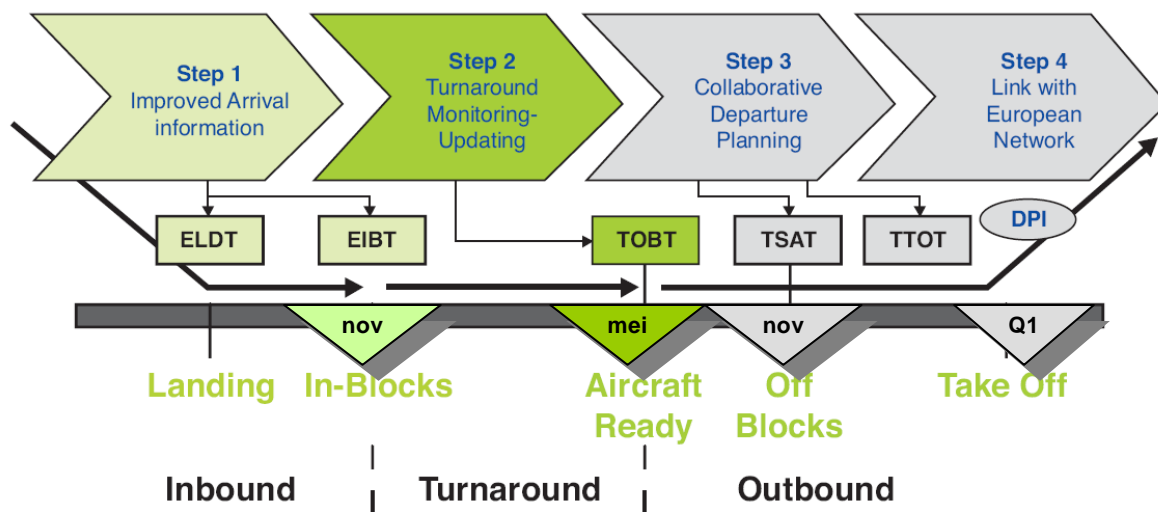


# CDM Protocol

## Version 2 – May 2011



De belangrijkste planningsmilestones van het CDM-proces

**DOCUMENT CONTROL**

**Edition history**

<b><i>Edition N°</i></b>	<b><i>Effective date or status</i></b>	<b><i>Author(s)</i></b>	<b><i>Reason</i></b>
0.9	7-Dec-2010	De Brauw (CDM Legal) E. van Zuijlen (AAS)	Final Draft for CDM IB meeting 10 December 2010, based on working material & action items
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2.0	10-May-2011	E. van Zuijlen (AAS)	Updated to effective versions CDM Procedures

**Approval**

<b>Name</b>	<b>Position</b>	<b>Signature</b>
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## 1 Introduction

Effective collaborative decision making is not possible without an accurate overview of the Schiphol operation in tools that are made available to all CDM partners. Next to existing CISS AODB, a common Schiphol CDM portal has been developed as an essential part of the Schiphol CDM program based on the following<sup>1</sup>:

1. Provide all CDM partners with complete and reliable information;
2. Create **common situational awareness** on actual and expected airport situation;
3. Decision support tool enabling individual- and collaborative decision making;
4. Alerting mechanism when deviating from an earlier (collaborative) planning;
5. As an enabler for specific collaborative procedures and operating principles.

Basic functional data requirements have been agreed based on earlier projects, including basic needs that were identified by all partners. The principle “Keep it simple, make it smarter” was applied as a generic rule in determining the final CDM data requirements.

In December 2010, a dedicated CDM Chapter has been inserted the formal Schiphol Rules, effective December 2010; this high level CDM Chapter refers to this CDM Protocol for all further details. [Untill Q1-2012](#), the CDM Program will be completed, which will result in one or more updates of this CDM Protocol, to be agreed under Governance procedures, see Chapter 9.

## 2 Purpose

The CDM chapter in the Schiphol Rules (available at [www.schiphol.nl](http://www.schiphol.nl) & [www.schiphol-cdm.nl](http://www.schiphol-cdm.nl)) specifies all generic terms and conditions for the effective operation of CDM at Schiphol Airport. The purpose of this document, the CDM Protocol, to which these Schiphol Rules refer to, is to specify the detailed technical requirements for CDM Data, the Internet & Security Protocols, the change procedures and the final governance of CDM Operations after finalisation of the CDM program [during 2012](#).

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<sup>1</sup> Based on results of CDM Hub project 2007-2008, the Schiphol Gap analyses by Eurocontrol & Airport CDM Implementation manual by Eurocontrol

### 3 List of Airside Customer Data, CDM Data and CDM Portal Data

The table below lists the Airside Customer Data, LVNL Data, CDM Data and CDM Portal Data; it also refers to related CDM Procedure (see [www.schiphol-cdm.nl](http://www.schiphol-cdm.nl) for details) and effective date

General				CDM Protocol						
Type	Req. ID	Name	Abbreviation	Key Supplier	Airside Customer Data	LVNL Data	CDM Data	CDM Portal Data	CDM@AMS Procedure	Effective under CDM@AMS
Common for inbound & outbound	P1.1	Flight Identification	FLTID	LVNL		x	x			Q4-2010
	P1.2	Aircraft Registration	ACREG	AO	x		x	x		Q4-2010
	P1.3	ICAO Aircraft Type	ACTYPE	AO	x		x	x		Q4-2010
	P1.4	ICAO Aircraft Operator	AO	AO	x		x	x		Q4-2010
	P1.5	ICAO Call Sign	ICAOCSGN	AO	x		x	x		Q4-2010
	P1.6	IATA Call Sign	IATACSGN	AO	x		x	x		Q4-2010
	P1.7	Flight State	FLTST	AAS				x	x	3A.3, 3B.2 & 3C.1
Inbound	P1.8	Assigned Landing Runway	LRWY	LVNL		x	x	x		Q4-2010
	P1.9	Aerodrome of Departure IATA	IATAADEP	AO	x		x	x		Q4-2010
	P1.10	Aerodrome of Departure ICAO	ICAOADEP	AO	x		x	x		Q4-2010
	P1.11	Flight Diverted To	FLTDIVTO	AO	x		x	x		Q4-2010
	P1.12	Flight Diverted From	FLTDIVFR	AO	x		x			inactive
	P1.13	Estimated Landing Time	ELDT	LVNL	x	x	x	x	1.3	Q4-2010
	P1.14	Actual Landing Time	ALDT	LVNL		x	x	x	5.1	Q4-2010
	P1.15	Scheduled In Block Time	SIBT	AO	x		x	x		Q4-2010
	P1.16	Estimated In Block Time	EIBT	LVNL		x	x	x	2.2	Q2-2011
	P1.17	Actual In Block Time	AIBT	LVNL		x	x	x	6.1	Q4-2010
	P1.18	Estimated FIR Arrival Delay	EFAD	LVNL		x	x			Q4-2010
	P1.19	Stack Reporting Point	STAR	LVNL		x	x			Q4-2010
	P1.20	FUM Flight State	FUMFLST	CFMU		x	x			Q4-2010
P1.21	Arrival Parking Stand	APRK	AAS			x	x		Q4-2010	
P1.22	Arrival Gate	AGATE	AAS			x			Q4-2010	
Turn-around	P1.23	Main Ground Handling Agent	MGHA	AO	x		x			Q2-2011
	P1.24	Actual Start Boarding Time	ASBT	GH	x		x			Q2-2011
	P1.25	Minimum Turn-round Time	MTT	MGHA	x		x		8.1	Q2-2011
	P1.26	Scheduled Off Block Time	SOBT	AO	x		x	x		Q2-2011
	P1.27	Estimated Off Block Time	EOBT	AO	x		x			Q2-2011
	P1.28	Target Off Block Time	TOBT	MGHA	x		x	x	7.2	Q2-2011
	P1.29	Actual Off Block time	AOBT	LVNL		x	x	x	13.1	Q2-2011
	P1.30	Target Aircraft On Position Time	TAOP	ibd						postponed
	P1.31	Departure Parking Stand	DPRK	AAS			x	x		Q4-2011
	P1.32	Departure Gate	DGATE	AAS			x			Q4-2011
Outbound	P1.33	Assigned De-icing Position	ADIP	GH	x		x		12.1	Q4-2011
	P1.34	Estimated De-icing Time	EDIT	GH	x		x		12.1	Q4-2011
	P1.35	De-icing Waiting Time	DIWT	GH	x		x		12.1	Q4-2011
	P1.36	Actual De-icing Time	ADIT	GH	x		x			ibd
	P1.37	De-icing Status	DICS	GH	x		x			Q4-2011
	P1.38	Assigned Take Off Runway	TRWY	LVNL		x	x	x		Q4-2011
	P1.39	Aerodrome of Destination ICAO	ICAOADES	AO	x		x	x		Q4-2011
	P1.40	Aerodrome of Destination IATA	IATAADES	AO	x		x	x		Q4-2011
	P1.41	Calculated Take Off Time	CTOT	CFMU		x	x			Q4-2011
	P1.42	CTOT State	CTOTST	CFMU		x	x			Q4-2011
	P1.43	Target Start-up Approval Time	TSAT	LVNL		x	x	x	10.1	Q4-2011
	P1.44	Actual Start-up Request Time	ASRT	LVNL		x	x		15.1	Q4-2011
	P1.45	Estimated Take Off Time	ETOT	LVNL		x	x			Q4-2011
	P1.46	Target Take Off Time	TTOT	LVNL		x	x	x	10.1	Q4-2011
	P1.47	Actual Take Off Time	ATOT	LVNL		x	x	x	14.1	Q4-2011
	P1.48	Standard Instrument Departure	SID	LVNL		x	x			Q4-2011
	P1.49	ICAO Standard Instrument Departure	ICAOSID	LVNL		x	x			Q4-2011
	P1.50	Estimated taxi Out Time	EXOT	LVNL		x	x			Q4-2011

**Note 1:** CDM Flight Info Elements specified in GREEN have been available in CISS3 AODB since 2007

**Note 2:** In version 3 of the CDM Protocol (Q3-2011) the Outbound CDM Flight Info Elements will be specified; 9 May 2011 the proposed Procedures for step 3 have been approved by the CDM Implementation Board, with a selection to become effective as of 18 Nov 2011.

#### 4 Third parties that receive CDM Data

The following parties receive CDM Data:

- Luchtverkeersleiding Nederland
- Schiphol Nederland BV
- KNMI
- EUROCONTROL
- EU Single European Sky PERFORMANCE REVIEW BOARD
- CAA-NL (Ministry van Infrastructure & Environment)
- NSA-NL (Inspection of Infrastructure & Environment)
- ...

**Note:** This list is not extensive yet and will be completed with third parties for version [3](#)

## 5 Technical requirements for end user Equipment

Technical requirements necessary for the Airside Customer or other party entitled to access the CDM Portal (Customer) to access the CDM Portal.

The following pre-requisites are required for a Customer and work station to operate the CDM Portal System:

### Public internet connection

- The CDM Portal System is made available via the public internet. Therefore the CDM Portal user and workstation must have access to an open internet connection.

### Secure internet connection

- The CDM Portal System is made available via a secure internet connection. Therefore the CDM Portal user and workstation must have access to open internet connection, which allows the setup of https secured connection.

### Browser support

- To operate the CDM Portal System it is recommended:
  - (i) for user and workstation to use Microsoft Internet Explorer version 7 or higher
  - (ii) as an alternative browser Firefox 3.6 or higher will be supported
  - (iii) for user and workstation to use a minimum display resolution of 1024x576

**Note:** This list of technical end user requirements might be extended for version [3](#), where needed, based on guidance of the CDM ICT Board

**6 Service Levels regarding provision of CDM Data via the CISS connection**

**[empty]**

**Note:** this section will be inserted and & completed, where needed, based on existing individual CISS Data Exchange bilateral agreements, guidance of the CDM ICT Board and necessary summary of details from ICT Interface Control Documents.

## 7 Service levels regarding remote access to the CDM Portal Data

Requirements for CDM Portal version 1 and outlook to future requirements

The availability percentage for the CDM Portal System v1.0 shall be initially 7x10hrs, 95% per year.
The CDM Portal is not yet categorised as a business critical system. Therefore the availability percentage has been set accordingly, on a growth path to an end goal availability level of 99.5% in due time.
The CDM Portal System shall be designed in such a way, that the system shall be able to scale the availability level to 7x24, 99.5% per year

The CDM Portal System must be available 24 hours per day (excluding planned maintenance). Down time during maintenance window is not considered as unavailability. When necessary, planned maintenance shall take place every second Tuesday night of the month (July and August excluded due to change freeze) and will take place between 02:00h and 04:00h.

- 7.1 The CDM Portal System has a separate development, IT testing/user acceptance and production environment. Interfaces will be designed to minimise/mitigate the possibility of adverse effects to other systems.
- 7.2 The CDM Portal provides online documentation. This is to support the use of the application with a learning curve of less than 8 hours and to reduce the calls to the help desk for questions about how to operate the Portal.
- 7.3 ICT Support shall be available 24h/day when decided that this is necessary by CDM Portal Functional Owner AAS (Airside Ops) in coordination with AAS ICT as the service provider.
- 7.4 The Airport CDM Portal System uses the Network Time Protocol (NTP) as a reference time standard.

**Note:** This section might be extended & completed for version [3](#), where needed, based on guidance of the CDM ICT Board

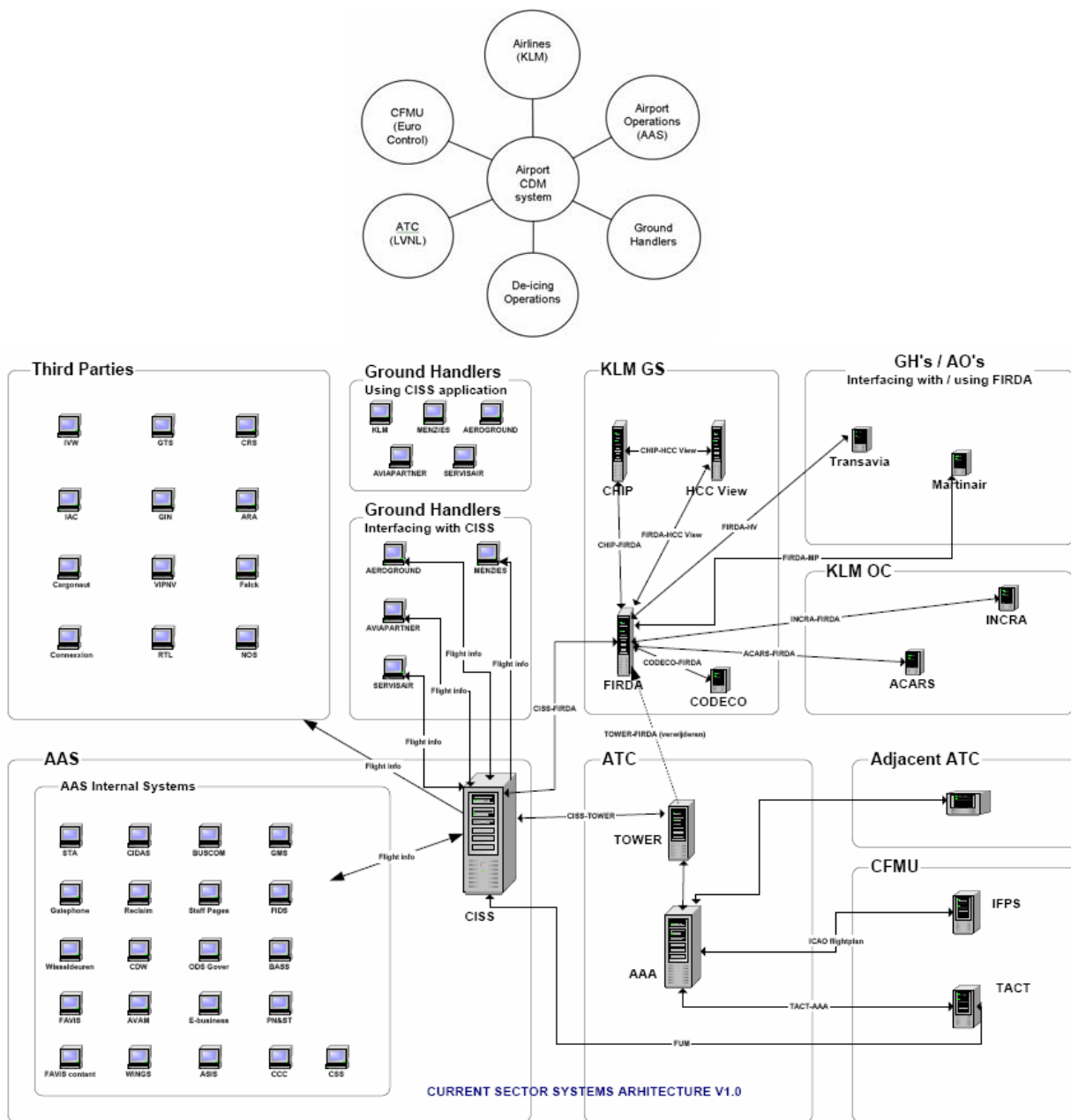
**8 Procedure for interrupting the provision of CISS and the CDM Portal for maintenance, testing or security purposes**

[empty]

**Note:** this section will be inserted & completed for version **3**, based on the Service Level Agreement between Schiphol ICT and the CDM Supportdesk (operated by Schiphol OPS/AO/APC), and based on guidance of the CDM ICT Board

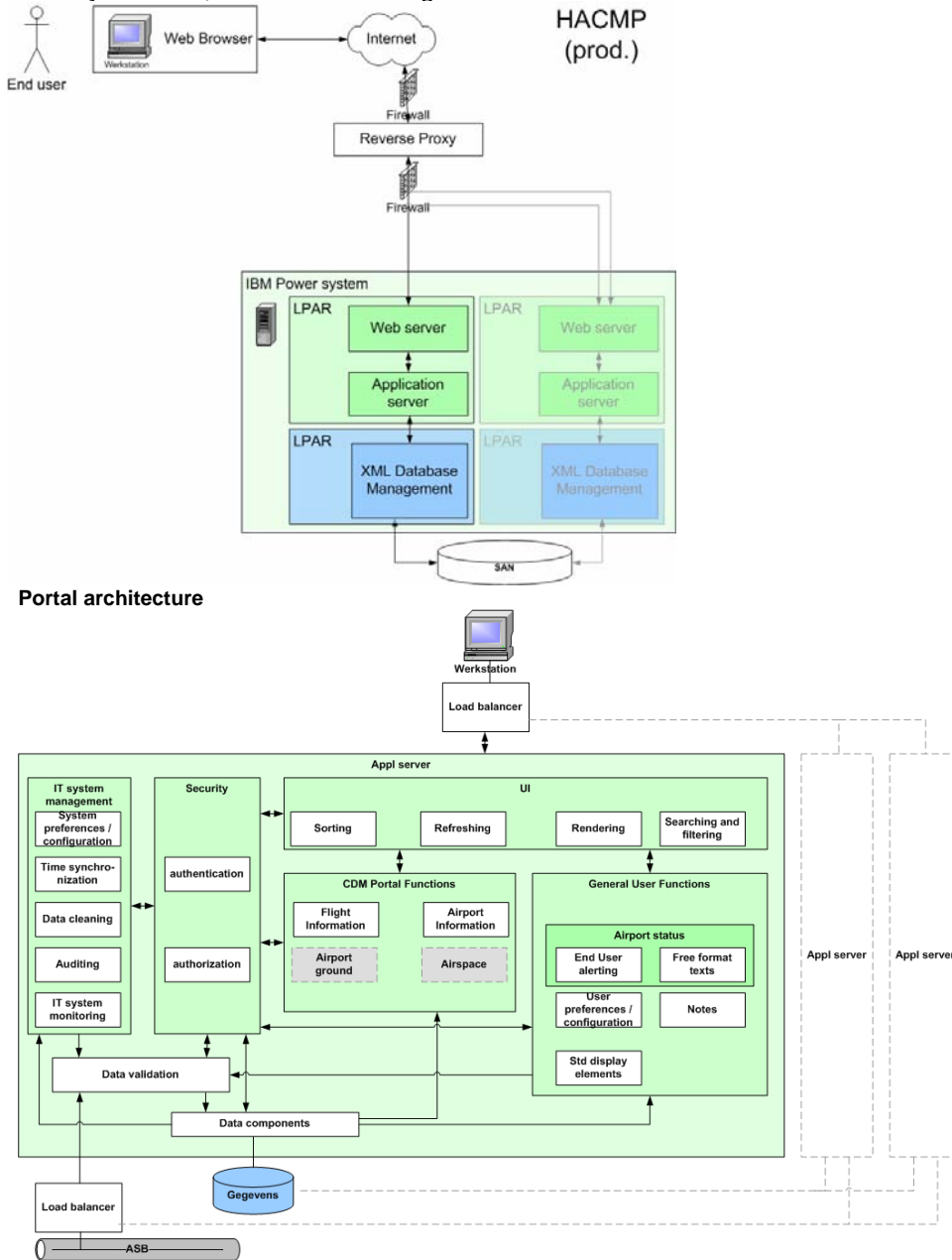
9 CDM Transmission Control Protocol

The graphical overview below illustrated the first version of this CDM Transmission Protocol, which falls under governance of the CDM ICT Board



**10 CDM Internet and Security Protocol**

The graphical overview below illustrates the CDM Portal High Level architecture, incl Internet & Security Protocol, which falls under governance of CDM ICT Board.



## 11 Airport CDM Governance Procedure

As the joint implementation program for Airport CDM at Schiphol Airport (**CDM Program**) has not been completed yet, the governance procedure as in force for the CDM Program will remain in place until such time the CDM Program has been completed (expected end date December 2011), it being mentioned, however, that SAOC will also be represented in the Boards.. This governance procedure is set out in the Memorandum of Understanding, signed on 23 October 2009 (**MOU**).

Part of the CDM Program, will be to finalise this CDM Protocol including the governance procedure for Airport CDM, as well as related protocols like the Security Protocol, the Transmission Control Protocol & the Internet Protocol (**see Chapter 9 & 10**), and possible protocols required for purposes of the proper functioning of Airport CDM. The parties to the MOU will in particular discuss and decide in good faith on a governance procedure for Airport CDM ultimately before end of the [third](#) quarter 2011, based on the starting points as set out in **Annex I**.

## Annex I

- Three “boards” will be in place for the various levels of (preparation of) changes and decisions: Steering Board, Operations Board and CDM Operations Cell.
- Members of the Boards: [representatives of ] Airport Operator, KLM as the main hub carrier, LVNL, and SAOC (represented by an airline or representative other than KLM) respectively. The Steering Board will further be chaired by the Director of Airport Operations who will also be a Member.

Level / Meeting	Meeting frequency	Main Content
Steering Board	Quarterly (or sooner as required by one of the Members)	Review of quarterly Airport CDM performance report, final decision on Airport CDM Changes and issues escalated by the Operational Board
Operations Board	1 x per month (or other frequency as agreed upon by the Members)	Review of [monthly] KPI reports on Airport CDM, preparation of quarterly Airport CDM performance report for Steering Board, identifying and discussing Airport CDM Changes and preparation of proposals in respect thereof for Steering Board approval, final decisions on Operational Changes, resolution of issues escalated by the CDM Managers Board.
CDM Operations Cell	1 x per week (or other frequency as agreed upon by the Members)	Day to day management of operations of Airport CDM, preparation of [monthly] KPI reports on Airport CDM for Operational Board, preparation of proposals Operational Changes for approval Operational Board, (first line) resolution of disputes and issues.

- An ICT Board and Advisory Group will be in place for the coordination and checking of operational feasibility.
- Decisions by the respective Boards shall be made unanimously. Any unresolved issues in the CDM Operations Cell will be escalated to the Operations Board, any unresolved issues in the Operations Board will be escalated to the Steering Board.
- In case the Steering Board cannot come to a decision, the dispute may be escalated by any Member to the executive level of the Members.
- Each Member’s attendance to the board meetings is mandatory.

- Each Member shall appoint a substitute for each nominated representative who shall perform the functions of such representative when that representative is not able to do so.
- Each Member's nominated representative and its substitute shall have sufficient authority, skill and knowledge to perform the tasks assigned to such representative, including but not limited to sufficient authority to be able to act and take decisions on behalf of their organisation, and to be able to give or receive information required by the other Members.
- Each Member may invite other personnel of its organisation to a Meeting to give additional information directly related to the agenda of that particular Meeting. Such Member will inform the other Members thereof in advance of the Meeting.
- The governance procedure shall contain a procedure for proposing and processing
  - (i) operational changes that do not require amendment of the CDM protocol and other related Protocols (**Operational Changes**)
  - (ii) changes to the CDM Protocol and other protocols required for CDM Airport (**Airport CDM Changes**) as required to implement (expected) legal requirements applicable to any of the Members or as requested by any of the Members.
- Each Member will bear its own costs relating to participating in the governance procedure, including (but not limited to) any costs of external advisors.