



# CDM

Collaborative  
Decision Making

**Leadership, Strategies, Structure and Guidelines**

**December, 2014**

**Version 4.0**



**CDM**  
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## CDM STAKHOLDERS GROUP ENDORSEMENT

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On Behalf of the CSG  
Creation Date: December 9, 2014

The undersigned acknowledge they have reviewed and endorsed the CDM Leadership Guide entitled CDM Leadership, Strategies, Structure and Guidelines Edition 4.0. The CDM Leadership Guide has been properly vetted and is endorsed by the CDM Steering Group.

Signature: Johnnie W. Garza Date: 12/9/2014  
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VERSION HISTORY

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1.6		01/06/2009		01/06/2009	Initial
3.1		09/09/2011		09/09/2011	Update
3.2	Steve McMahon	06/11/2012		06/11/2012	Update
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## **Background**

Collaborative Decision Making (CDM) is a joint government/industry initiative aimed at improving Air Traffic Flow Management (ATFM) through increased information exchange among aviation community stakeholders. CDM is comprised of representatives from government, general aviation, airlines, and may include other interested parties such as academia, who work together to create technological and procedural solutions to the ATFM challenges faced by the National Airspace System (NAS).

CDM traces its origins to September 1993, when the Federal Aviation Administration (FAA)/Airline Data Exchange (FADE) experiment highlighted the benefits of NAS users providing updated schedule information, allowing for improved decision making by Traffic Flow Managers. CDM Roles and Responsibilities, the cornerstone of the CDM program, were agreed to by the FAA and NAS flight operators in the spring of 1995.

CDM is an operating paradigm where ATFM decisions are based on a shared, common view of the NAS and an awareness of the consequences these decisions may have on the system and its stakeholders.

The central tenants to CDM:

- Collaborative data exchange will lead to improved decision-making,
- Tools and procedures need to be in place to enable air navigation service providers and the flight operators to more easily respond to changing conditions.
- Advance technological ATFM solutions that evolve the National Airspace System and influence global collaborative decision making for all stakeholders.

By sharing information, ideologies, and preferences, stakeholders learn from each other and build a common pool of knowledge, resulting in ATFM decisions and actions that are most valuable to the system.

## **Purpose**

CDM's goal is a safe, efficient and secure NAS that provides flight operators the flexibility to operate within their own capabilities and economic objectives. CDM transcends specific programs and is both a philosophy and a process by which to accommodate stakeholder preferences to the maximum extent possible.

## **CDM Membership**

CDM membership is available to qualified aviation related entities that meet the data-exchange criteria specified in the current FAA CDM Memorandum of Agreement (MOA). CDM Members who sign an MOA but fail to maintain the data quality requirements specified in the MOA may have their CDM membership suspended or revoked by the FAA.

## **CDM Governance and Leadership**

The CDM Stakeholders Group (CSG) is the oversight body of CDM. CSG establishes the strategic objectives for the CDM community. It provides guidelines for FAA and industry CDM interaction and engagements. It provides direction, guidance, and process to CDM sub-teams and sub-team activities. The result is an effective and collaborative government-industry communication forum that not only provides a means for enhancing the efficiency of the NAS, but also a pathway for promoting more effective management and leadership throughout the ATFM domain.

Industry members of the CSG include representatives (one primary and one alternate per organization) from the Airlines for America (A4A; who will serve as Co-Chair of the CSG), National Business Aviation Association (NBAA), Regional Airline Association (RAA), or their designee, and the current Industry Lead of the CDM program. In addition, the A4A will appoint two “at large” members to the CSG (“at large” members will not have alternates).

FAA participation is determined by the Director of System Operations (who will serve as Co-Chair of the CSG) and should include the Program Management Organization Director of Air Traffic Systems or their designee.

The purpose of the CSG is (1) to provide governance and oversight of the CDM program, (2) to assign tasking for CDM sub-teams, (3) to provide the FAA with input on prioritization and tasking to evolve the National Airspace System, and (4) to provide industry recommendations to the FAA on overall CDM priorities and activities. Appendix A of this document lays out a series of CDM Strategies and Guidelines for properly executing this process.

Leadership within the CDM program is shared by the FAA and industry; with the FAA CDM Lead being appointed by the FAA and the Industry Lead appointed by the Airlines for America Air Traffic Management Council (ATMC) with concurrence of the CSG industry members.

### **CSG Voting Procedures**

When a recommendation or motion requires a CSG vote, the vote will be tallied and recorded in the monthly meeting summary. A clear majority is required to carry a recommendation or motion.

There are a total of 6 CSG members who have voting rights and they are as follows:

FAA: CSG Co-Chair, ATCSCC Air Traffic Manager, Project Management Officer or their designees.

Industry: CSG Co-Chair, NBAA, RAA or their designees.

### **CDM Sub-Teams**

CDM Sub-teams (Appendix B) will be established, and serve at the discretion of the CSG. Sub-teams receive specific taskings from the CSG and provide input/recommendations on concept requirements and implementation. Each sub-team will have a tasking(s) in the form of a tasking paper (Appendix C) which governs the scope of their activities with established milestones and



timelines. CDM Sub-team Co-leads shall provide monthly updates on sub-team activity via the CDM Leadership Call and quarterly updates on assigned taskings to the CSG via the CSG monthly meetings.

### **CDM Sub-Team Leadership and Membership**

#### **CDM Core Members**

The FAA will select FAA members of CDM sub-teams and appoint an FAA Lead and FAA Alternate Lead based on the team objectives and the skill set requested by the CSG. Industry members of the CDM sub-teams will be selected from active CDM members as determined by CSG industry members. The CSG will also establish the sub-team Industry Leads and Industry Alternate Leads. The alternate leads should work closely with the leads to ensure leadership can be smoothly transferred should one of the leads move on to another position. These core sub-team members may be recommended by the FAA and Industry Leads and are subject to approval by the CSG. Sub-team membership must be reviewed and validated at the beginning of each fiscal year (FY).

#### **CDM Sub-Team Associate Members**

Associate membership is defined as members from academia, subject matter experts, and other disciplines as needed or requested.

#### **Use of CDM Sub-Team Associate Members**

Industry sub-team memberships are limited to CDM participants. However, on a case-by-case basis, sub-team Leads may request non-CDM members to act as Subject Matter Experts (SMEs) on specific topics.

CDM sub-teams may request FAA SMEs for specific topics, and participation of FAA SMEs must be requested and approved by the FAA CDM Manager. Requests for FAA SMEs should be submitted via email to the FAA CDM Manager **no later than 60 days prior to the date needed**. The requesting official should include a description of the project tasking, knowledge, skills and abilities relevant to the project. A respond by date should also be provided.

The FAA CDM Manager responds to the requesting official with the list of FAA SMEs. The requesting official will review the list and coordinate sub-team participation, as necessary, with the SME's supervisor and the FAA CDM Manager.

### **Planning and Meetings**

Sub-Team Meeting Agendas must be provided to the CDM Co-Leads two weeks prior to each sub-team meeting. The meetings should have clear objectives with agendas that define meeting goals and discussion topics for all participating attendees. Sub-team meetings should result in actions from sub-teams (i.e. tasking requests, recommendations for new procedures, etc.). Notes should be taken at each Sub-team meeting and posted to their respective locations on the CDM web site.

CSG Co-Chairs, CDM Co-Leads, Sub Team Co-Leads shall host semi-annual meetings to discuss the direction of CDM as well as the current activities of the sub-teams. Monthly

Leadership Telcons will also be held by this group to maintain communication and interaction among the sub-teams.

If travel is required for a meeting, FAA employees must obtain approval via FAA established policies and procedures. It is the responsibility of the sub-team FAA Leads to ensure travel requests are submitted in a timely manner.

### **CDM Tracker**

The CSG will maintain a “CDM Tracker” matrix which will record, at a minimum, the following information on each CDM task:

- Tracking #
- Originator / Date Submitted
- Sub-team Brief Title
- Description
- CSG Action Item / Owner
- Status
- Due Date
- Links, as required

The CSG Tracker is updated via monthly CSG Meetings.

The CSG will also facilitate additional opportunities to collect and capture thoughts and ideas for potential tasking.

### **Technical Interchange**

Technical exchange meetings may be held with interested CDM participants to enhance their understanding of CDM initiatives prior to implementation.

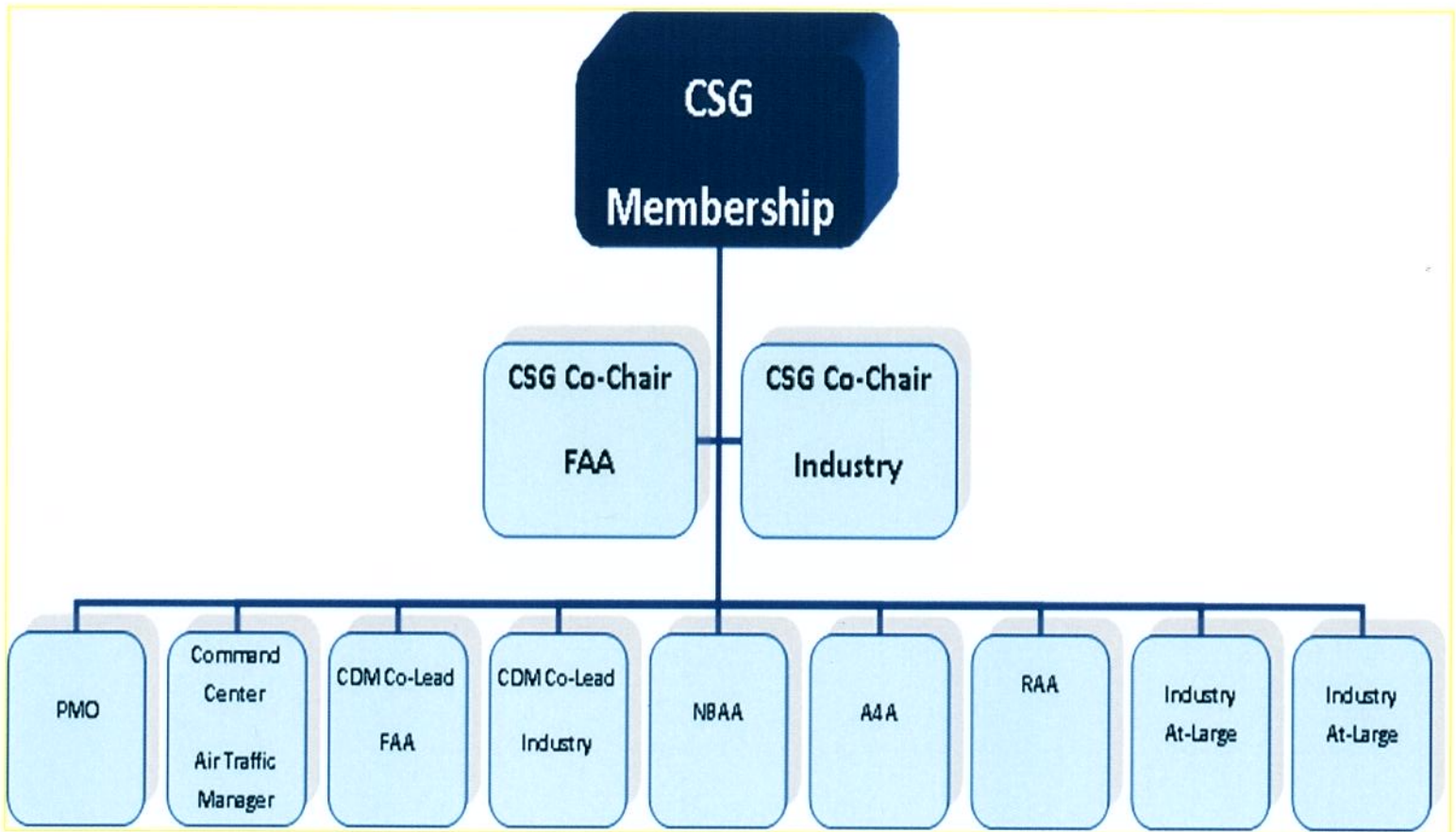
### **CDM Glossary of Terms and Acronyms**

Provided at the following link is a listing of common CDM terms and acronyms.

<http://cdm.fly.faa.gov/acronyms.htm>



Appendix A: CSG Membership



## **Appendix B: CDM Strategies and Guidelines**

1. Develop a “Strategic” Plan (2-5 years) that is in agreement with FAA and Industry areas of focus and that has been mutually agreed upon. The plan should include goals and work breakdown by subgroup, travel budgets, milestones, and integrated schedules with dependencies (see next bullet). Each sub-team would be responsible to update their sections and ensure they comply with the Strategic Plan.
2. Develop and maintain an integrated schedule with dependencies that includes the work of all sub-teams and outside stakeholder organizations to the extent they impact the work of CDM. (See Appendix D – Issue Tracker)
3. Prioritize work in order to focus limited FAA and Industry resources on those items that will result in the most benefit for the majority of customers and result in greater system efficiencies. Move other items off the table to “Parking Lot” for future consideration.
4. Where it makes economic sense and meaningful work can be accomplished, encourage the sub-teams to meet outside of the “breakout” structure and utilize telcons and virtual meeting technologies.
5. Set agendas at two weeks prior to each meeting and provide to the FAA and Industry CDM Leads.
6. Formalize the decision making process. Sub-teams should present recommendations to the CSG (with backup materials) for acceptance.
7. Standardize the sub-team reporting process (see Appendix C below)
8. At least one CDM meeting per year should take the form of an annual general business meeting to assess accomplishments and refocus/redirect energies to changing conditions. This meeting would also get buy-in to any changes/updated to the Strategic/Tactical Plans and kickoff the Tactical Plan work for the coming year.
9. Ensure follow-up is performed on all new technology and functions to ensure they are performing as expected.
10. Each sub-team should maintain and share lessons learned. The CSG will conduct at joint meeting with all sub-team leads at least twice annually.
11. Ensure training is not overlooked in the deployment of new capabilities. Resources are needed to ensure this is done in a way that maximizes the benefits of the new capability.



## **Appendix C: CSG Sub-Teams**

Sub-Teams currently authorized by the CSG include the following:

### **Flow Evaluation Team (FET)**

The Flow Evaluation Team will strive to increase system efficiency by reducing route coordination time and enhancing system planning through the creation of common situational awareness of potential route alternatives, procedures, and coordination processes. Some of the team projects include but are not limited to Tactical Customer Advocate (TCA), Diversion Recovery, Pathfinder, Early Intent, FCA/AFP routing improvements, and Domestic Route Generation schemes in support of system planning.

### **Weather Evaluation Team (WET)**

The overall role of the Weather Evaluation sub-team (WET) is to serve as the primary point-of-contact for feedback and recommendations on weather products. In general, the WET has been tasked to: (1) act as the SME for weather integration ATC/CDM tools; (2) provide external outreach to weather products developers and researchers; (3) provide internal coordination with CDM sub-teams on weather related issues.

### **Future Concepts of Flow Management (FCT)**

This working group was formed to address longer term CDM/ATFM capabilities' integration and an operational concept of using data, procedures and concepts. The team is charged with the exploration of combinations of concepts and capabilities identified through the CSG as well as other venues and the development of enhanced CDM tools.

### **CDM Training Team (CTT)**

This Team will focus on CDM orientation and coordination with the ATCSCC Training Department for implementation of training needs for all relevant CDM products. They also coordinate training requirements for Industry. Training Facilitation Team principles include: (1) be as inclusive as possible in developing training curriculum; (2) give all NAS users the opportunity to have common situational awareness of current CDM training products and procedures by way of a CDM training distribution center; (3) set timelines to comply with CDM annual training, (S2K+9) and fast track training as it is developed to the extent possible; (4) conduct status checks with all CDM leads (latest CDM developments and projected implementation dates); (5) review and respond to critiques from NAS users and instructors in the field.

### **Surface CDM System Team (SCT)**

This team was formed to leverage the findings of the previous Surface Management Working Group (SMWG) and the Eurocontrol and Eurocae WG69 'Airport CDM' policies. The scope is to be limited to requirements that support a prototype initial 'Surface CDM' solution at a selected airport. The success criteria for the SCT are to develop a written description of base requirements and processes that would support a prototype Surface CDM System (SCS). The system will provide pertinent surface CDM data into the Traffic Flow Management System at a single airport.



**CDM Automation Team (CAT)**

The CDM Collaborative Automation Team is tasked with reviewing current Traffic Flow Management System (TFMS) capabilities and determining if they still meet systemic needs and defining what, if any, changes or enhancements are desired. The CDM Steering Group (CSG) has specifically tasked the new team with reviewing the current processes in the assignment and management of delay program slots to determine if they meet current operations analysis, post event analysis, and flight operator needs; and providing recommendations for ways in which they can be enhanced to provide for current systemic needs. Additionally, the CSG has tasked the team to explore the use of Traffic Management Advisor/Time Based Flow Management scheduling times in TFMS, and to make recommendations for the use of TBFM information within TFMS.

## **Appendix D: CSG CDM Sub-Team Tasking Form**

**Task Name:**

**Task Sponsor:** [CSG or Supporting Organization]

**Date:**

**Submitter:** [CSG or Requesting Organization]

**Situational Assessment and Problem/Need Statement:**

[Historic, current and future opportunities related to operational performance, customers and their needs, employees and/or industry and market trends.]

[Describe the problem as it exists today, the intended future state and consequences of status-quo.]

**Project Description and Scope of Work:**

[Project deliverables with a time line of events, which includes milestones and percentage of completion markers.]

[Period of Performance: identifiable checkpoints or metrics indicating progress and estimated length.]

[Define dependencies; entry and exit criteria.]

**Critical Assumptions and Risk Management:**

[Factors assumed to be true or anticipated to be in place for the task to be completed.

Strategies to manage the risk of assumptions not being realized, control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.]

**Line of Vision:**

[Describe how the task is part of the larger vision and the organization's core strategies.

What FAA and System Operations Business Plans goal will this task support? How does the task align and support the FAA NextGen Implementation Plan?]

**What contract vehicles are available to fulfill the task?**

[Mechanisms to support the task.]

## **Appendix E: CSG CDM Sub-Team Charter Form**

### **Situational Assessment and Purpose Statement:**

[Historic, current and future opportunities related to operational performance, customers and their needs, employees and/or industry and market trends.]

[Problem to be addressed and expected result.]

### **Mission and Objectives:**

[What the team must achieve; including measurable goals and timelines.]

[Teams will usually be chartered for a period of two (2) years, after which the CSG will perform a needs assessment for charter extension or sub-team disbanding.]

### **Composition, Roles and Communication:**

CDM Sub-teams are established and serve at the discretion of the CSG. Sub-teams receive specific tasking from the CSG and provide input/recommendations on concept requirements and implementation. CDM Sub-team composition, roles and communication requirements are detailed in the “Collaborative Decision Making: Leadership, Strategies, Structure and Guidelines” manual.

### **Expectation of Team Members:**

[Attendance, participation and general courtesy and respect.]

### **Resources and Support:**

[Resources available to the team to accomplish its goals.]



## Appendix F: Summary Report Template

[Sub Team Name]  
[FAA Lead Name]  
[Industry POC Name]

### **Situational Assessment and Problem/Need Statement:**

Historic, current and future opportunities related to operational performance, customers and their needs, employees and/or industry and market trends. Describe the problem as it exists today, the intended future state and consequences of status quo.

### **Project Description:**

Describe the objectives of the project (CSG Tasking).

### **Research and Analysis:**

Status of the team's progress to date in relation to the Problem Statement, objectives and CSG Tasking Scope of Work.

**\*\*Expected outcomes replace Analysis as the project matures\*\*\*\*\***

### **Outcome Overview:**

Define the desired end-state solution from the viewpoint of the organization receiving the benefits.

- for example, the solution as viewed through the eyes of the customer if the goal is to improve customer service
- clearly defined goals i.e., "reduce taxi out times to 10 min or less, predict convective activity with 70% or greater reliability, single-sourced central information system/or SWIM includes xxx by consolidating information in the following existing systems xxx"

### **Outcome Detail:**

Detail all aspects of the strategy

- The organization, people, responsibilities, skills etc.
- The processes
- The support systems

Alternatives examined.

Implications to the stakeholder community if the project is not implemented.

\*\*\*\*\*

### **Benefits:**

Explain how the project furthers the organization's mission and goals, and categorize benefits into groups for ease in understanding. Benefits may be tangible and/or intangible.

### **Implementation Strategy:**

Detail each major step in the implementation process, including development, testing, training, procedures, initial implementation and deployment.

Critical Assumptions and Risk Management

List all project plan assumptions, including factors assumed to be true or anticipated to be in place for the task to be completed. Discuss the risks of the implementation plan and highlight

strategies to manage the risk of assumptions not being realized. Discuss the steps that will be taken to minimize or mitigate each risk. Discuss the impact to the stakeholder community if the expected benefits from the project do not come to fruition.

**Conclusion and Recommendation:**

This should summarize the issues and characterize the anticipated benefits of the solution. Convey a sense of urgency and re-iterate the goal of the solution.

Candidate requirements or suggested tasks for CSG review may also be included.

## **Appendix G: FAA Travel Guidance**

FAA Travel Policy

[https://employees.faa.gov/tools\\_resources/travel/](https://employees.faa.gov/tools_resources/travel/)

Travel Charge Card Information

[https://employees.faa.gov/tools\\_resources/travel/charge\\_card/](https://employees.faa.gov/tools_resources/travel/charge_card/)

eLMS

(302000178) Gov Trip

(30200114) Travel Charge Card: Cardholder Training

GovTrip

<https://govtrip.com>

ATCSCC Travel Process:

- 1) Employee completes the appropriate Travel Authorization Form; ATCSCC for Command Center personnel and System Operations for all other FAA personnel.
- 2) Employee should identify the correct manager/office funding the travel request (Staff Manager and NOM travel is approved through Anthony Tisdall, all CDM travel is approved by Frank McIntosh) and send the form to April Plummer.
- 3) Once the request has been approved on all levels, a copy of the signed approval will be sent to the traveler along with the proper accounting code.
- 4) The employee creates an authorization in GovTrip.
- 5) If the employee works outside the Command Center they must send a copy of both their authorization and voucher to the travel coordinator (April Plummer).
- 6) If the traveler does not work at the Command Center a request is made for the employee to send a copy of their voucher within 5 working days after they return from travel.