ICAO

Organización de Aviación Civil Internacional (OACI)
International Civil Aviation Organization (ICAO)

Proyecto Regional RLA06/901
Regional Project RLA06/901

SURVEY REPORT

AIRPORT COLLABORATIVE DECISION MAKING IN THE SOUTH AMERICAN REGION

(Forwarded to SAM States by State Letter SA5508 dated August 7, 2019)

Version 1.1
Date: 03/Dec/19

Airport Collaborative Decision Making in the SAM Region (SAM A-CDM)
Survey Report

Table of Contents

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Revisions

Version	Date	Reviewer	Comments
1.0	21/Nov/19	Fabio Salvatierra/ICAO SAM	New document translated from Spanish version.
1.1	03/Dec/19	ICAO SAM DRD	General comments

Airport Collaborative Decision Making in the SAM Region (SAM A-CDM)
Survey Report

Introduction

Purpose of this document

The purpose of this document is to:

1. 1. Summarize the results of the survey sent to the States of the ICAO South American Region through note SA5508 "Survey on A-CDM SAM Region", which seeks to provide an overview of the status of implementation of A-CDM, level plans from airport and;
2. Provide conclusions on the survey results, where applicable.

Structure of the document

The document is dived into this "Introduction Section" and the "Survey Results" section that provide the summary as per the questions areas in the survey, i.e.:

- Approach To A-CDM Implementation
- Status of A- CDM Implementation
- A-CDM Project Scope
- Local Concept of Operations
- Stakeholder Engagement
- Project Implementation
- Training
- Challenges

Results

General description

The overall summary is:

- The survey was sent to 14 Member States of the ICAO South American Region, including French Guiana.
- 10 SAM States / Administrations (Bolivia, Brazil, Chile, Colombia, Ecuador, Panama, Paraguay, Peru, Uruguay and Venezuela) responded to the survey (71.4% total)[1].
- At the last GREPECAS Program and Project Review Meeting (PPRC / 5), the Meeting approved a new project for the implementation of the ACIS Information Sharing Platform, a fundamental part of the implementation of the B0 / A-CDM
- The Project proposes to support States in the implementation of ACIS in selected aerodromes by allowing personalized operating procedures, sharing experiences, best practices and lessons learned about the implementation of ACIS procedures / tools, training and the definition of phraseology for the implementation of ACIS in accordance with ICAO Doc 4444 and Doc 9971.

[1] *The SAM Office will continue to collect information on everything from States at risk of capacity problems in the near future*

- The selected aerodromes will be based on complexity (hub or O / D, environmental conditions, limitations, etc.) and traffic. According to ICAO iStars, the 5 main airports in the SAM Region are:

Rank	State	City	Airport name	ICAO Code	Departures 2018	Passengers 2018
1	Brazil	Sao Paulo	Guarulhos Intl.	SBGR	135307	38M
2	Colombia	Bogota	El Dorado Intl	SKBO	135018	30.9M
3	Peru	Lima-Callao	Jorge Chavez Intl	SPIM	91697	20.6M
4	Chile	Santiago	Arturo Merino Benitez Intl	SCEL	76773	21.4M
5	Panama	Panama City	Tocumen Intl	MPTO	69600	15.6M

- Similarly, those States that have significant traffic forecasts or have saturation problems can take advantage of the benefits of implementing the concept.
- The following table presents a summary of those airports where the implementation is under execution.
- The legend of the table is as follows:
    - A value of “0” in the year is that the survey was answered, but no data was given or no specific date
    - A “TBD” value means that the survey is still to be answered

Member State	Airport	Year
Argentina		TBD
Bolivia	**Viru Viru**	0
Brasil	**Aeroporto Internacional De Guarulhos - SP**	2020
	Aeroporto Internacional Tancredo Neves (Confins) - BH	2022
	Aeroporto Internacional Tom Jobim (Galeão) – RJ	2023
	Aeroporto Internacional de Brasília -DF	2024
Chile	**Aeropuerto Arturo Merino Benítez - Santiago**	2020
Colombia	**Aeropuerto Internacional El Dorado**	2020
Ecuador		0
Guyana Francesa		TBD
Guyana		TBD
Panamá	**Aeropuerto Internacional de Tocumen**	2015
Paraguay	**Silvio Pettirossi SGAS**	2025
Perú	**Lima**	2021
	Cusco	2021
Suriname		TBD
Uruguay	**Carrasco**	2021
	Laguna del Sauce	2021
Venezuela		0

Approach to A-CDM Implementation

The question related to this subject aims to get a better understanding what the approach is when implementing A-CDM.

Is the the A-CDM implementation a national/project or local airport-by-airport project?

NOTE: The data set for this question includes replies from 11 states (for details see explanation in the "Overview"). The pie chart presents both absolute values and percentage values.

The results (see Figure 1) clearly show that a majority (67%) of respondents have a plan on how A-CDM will be implemented from the point of view of how the program / project should be managed, which is good.

For States that do not yet have a plan (33%), it is important to note that the average implementation time for A-CDM is 2 and a half years (according to European implementation data).

Figure 1: results to question 1

Status of A-CDM Implementation

The question related to this subject aims to get a better understanding in which phase the airports are in their A-CDM implementation.

In which of the following phases is the A-CDM implementation?

NOTE: The data set for this question includes 7 states. The pie chart presents absolute values and percentage values.

The results show (see Figure 2) that there are mixed levels of maturity in relation to the implementation status of an A-CDM program / project.

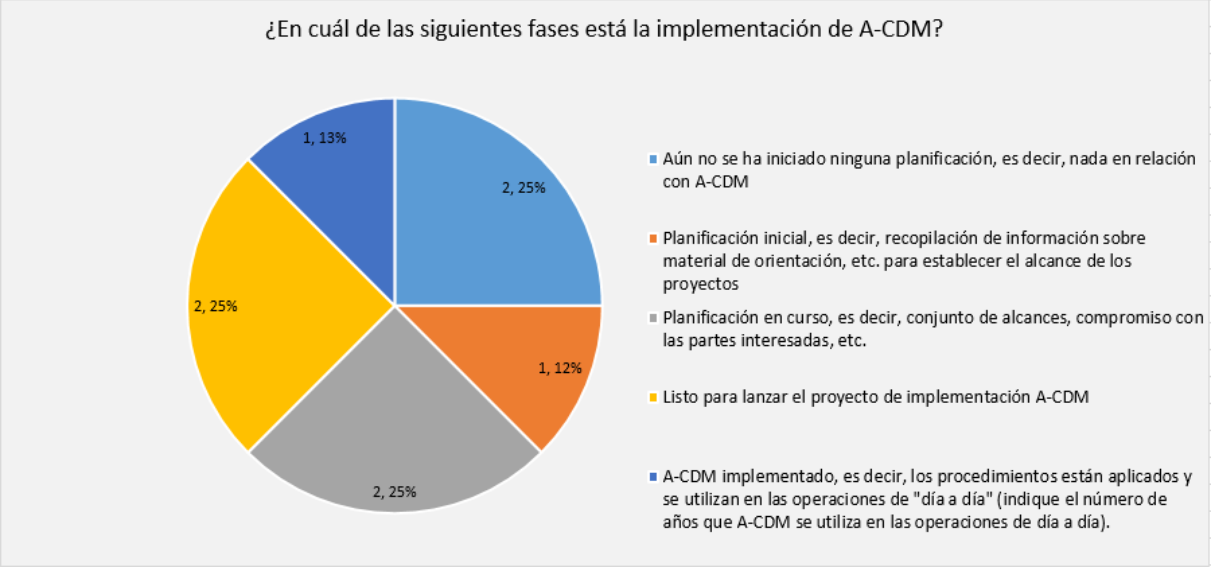

Figure 2: results on question 3

A-CDM Project Scope

The questions related to this topic are aimed at obtaining a better understanding of the scope of the implementation of A-CDM.

Which one of the A-CDM conceptual elements are being implemented as part of the A-CDM project?

The results show (see Figure 3) that most of the implementations plan to implement the exchange of information and the A-CDM in adverse conditions, but for the other conceptual elements of A-CDM, the level of implementation is lower. From an A-CDM implementation perspective the expected results would be that at least elements “Information Sharing”, “Milestone Management”, “Variable Taxi Times” and “Pre-Departure Sequence” should be implemented at all airports planning to implement A-CDM but that is not the case

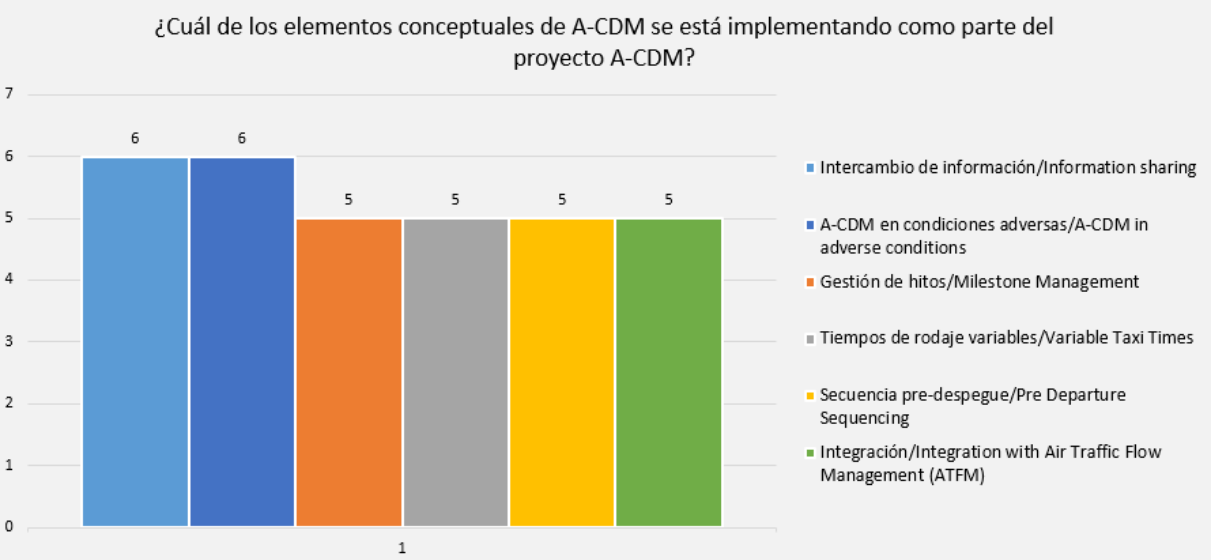

Figure 3: results to question 4

How is Information sharing implemented as par to the solution/planned A-CDM solution?

The results shown (see Figure 4) indicate that the majority of responding States are focusing on a combination of communication alternatives and not only based on a platform or only on manual interaction. These results should be reviewed when specific implementations at airports of different size and complexity have advanced.

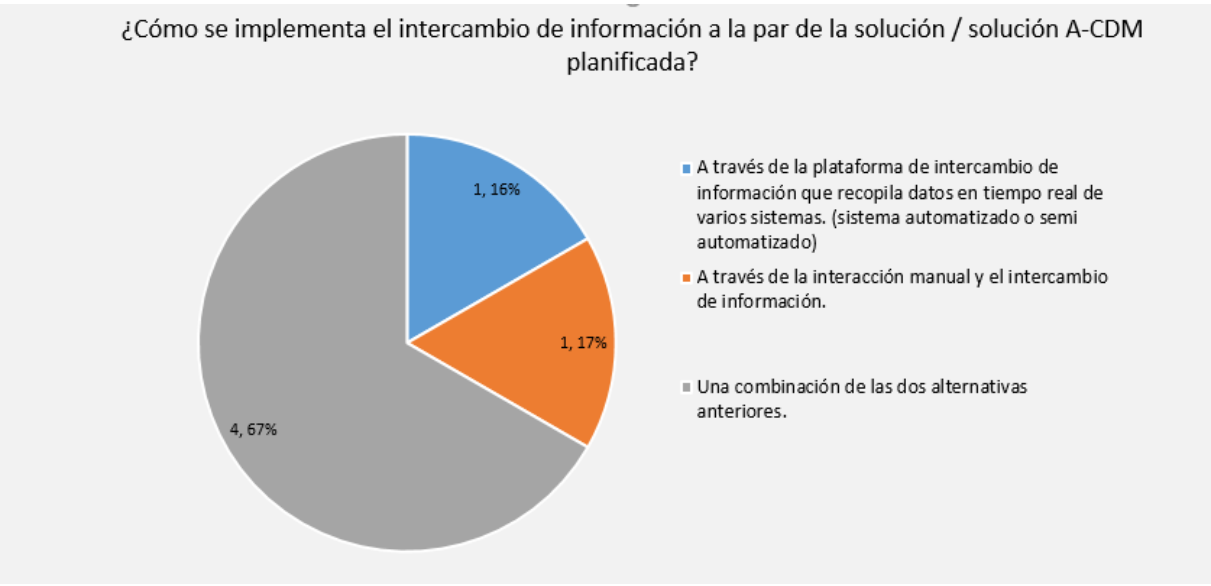

Figure 4: results to question 5

What Milestones (based on the Eurocontrol model) are captured/planned to be captured for the Milestone Management?

The results (see Figure 5) show a perspective of milestone management in the implementation of the A-CDM. Most States indicated that milestones 1, 4, 5, 6, 7, 9, 10, 13, 15 and 16 are or will be implemented as part of the implementation. The EUROCONTROL model HIGHLY RECOMMENDS that milestones 1-7, 10, 15 and 16 be implemented. If they are not implemented, for example, Milestone 3, automatic updates of TOBTs will be difficult / impossible, therefore, predictive calculations of TSATs will also be difficult / impossible to perform. This is something to discuss with stakeholders.

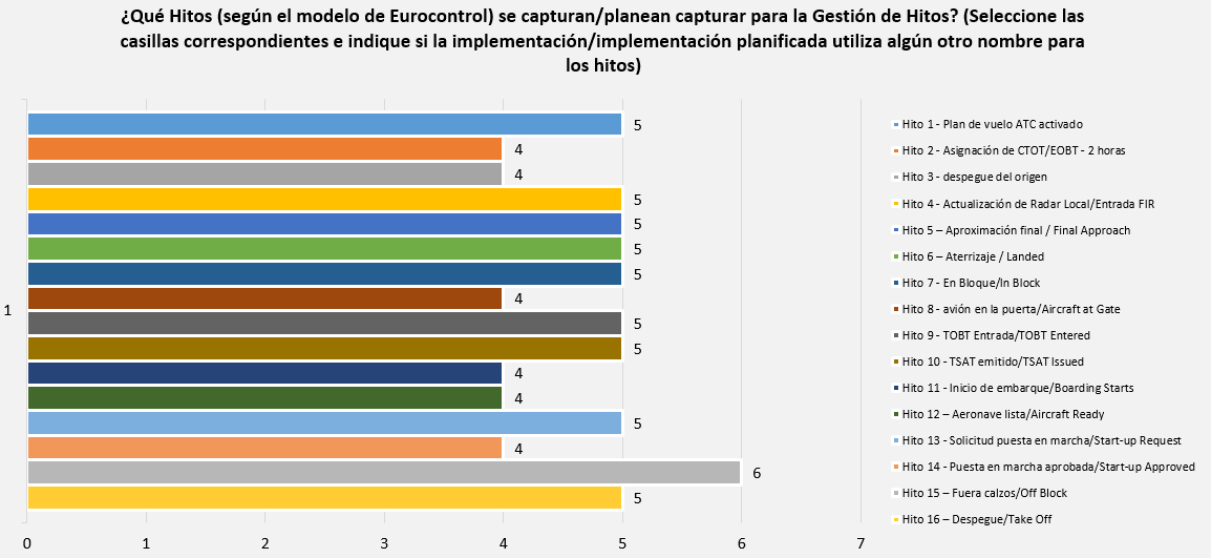

Figure 5: results on question 6

Are you planning to apply the concept of Target Off Block Times?

The results show that 100% of the respondents are assigning the responsibility of the TOBT the airlines / ground handlers, which is aligned with the concept of A-CDM.

What methodology is applied/going to be applied for calculating Variable Taxi Time?

The results (see Figure 7) show that 67% of the States that responded plan to apply or are applying dynamic variable taxi time. If we contrast this question with Figure 3, then there is a State that answered about the use of variable taxi times but initially applies or will apply the "Table look up" or fixed times.

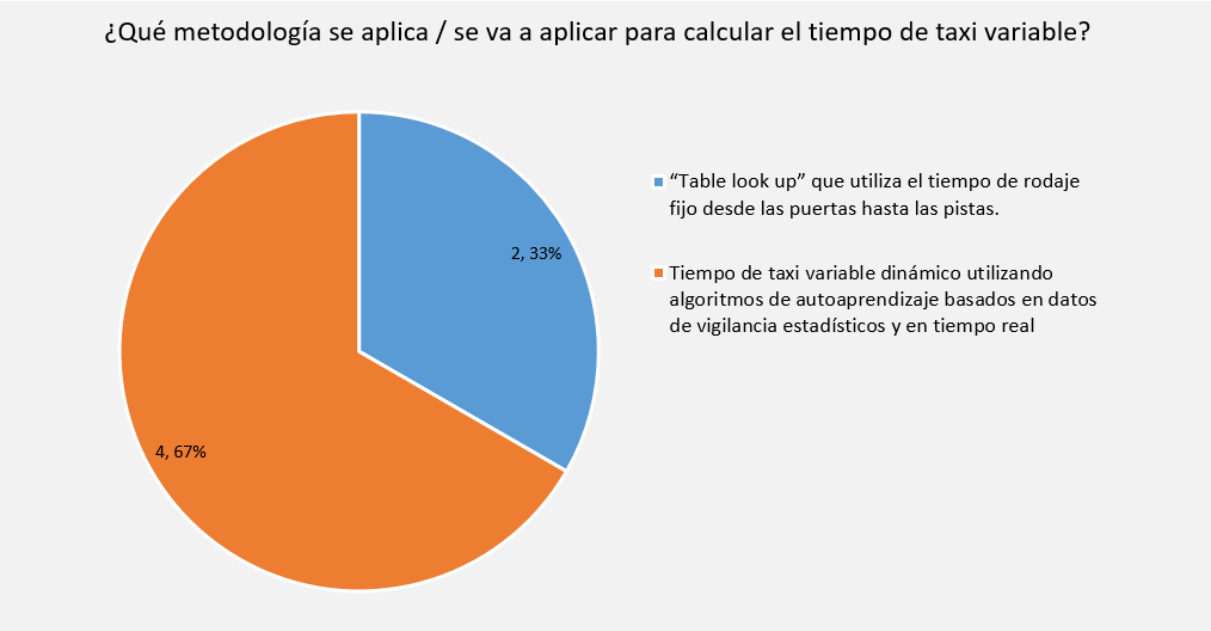

Figure 6: results on question 8

How is Target Start-Up Approval Time (TSAT) being calculated as part of Pre-Departure Sequencing?

The results (see Figure 8) show that the majority of respondents who responded have or will have automatic TSAT calculations using a PDS / DMAN.

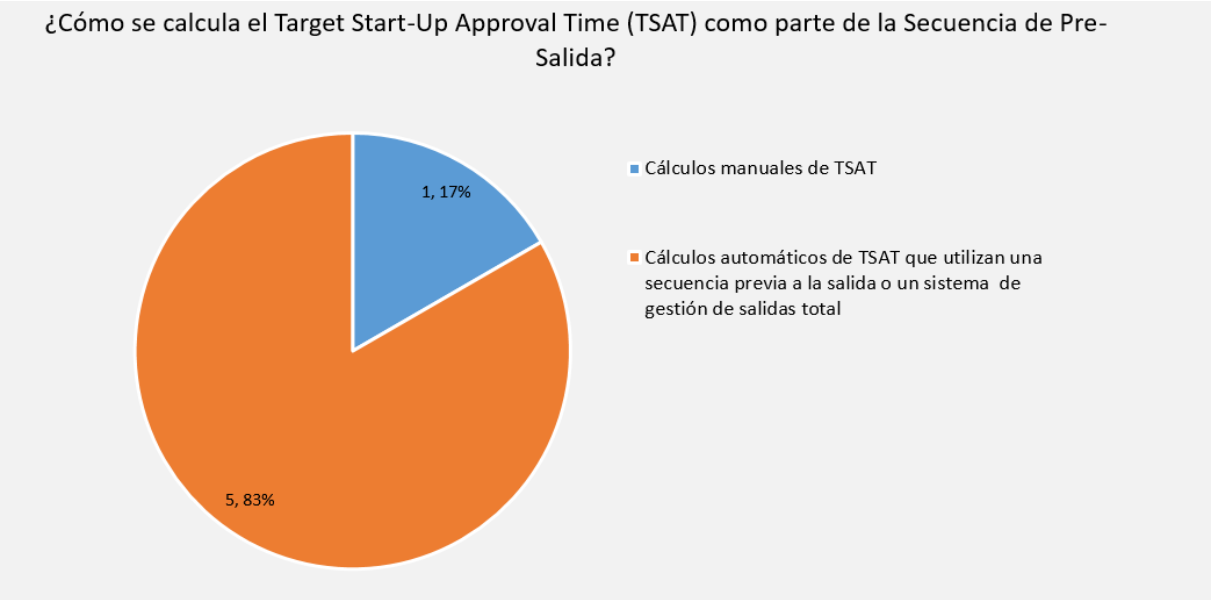

Figure 7: results on question 8

If TSAT Is calculated automatically, at what key milestones are the TSAT calculated/re-calculated?

The results (see Figure 9) show that most implementations will recalculate the TSAT as the TOBT is entered. Interestingly, there are no TSAT calculations in the initial stages of the flight.

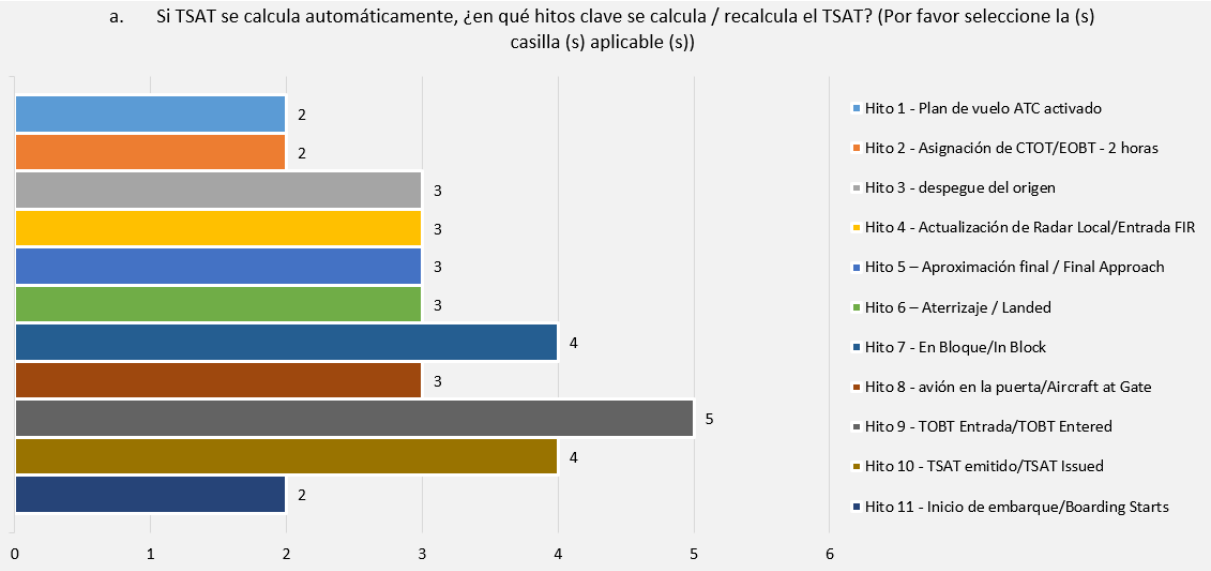

Figure 8: results on question 8a

How TSAT information is shared to Airlines operators/Ground Handling Agencies?

The results (Figure 10) indicate that the majority of respondents would be implementing a web portal or interface as the main means of communication of TSATs to other interested parties. Only two States responded to use more than one medium. Interestingly, one of the States that uses more than one medium has not included radio communication as a means to share TSAT information. Based on best practices in Europe, successful implementations are based on multiple ways to disseminate TSAT (and also TOBT) information. The way to ensure that the flight crew obtains the information is of particular importance from approximately 30 minutes before the TOBT and in the start-up and push back phases of the flight.

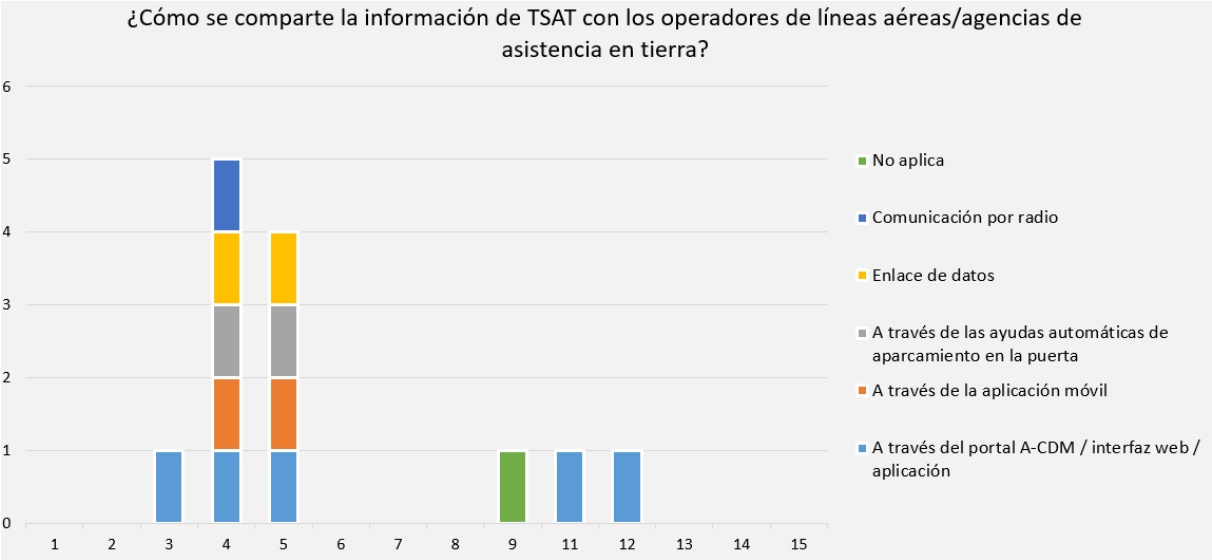

Figure 9: results to question 10

To establish the A-CDM project, has any guidance material been used to facilitate the scope and objectives?

The results (see Figure 11) show that most implementations are following ICAO document 9971 and the Eurocontrol A-CDM Manual. It is curious to identify that no State has considered using guidance from the FAA, other States or other material such as EUROCAE or ETSI.

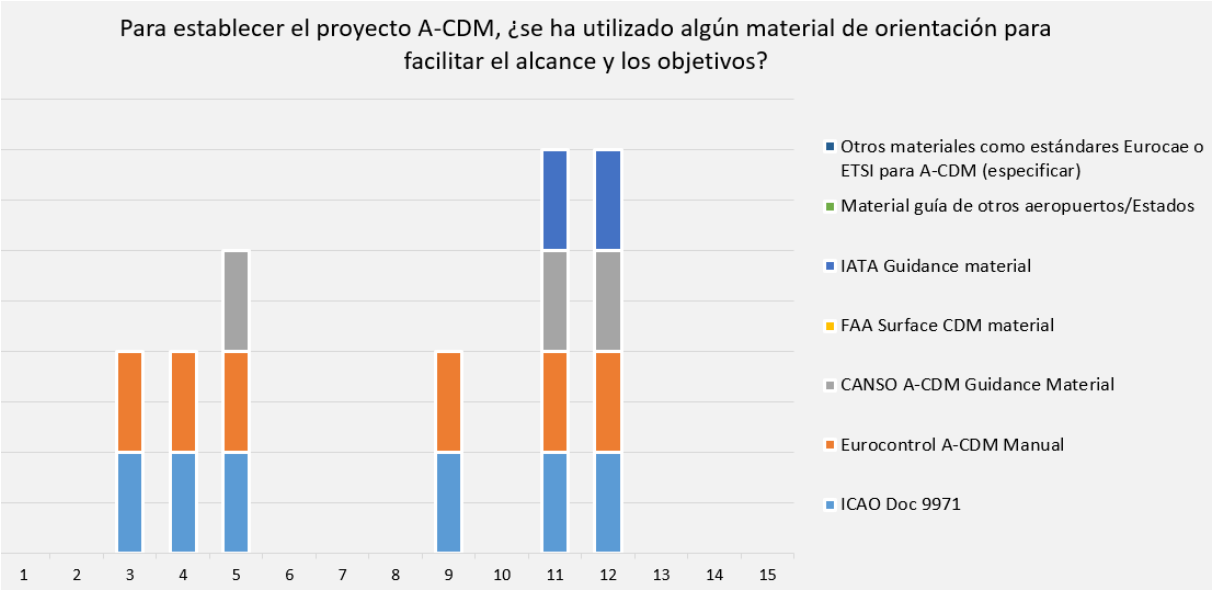

Figure 10: results on question 12b

Local Concept of Operations (ConOPS)

Has a "Local Concept of Operations" document for the A-CDM implementation been established?

The results (see Figure 12) indicate that at least 2 States have established a CONOPS type document for implementation, most have not implemented or did not respond.

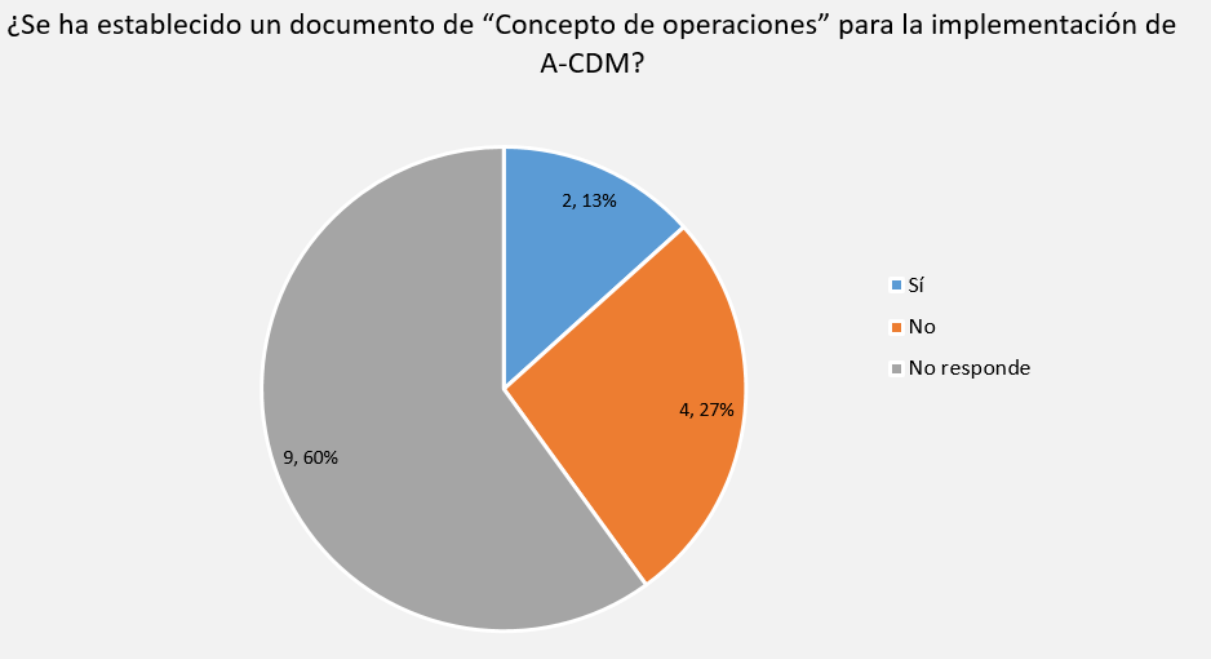

Figure 11: results on question 13

If yes, please indicate the scope of the document

According to the results of the previous question, the scope of the document (see Figure 13) indicates that a State (Brazil) has included practically all the scopes in the prepared CONOPS. The other State (Panama) has incorporated some elements.

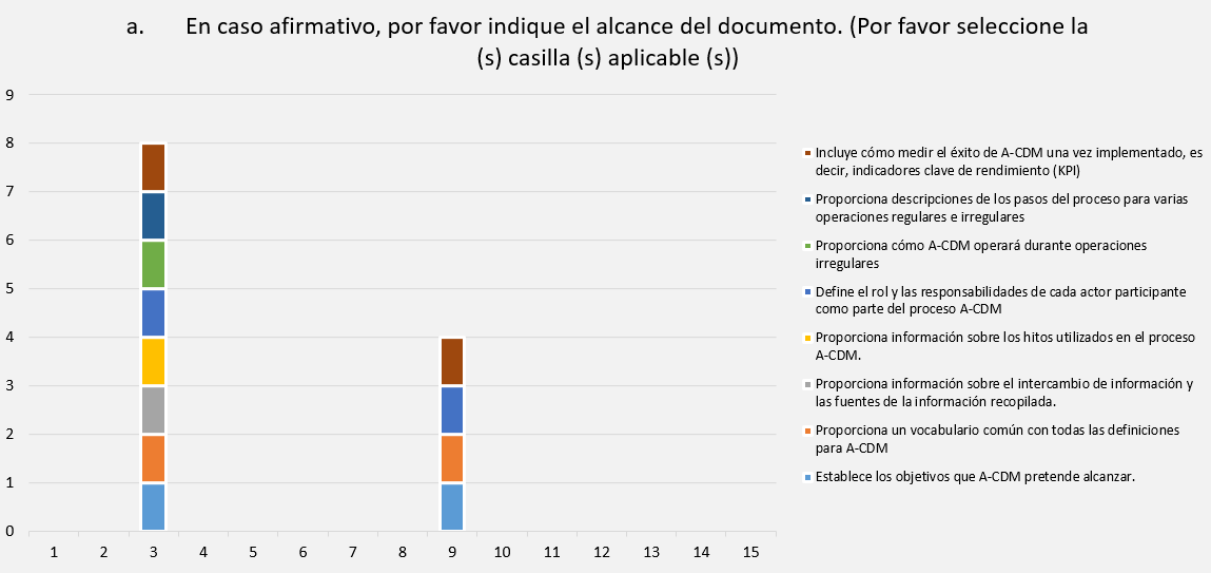

Figure 12: results on question 13a

Stakeholder engagement

Which stakeholders are involved in the A-CDM implementation?

The results show (Figure 14) that all implementations that answered the survey include key partners or stakeholders in the local implementation of A-CDM.

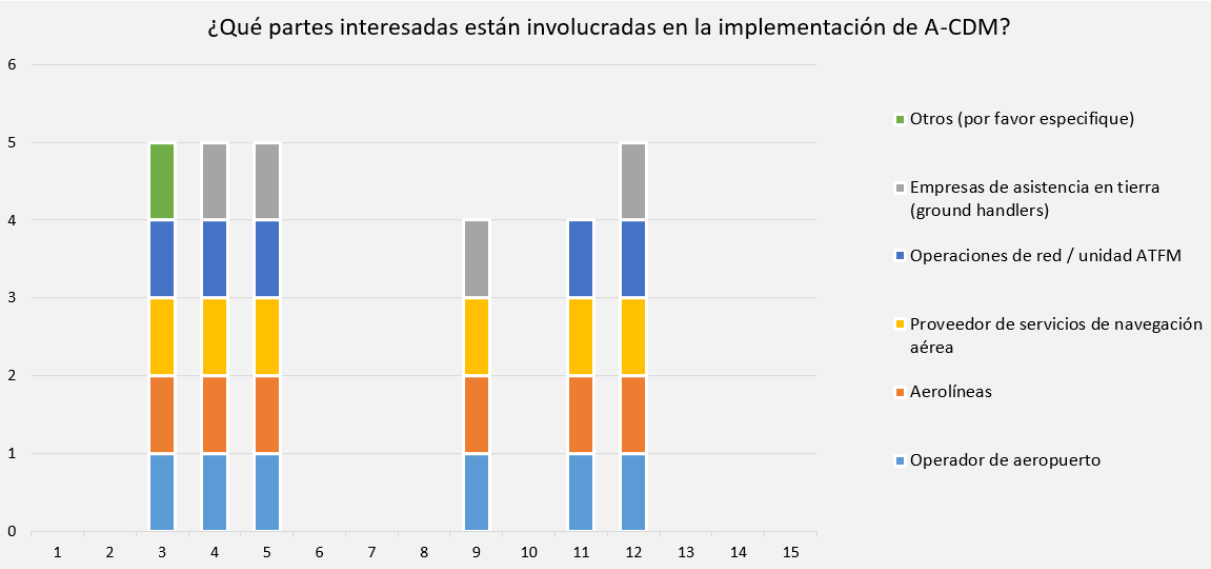

Figure 13: results on question 14

Has a Memorandum of Understanding (MOU) been established between the stakeholders?

The results (see Figure 14) indicate that 3 States report establishment of MOUs in at least one of the A-CDM implementations. It should be noted that 2 States reported that they were working on MOUs but have not been signed to date.

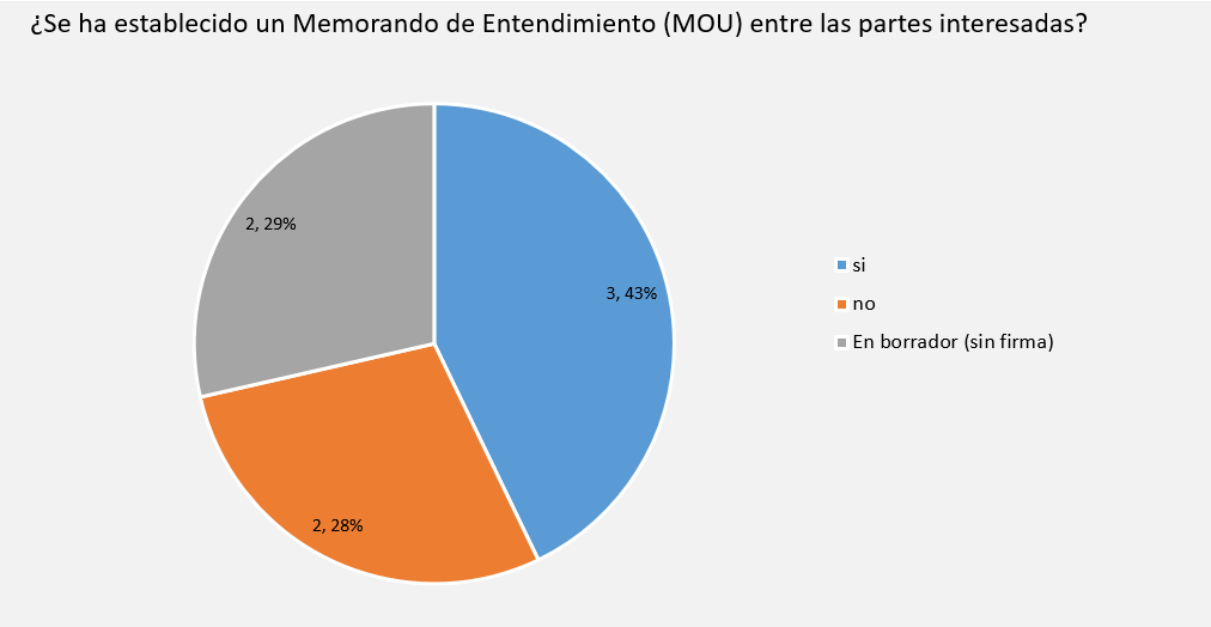

Figure 14: results on question 15

Project Implementation

Has a project group been established with all stakeholders involved?

A key piece of the implementation of the A-CDM is to work collaboratively and in a team. 71% of the implementations considered or will consider the implementation of project groups.

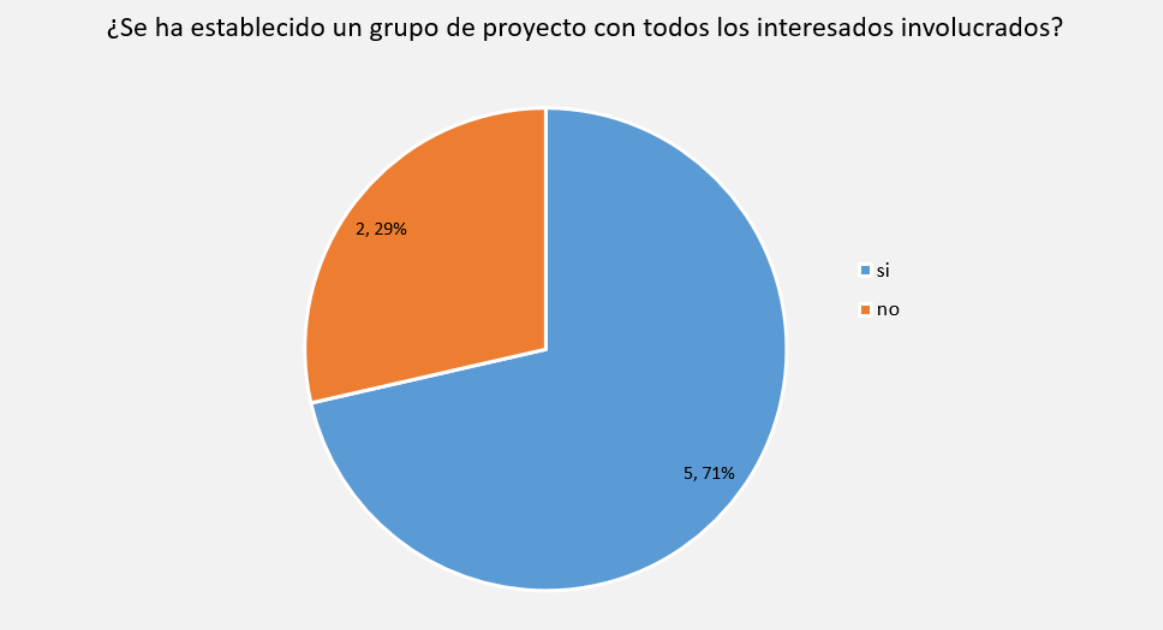

Figure 15: results on question 16

Is there a shared leadership or is the project management led by one organization?

67% of respondents who answered this question affirm that project management is based on a committee or group, while two States responded that only one organization leads the implementation. (see Figure 17)

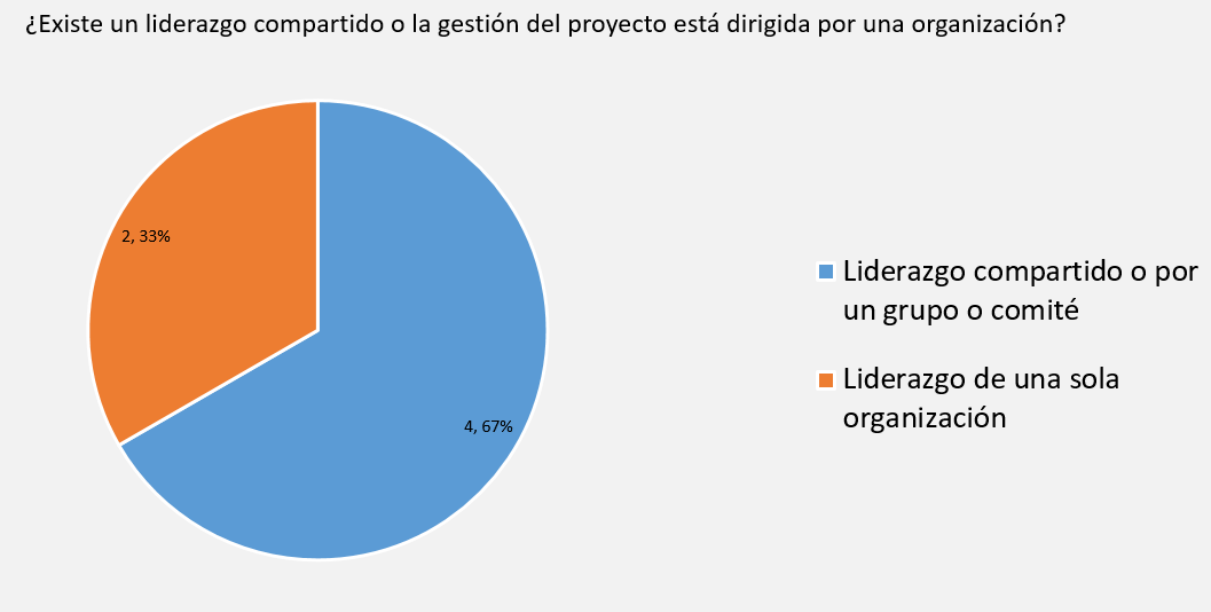

Figure 16: results on question 17

What are the objectives identified in the project that A-CDM is aiming to achieve?

Regarding the objectives of the A-CDM, the majority responded (see Figure 18) that the increase in predictability, the best use of resources, increase the efficient use of the aerodrome, safety and optimize the use of available capacity are objectives of the implementation.

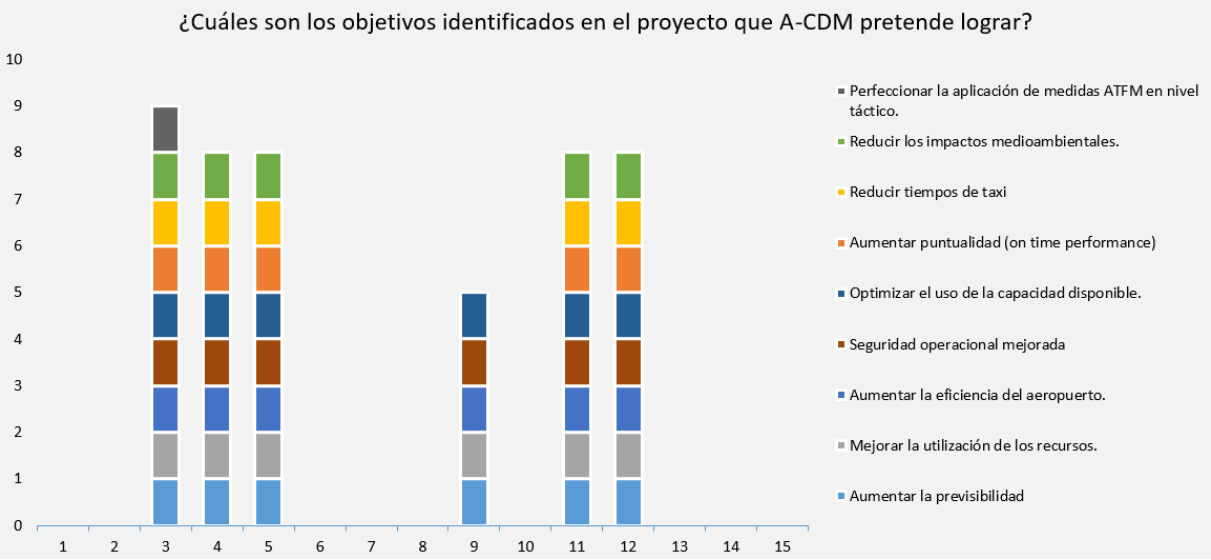

Figure 17: results on question 19

Has the project identified a more detailed Key Performance Framework with Key Performance Indicators to facilitate the measurements of the A-CDM implementation?

Only 4 States report that KPIs have been implemented despite the fact that 6 replied to be in the process of implementation. In relation to question 19, this result is interesting and raises the question of "how can stakeholders measure whether A-CDM contributes to goals that have been set?

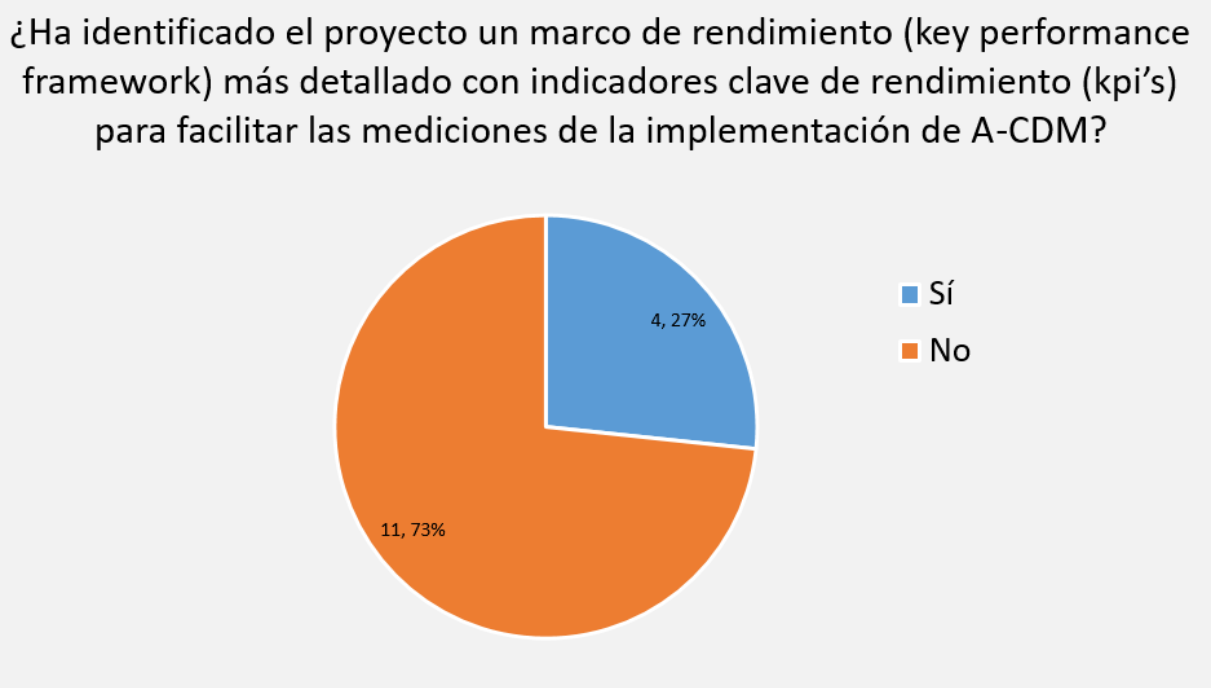

Figure 18: results on question 20

Training

Has the project established training in any of the following areas for the implementation of A-CDM?

The results (Figure 20) demonstrate the low level of implementation and training available about this relatively new concept in the region. Only one State has reported reaching the level of specialized training.

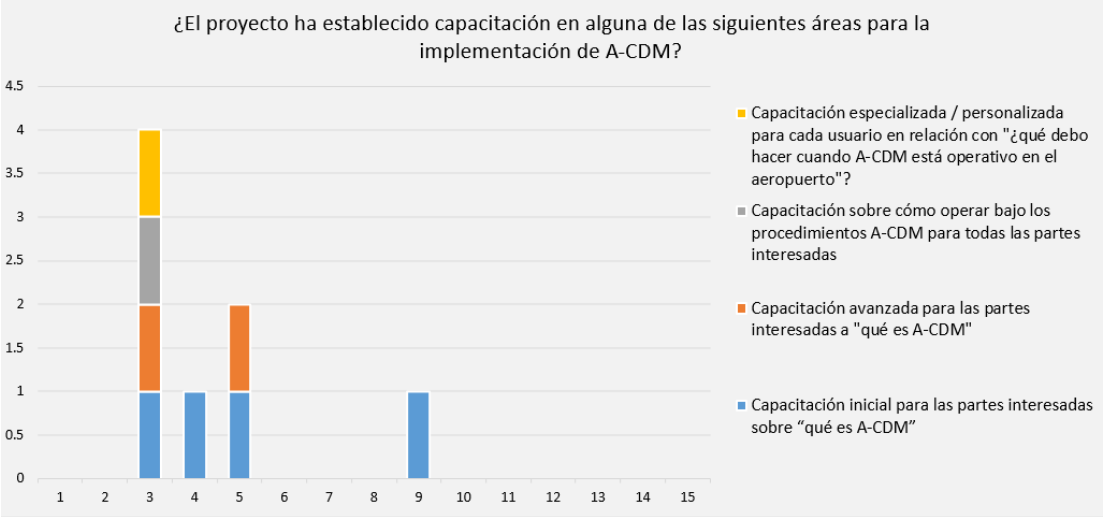

Figure 19: results on question 21

Challenges

Please rank what hold most true in relation to your A-CDM implementation.

The main challenges identified by the respondents (see Figure 21) is the commitment and management of the A-CDM project.

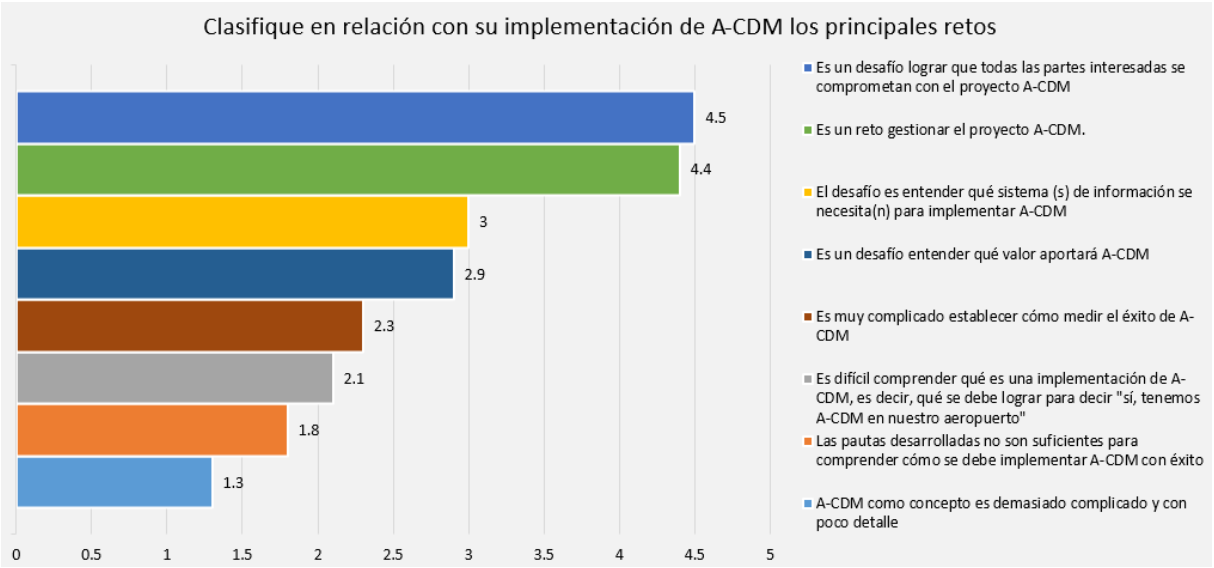

Figure 20: results on question 21

Conclusions

Despite several scenarios with capacity problems in the region, the results indicate that the implementation of A-CDM is moving at a relatively low rate or the report by the States may not be representing what the airport operators are doing on their own. Some States have even placed implementations in very short times and at aerodromes with low traffic / complexity levels, which could be an indication of an underestimation of the complexity and time really needed to implement A-CDM.

The lack of commitment was indicated as one of the main challenges in the implementation. This assumes that there is not, at the regional or local level, enough arguments or business case to support the effort in carrying out the implementation. It is important to highlight that A-CDM is not a requirement, much less its implementation is mandatory, it is rather a form of collaborative work that seeks, through effective and timely communication, to reduce uncertainty and allow better management, which then results in all the benefits already indicated.

As in other regions, the survey results identify that some areas of attention are:

- **Relationship between the A-CDM conceptual elements and milestones**. These are discrepancies in the responses indicating that the implementation of milestones and their purpose might not be fully understood.
- **How to measure the success of an A-CDM implementation.** All respondents indicated very clear objectives related to implementation A-CDM but at the same time not all have established how to measure that these objectives are achieved
- **Getting all stakeholders engaged as well as managing an A-CDM project**.

With the creation of a regional implementation guide, taking the experiences of States that already have some work on this topic in the Region, it could serve as a roadmap for a uniform, harmonized and scalable implementation.
