

**ACRP Problem Statement:** 74

**Recommended Allocation:** \$300,000

***Enhancing the Management of Adverse Conditions, IROPS, and Crises with Airport Collaborative Decision Making***

**Click here to see problem statement in IdeaHub:** <http://ideascale.com/t/UKsrZBUXI>

*(Note: you must be a registered user in myACRP/IdeaHub.)*

**TAGS:** Airside, Emergency Management, Information Technology, Landside, Operations, Safety, Terminal

**STAFF COMMENTS**

The proposed research should consider related ACRP IROPS projects (as noted), and Report 137: Guidebook for Advancing Collaborative Decision Making at Airports.

**AVERAGE INDUSTRY RATING SUMMARY**

	<b>Committees<sup>1</sup></b>	<b>Airport Community<sup>2</sup></b>
Achievable	4.67	3.33
Applicable	4.00	4.08
Implementable	4.33	3.23
Understandable	4.33	3.38
<b>OVERALL</b>	<b>4.33</b>	<b>3.49</b>

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*Notes:* 1. Includes TRB aviation committees and committees from ACI-NA and AAAE.

2. Includes airport employees serving on active ACRP project panels.

[\*\*CLICK HERE TO SEE DETAILED INDUSTRY RATINGS\*\*](#)

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**ACRP OVERSIGHT COMMITTEE (AOC) DISPOSITION**

The average AOC rating among its voting members was 3.5 on a scale of 1 to 5. There was no discussion. The problem statement approved and funded at \$300,000 as ACRP Project 10-27.

***Enhancing the Management of Adverse Conditions, IROPS, and Crises with Airport Collaborative Decision Making***

**TAGS:** Airside, Emergency Management, Information Technology, Landside, Operations, Safety, Terminal

**OBJECTIVE**

The main objectives of this research project are providing to the U.S. airports and their stakeholders (airlines, ATCT, ground handling service providers, etc.) the following:

- Overview of A-CDM operations management,
- Benefits of A-CDM operations management for the community of the stakeholders of the airport operations,
- Guidance for developing an A-CDM operations management organization, the related tools, and CDM-friendly procedures,
- An introduction to Total Airport Management (TAM), the future of A-CDM,
- Case studies and lessons learned from A-CDM airports abroad (e.g. CDG, LHR, ZRH, etc.).

**BACKGROUND**

Collaborative Decision Making (CDM) is the process of data sharing whereby airports, airlines, mutual aid partners, other stakeholders (such as ground handling service providers), and the FAA's Air Traffic Organization (ATO) share information to make operational decisions together. CDM is also about developing all together procedures for addressing adverse conditions.

CDM has been implemented in the United States for many years. However, until the very recent past, this program has mainly focused on the cooperation and the data sharing between FAA and the air carriers. Airports are now at the threshold of becoming fully active partners in CDM, as Airport CDM has been listed by the FAA/Industry CDM Stakeholders Group (CSG) as one of the next step for CDM in the U.S. ACRP Report 137 – Guidebook for Advancing Collaborative Decision Making (CDM) provides guidance to airport operators about the value of CDM and how to integrate it into airport operations and planning.

This proposed project would be a continuation of ACRP Report 137. Report 137 focused on the implementation of Airport CDM and its aspects related to the definition and monitoring of metrics/key performance indicators. The main goal of this new project would be to develop guidance to airports and their stakeholders for an efficient use of Airport CDM as a tool for enhancing the management of irregular operations (IROPS), emergencies, and crises.

**APPROACH TO RESEARCH**

**CONTEXT**

In the United States, CDM has been used since the mid-1990s between air carriers and FAA's Air Traffic Organization. Leadership for its implementation and development is provided by the CDM Steering Group (CSG), a joint industry/government initiative. More information on <http://cdm.fly.faa.gov/>

**APPROACH (LESSONS LEARNED)**

The project can benefit from the ongoing discussions within the CDM Stakeholders Group (CSG) on A-CDM, past ACRP project on A-CDM and crisis management, as well as from the experience of European airports in operating under an Airport CDM organization.

A-CDM is fundamentally about sharing operational data between the stakeholders of Air Traffic Management (ATM) in order to manage operations based on accurate, real-time information instead of schedules, and decide

together how to address adverse situations. However, at most "A-CDM airports", the implementation of A-CDM went a ways further than only as a Pre-Departure Sequencer. Collaborative procedures for managing both regular operations and degraded situations were prepared. Cross-training sessions were set. A-CDM culture was disseminated beyond airfield operations. A-CDM promotes a mutual understanding of goals and builds collaboration throughout the airport operations community.

A-CDM considers everything that can impact regular operations, including low- or medium-intensity events that might not be covered by Airport Emergency Plans (AEP) and Irregular Operations (IROPS). A-CDM intends to prevent (as far as practicable) and mitigate the impacts of these adverse conditions, and recover the path of regular operations as soon as possible. Typically, airport stakeholders prepare common procedures for a wide variety of situations. These documents are updated/supplemented after each new crisis or degraded situations with lessons learned. A-CDM organization is used as a powerful leverage for addressing adverse conditions.

The project should consider the applicability and benefits in the U.S. of Total Airport Management (TAM) and Airport Operations Center (APOC). TAM and APOC are two concepts developed by Eurocontrol with the support of DLR (German Aerospace Center) as the step beyond A-CDM. TAM may be seen as the extension of A-CDM to the entire airport – not only the airside, with further integration with Eurocontrol's Network Manager Operations Center (NMOC). APOC is based on a local Airport Operations Plan (AOP), integrating data from the different stakeholders, delivering operations-ready information, and addressing real-time issues. APOC is under implementation at Paris-Charles de Gaulle (CDG) and London Heathrow (LHR) as part of SESAR's deployment (Single European Sky ATM Research).

## OBJECTIVES

The main objectives of this research project are providing to the U.S. airports and their stakeholders (airlines, ATO, ground handling service providers, etc.) the following:

- Overview of the CDM operations management,
- Benefits of the CDM operations management for the community of the stakeholders of the airport operations,
- Guidance for developing a CDM operations management organization, the related tools, and CDM-friendly procedures,
- Case studies and lessons learnt from IROPS and crisis managed under CDM organization and processes.

## PROPOSED TASKS

The research project includes producing or collecting:

- Identification of the benefits of CDM operations management for IROPS and crisis management,
- Definition of the minimum requirements for adapting/upgrading for CDM Operations Management an organization built for Emergency Operations Management,
- Guidance for developing CDM-friendly procedures on IROPS and non-standard situations,
- Gap analysis between the federal and state standards and requirements for emergency/crisis management and CDM operations management,
- Case studies of successful CDM management of IROPS and crisis.

The project shall include the following tasks:

- a. Benchmarking successful CDM operations management organizations,
- b. Benchmarking case studies of successful CDM management of IROPS and crisis,
- c. Defining CDM operations management and differences between CDM and emergency operations management,
- d. Identifying the benefits of CDM operations management for IROPS and crisis management,
- e. Defining the minimum requirements for adapting/upgrading for CDM Operations Management an organization built for Emergency Operations Management,
- f. Producing guidance for developing CDM-friendly procedures on IROPS and non-standard situations,
- g. Conducting a gap assessment between the Federal and States standards and requirements for emergency/crisis management and CDM operations management.

## DELIVERABLE

The final deliverables shall include:

- A guidebook.
- Appendixes with models of procedures or checklists.

## COST AND JUSTIFICATION

The estimated funding is \$300,000.

## RELATED RESEARCH

- ACRP Report 65 – Guidebook for Airport Irregular Operations (IROPS) Contingency Planning
- ACRP Report 93 – Operational and Business Continuity Planning for Prolonged Airport Disruptions
- ACRP Report 94 – Integrating Web-Based Emergency Management Collaboration Tools into Airport Operations – A Primer
- ACRP Report 106 – Being Prepared for IROPS: A Business-Planning and Decision-Making Approach
- ACRP Report 112 – Airport Terminal Incident Response Planning
- ACRP Report 137 – Guidebook for Advancing Collaborative Decision Making (CDM) at Airports
- ACRP Report 153 – IROPS Stakeholder Communication and Coordination
  
- Collaborative Decision Making: Leadership, Strategies, Structure and Guidelines, Version 4.0, CDM Stakeholders Group (FAA/Industry), December 2014: [http://cdm.fly.faa.gov/wp-content/list\\_yo\\_files\\_user\\_folders/cdm\\_editor/cdm\\_doc/Leadership%2C%20Strategies%2C%20Structure%20and%20Guidelines%204.0.pdf](http://cdm.fly.faa.gov/wp-content/list_yo_files_user_folders/cdm_editor/cdm_doc/Leadership%2C%20Strategies%2C%20Structure%20and%20Guidelines%204.0.pdf)
  
- Airport CDM Implementation Manual Version 5, Eurocontrol, 2017: <http://www.eurocontrol.int/publications/airport-cdm-implementation-manual>
- Total Airport Management (Operational Concept & Logical Architecture), Version 1.0, Eurocontrol/DLR, 2006, <http://www.bs.dlr.de/tam/Dokumente/TAM-OCD-public.pdf>
  
- Le Bris, Airport Collaborative Decision Making and Crisis Management in Europe, AV090 Aviation Security and Emergency Management Committee, TRB 97th Annual Meeting, 2018

## IDEA CREATOR

*Person who first shared the idea with the IdeaHub community.*

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## OWNER/SUBMITTER

*Person who volunteered to be responsible for developing the idea into a problem statement.*

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