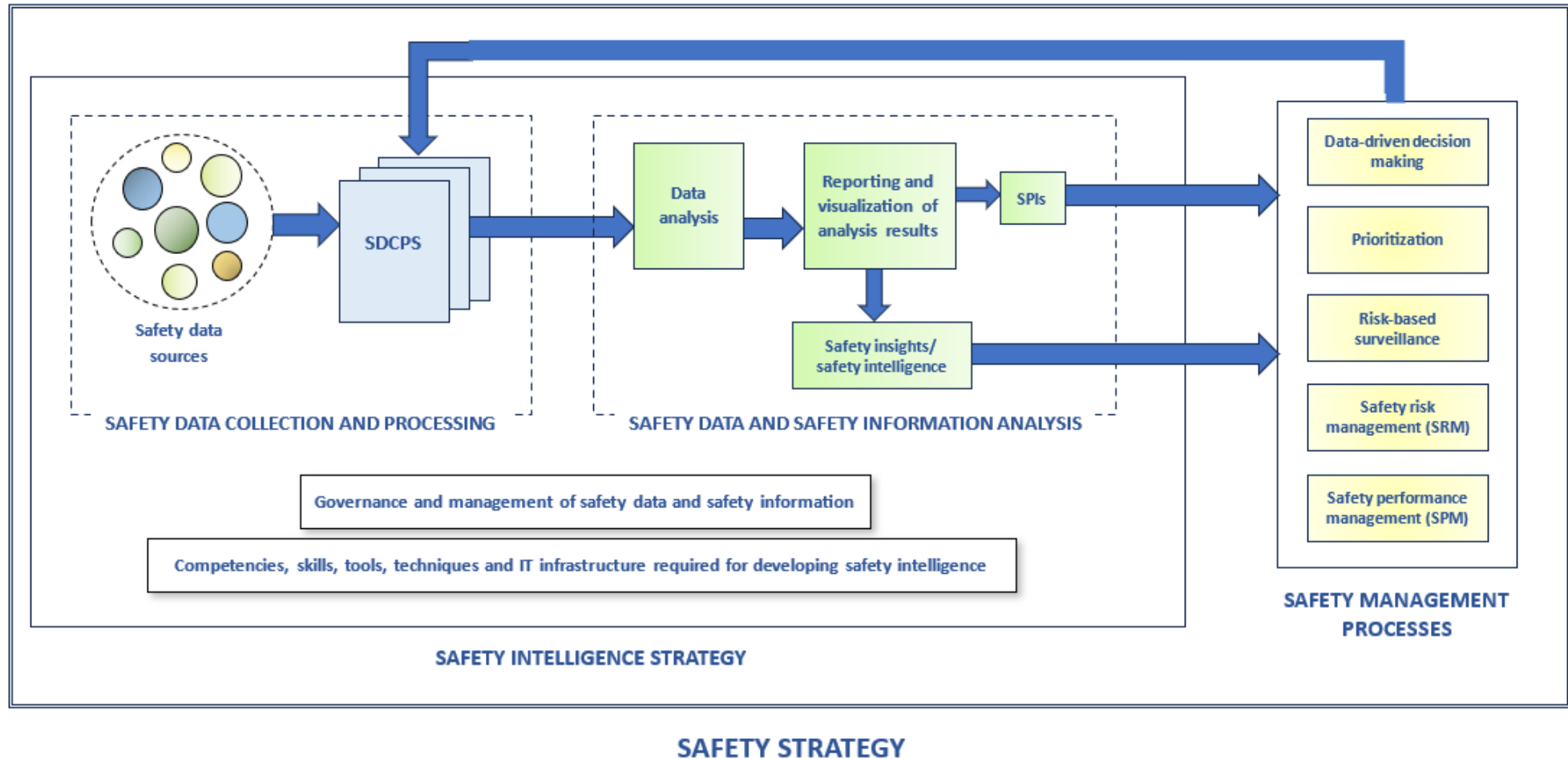


Evolution of Safety Management



Safety Intelligence

Its Role in Risk Management



Safety Intelligence

Safety Data Sources

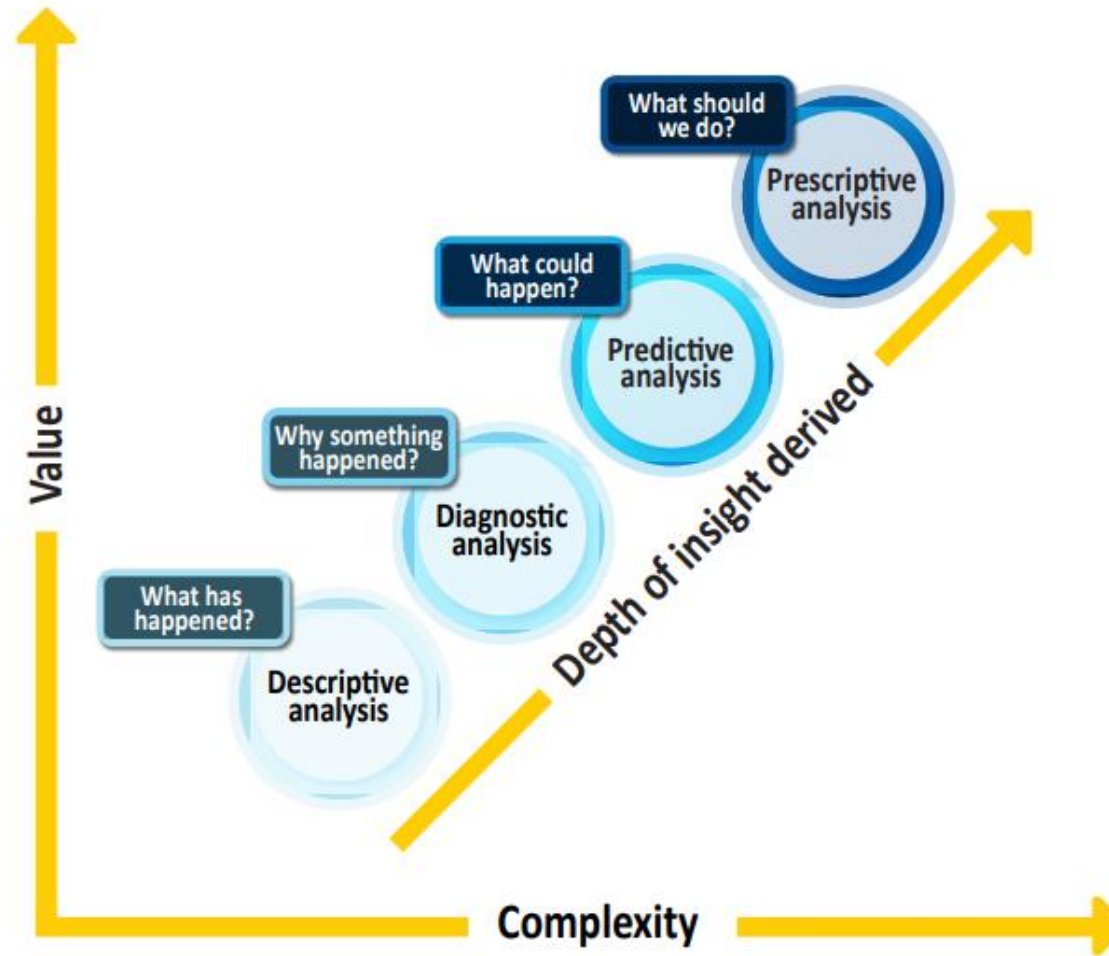
Safety-related data can be typically found in the following sources:

- Accident and incident databases
- Safety oversight systems
- Systems containing recorded or automatically collected data
- Organizational internal monitoring activities that observe day to day activities
- Systems containing data and information from regional organizations and other States



Safety Intelligence

Analysis Levels



All types of analyses need accurate and clean data to generate the best results. Unreliable data may generate incorrect and inaccurate conclusions and insight.

Risk-Based Systems in Aviation Safety

RBS and Safety Risk Management

Safety Risk Management

- Hazard Identification
- Risk Assessment
- Risk Mitigation
- Continuous Monitoring



Risk-Based Systems

Designed to identify, assess, and prioritize safety risks.

By focusing on the most significant risks, resources can be allocated more efficiently, ensuring that the areas posing the greatest threat are addressed first.

Case Study

GACA's State Safety Risk Profile (SRP)



2.6.3.1. Purpose.

The Kingdom of Saudi Arabia's (KSA) State Safety Program (SSP) is built on dynamic safety risk management foundations and ensures the General Authority of Civil Aviation (GACA) has developed a number of safety risk profiles, including but not limited to organizational safety risk profiles, sector safety risk profiles, an industry safety risk profile, and a system safety risk profile. These profiles are all tools in evaluating the perceived highest risk associated with the overall operation of the organization, area, sector, industry, and system.

The purpose of developing a Safety Risk Profile is *to consistently, efficiently, and systemically manage the Kingdom's aviation safety system*; the below are the main objectives of the SRP process:

- Efficiently manage the aviation industry and its related sectors and organizations, as "what is not measured, is not managed".
- Transform the State Safety Management System in the Kingdom of Saudi Arabia to a risk-based system and adopting a risk-based surveillance (SRBS) approach.
- Be one of the main identification tools for the preventive safety management system.

2.6.3.2. Stakeholders.

The key stakeholders involved in the Safety Report Governance process are the President, Executive Vice President (EVP), the respective Technical Departments (TDs) within Aviation Safety and Environmental Sustainability sector, the Safety Risk Management (SRM) Department, the Economic Licensing General Department, and all certificate holders.

2.6.3.3. Safety Risk Profile (SRP) Framework.

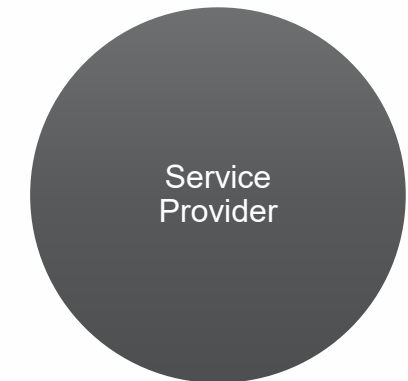
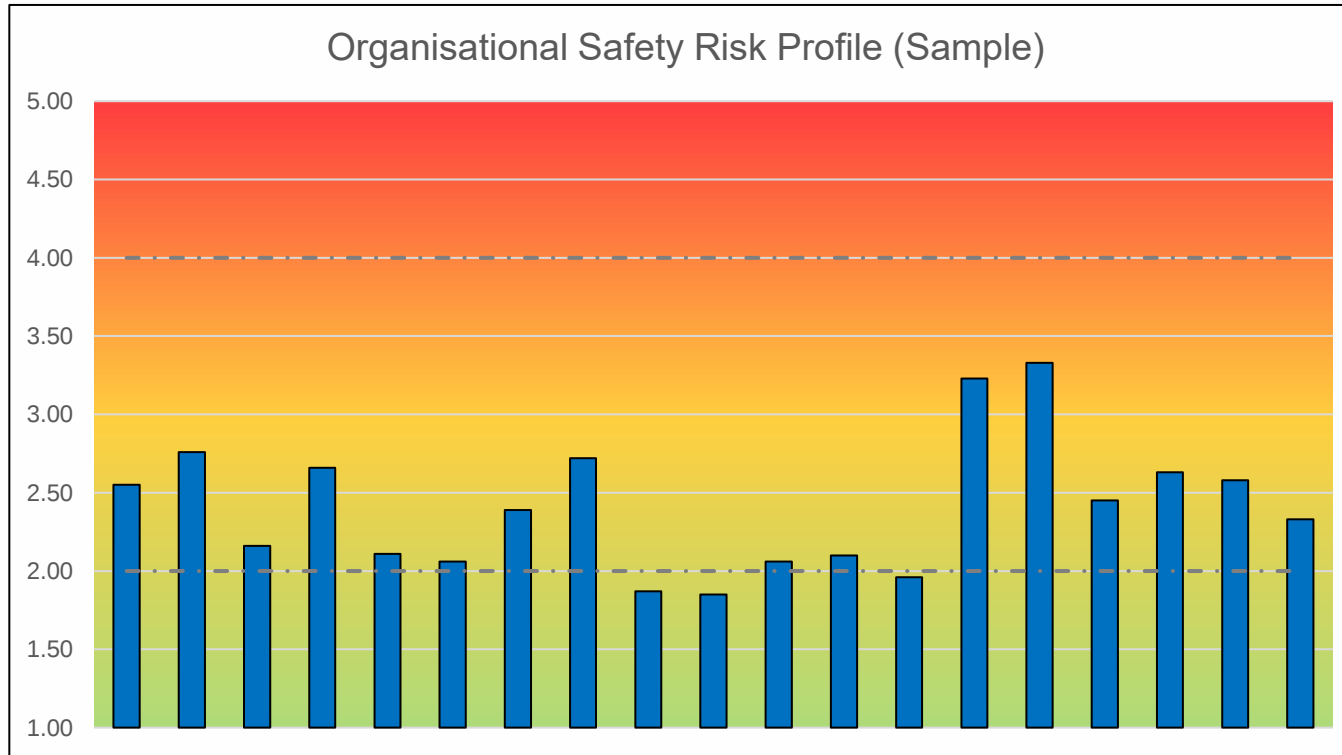
The Safety Risk Profile (SRP) tool utilizes all factors identified in the ICAO Safety Management Manual (Doc 9859) but are reorganized and redistributed to suit the needs and local conditions of the General Authority of Civil Aviation and the Saudi aviation industry.

The SRP framework, depicted in Figure 2.6.3.1, is made up of 10 weighted indices, each index is made up of several sub-indices (i.e., factors), and every factor has a set of defined descriptors (i.e., risk measures) to ensure a subjective unbiased analysis of each of the factors and indices.

The 10 indices are made up of three organizational indices [OI] and seven safety indices [SI]; these

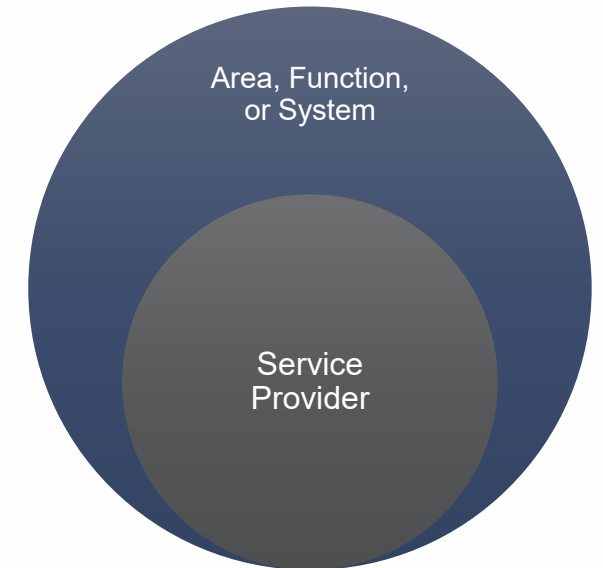
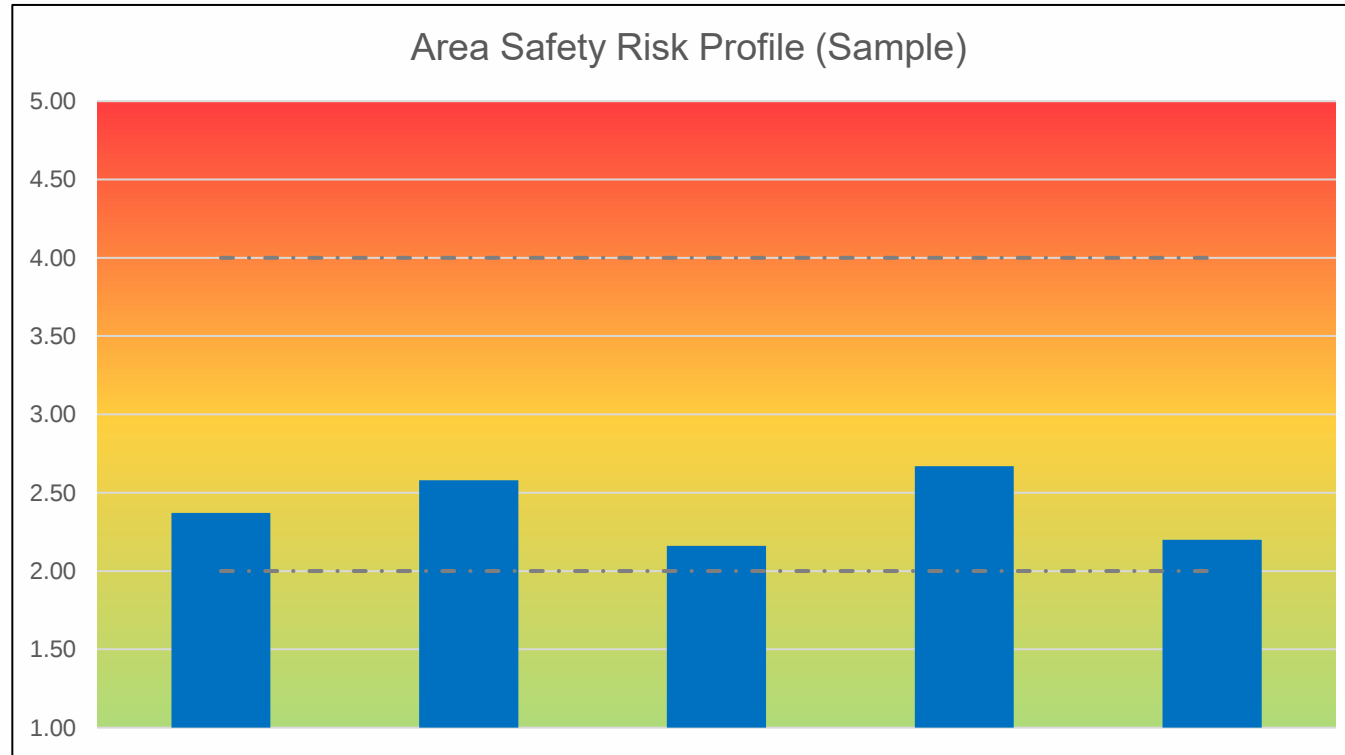
Case Study

Organisational Providers Risk Profiles



Case Study

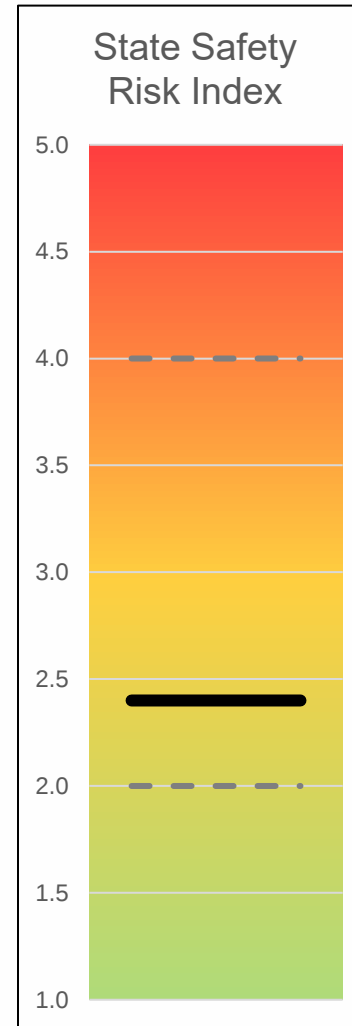
Area Safety Risk Profiles



Case Study

State Safety Risk Profile

النتائج		المؤشر	
المستوى	المعدل		
Medium		المؤشر الأول	القدرة المالية
Medium		المؤشر الثاني	التعقيد التشغيلي والتنظيمي
Medium		المؤشر الثالث	موظفو السلامة الرئيسيون
Low		المؤشر الرابع	نظام إدارة السلامة
Low		المؤشر الخامس	أداء السلامة
Medium		المؤشر السادس	نتائج وقرارات التدقيق
Low		المؤشر السابع	نضج نظام تقييم وتحديد المخاطر
Medium		المؤشر الثامن	نضج نظام البلاغات
Medium		المؤشر التاسع	الوقائع السابقة
Medium		المؤشر العاشر	تعزيز السلامة
2.40		المتوسط	
Medium		مستوى الخطورة	



Case Study

GACA's State Safety Risk Profile (SRP)

What can we do next?



Towards a Data-Driven Future in Aviation Safety



Thank You

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