**SOUTH AMERICAN AIG REGIONAL COOPERATION MECHANISM (ARCM)**

**FOURTH AIG AUTHORITIES MEETING**
(Brasilia, Brazil, 23 to 25 May 2017)

**Item 4: Safety data collection and processing system (SDCPS) implementation progress**

# PROGRESS MADE IN THE SAFETY DATA COLLECTION AND PROCESSING SYSTEM (SDCPS)

(Presented by the ARCM Technical Committee)

**Summary**

This working paper presents to the Third AIG Authorities Meeting the status of implementation of the SDCPS, as well as a summary of the operation and performance of the system.

It also provides an overview of logins, reporting procedures, and registered users.

**References**

- Annex 13 – Aircraft accident and incident investigation
- Annex 19 – Safety management system
- Doc 9859 – Safety management manual

## 1. Introduction

1.1. Since the ARCM *Safety data collection and processing system (SDCPS)* was approved for implementation at the AIG-SAM/3 meeting held in March 2016, it has been available to AIG organisations of the SAM Region for access and reporting of occurrences, with the view to centralising and providing relevant information to SAM States for safety management.

1.2. Policies and procedures were established concerning reporting, security, maintenance, information levels, event types, and access to information. These policies provide the system with the necessary robustness and security to store as much information as possible, ensure data quality and integrity, process and produce safety intelligence, allowing all stakeholders of the regional aviation system to identify trends and indicators for decision-making.

1.3. One of the objectives of the ARCM, as an AIG regional cooperation mechanism, is to collaborate with, and assist, States in obtaining access to the SDCPS. Accordingly, the objectives of the ARCM Technical Committee are:

- ✓ to assist States in the implementation of a platform that is compatible with the ADREP taxonomy and the SDCPS.
- ✓ to ensure the availability of, and access to, the repository of the State in the SDCPS;
- ✓ to register and record authorised users, logins, notifications; and
- ✓ to do information backups.

1.4. Being the main information management system for the ARCM, States agreed that the information of their investigations would be made available in the SDCPS.

## 2. Definition of the problem

2.1 It is essential for the SAM Region to have a clear understanding of the need for occurrence reporting.

2.2 Each AIG organisation should adopt the established occurrence reporting procedures and allocate the necessary resources, since its contribution to the SDCPS has a significant impact on the safety information produced by the ARCM.

2.3 Those occurrences that are not reported are a substantial loss in terms of reactive information that could be used for analytical purposes.

2.4 Accordingly, control mechanisms must be established in relation to State reporting procedures and safety data quality.

2.5 AIG organisations should contribute to the strengthening of the SDCPS. **Appendix A** provides detailed information on the implementation of the ARCM SDPCS and its operation.

## 3. Suggested action

3.1 The AIG authorities of the Region are invited to:

a) take note and comment on the information provided in this working paper and in **Appendix A**;

b) inform the ARCM TC of any obstacles faced in the implementation of a system compatible with the ADREP and the connection to the SDCPS, in order to find solutions within the framework of the ARCM;

c) develop a plan to review data quality reports delivered to the ARCM (SDCPS), and implement a methodology (validation desk) to validate the data before it is uploaded to the ARCM SDCPS; and

d) take action to ensure compliance with the standards and recommended practices set forth in the Annexes to the Chicago Convention and with the suggestions of the ARCM regarding occurrence reporting.

- END -

## APPENDIX A

## IMPLEMENTATION OF THE ARCM SDCPS

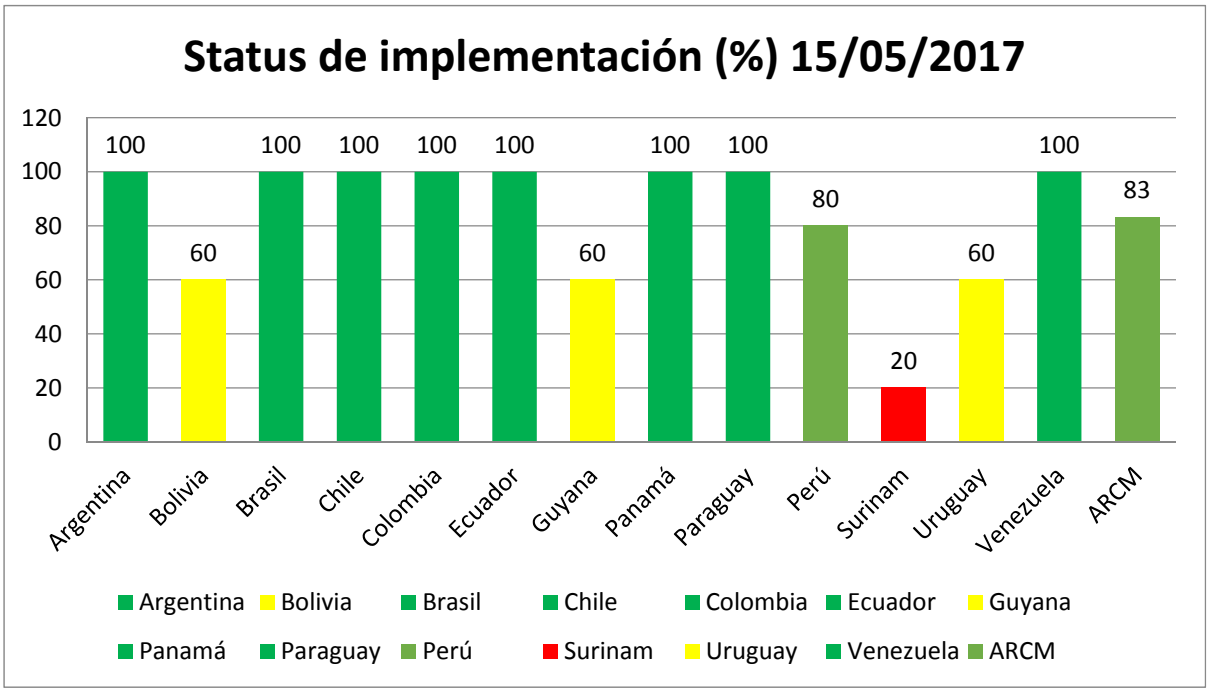
This Appendix elaborates on the concepts and information contained in the WP, providing relevant information on safety and the operation of the SDCPS. Detailed information will also be provided about data and logins by State.

### 1. Implementation programme

1.1 In 2016, a programme was conducted in SAM States for the implementation of a technological platform compatible with the ADREP taxonomy and the SDCPS. In this regard, the ARCM Technical Committee carried out the following processes:

- ✓ verification of implementation and updating of the ECCAIRS platform at ARCM AIG organisations;
- ✓ training of technical and operational personnel of the States;
- ✓ uploading of occurrences to the local platform;
- ✓ connection to the SDCPS; and
- ✓ reporting.

Each of the aforementioned processes represents 20% of the implementation programme. The status of implementation of the SDCPS in the SAM Region is shown in the following graph.




1.2 It should be noted that the success of each process depends on the commitment and cooperation between AIG States and the ARCM. States showing 60% implementation have completed the 3 (three) phases of the programme. A summary of the status of implementation and reported occurrences is shown below.

| STATE | Local ECCAIRS | Training | Local uploading | Connection | Reporting | Implemen-tation (%) | Number of uploaded events | Last login to SDCPS |
|---|---|---|---|---|---|---|---|---|
| Argentina | Yes | Yes | Yes | Yes | Yes | 100 | 657 | 15/05/2017 |
| Bolivia | Yes | Yes | Incomplete | Yes | Incomplete | 60 | 34 | 08/04/2016 |
| Brazil | Yes | Yes | Yes | Yes | Yes | 100 | 165 | 07/02/2017 |
| Chile | Yes | Yes | Yes | Yes | Yes | 100 | 296 | 17/11/2016 |
| Colombia | Yes | Yes | Yes | Yes | Yes | 100 | 473 | 23/08/2016 |
| Ecuador | Yes | Yes | Yes | Yes | Yes | 100 | 838 | 09/08/2016 |
| Guyana | Yes | Yes | Incomplete | Yes | Incomplete | 60 | 1 | |
| Panama | Yes | Yes | Yes | Yes | Yes | 100 | 223 | 17/04/2017 |
| Paraguay | Yes | Yes | Yes | Yes | Yes | 100 | 164 | 18/04/2017 |
| Peru | Yes | Yes | Yes | Yes | Yes | 80 | 8 | 03/02/2017 |
| Suriname | N/D | Yes | N/D | N/D | N/D | 20 | 0 | |
| Uruguay | Yes | Yes | Incomplete | Yes | Incomplete | 60 | 4 | |
| Venezuela | Yes | Yes | Yes | Yes | Yes | 100 | 751 | 17/04/2017 |
| **ARCM** | | | | | | **83** | **3614** | |

N/D: No data

1.3 As may be seen, the SDCPS is 83% implemented and has 3,614 reports recorded. The remaining 27% affects information analysis and system integrity. Furthermore, as we shall see in another working paper on data quality, the quality of information is very important.

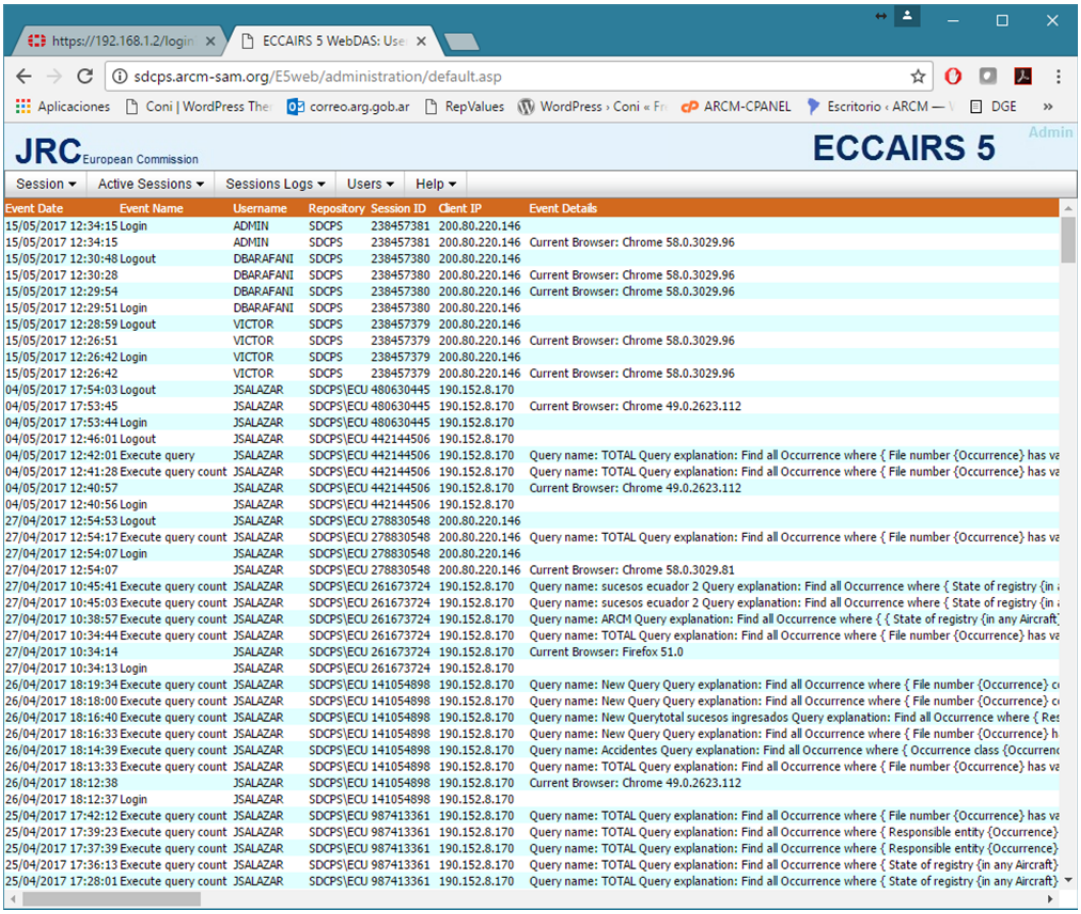
1.4 Regarding training, the ARCM, in its 2016 training plan, included a workshop on ADREP/ECCAIRS systems, as well as virtual and face-to-face assistance to States that so requested. The workshops served as a point of support for coordination and standardisation of systems, and for the uploading and reporting process.


## 2. Security and operation

2.1 The system must build trust among ARCM AIG organisations so that they will deposit their reports in the SDPCS. Therefore, the Technical Committee is responsible for the overall security of the system. The following list shows recent logins, security events and IP addresses.

| Id | EventDate | EventName | Username | Repository | SessionId | ClientIp |
|---|---|---|---|---|---|---|
| **4339** | 03/06/2017 11:15 | Login | AMARTINEZ | SDCPS | 728046770 | 200.62.226.131 |
| **4342** | 03/06/2017 15:59 | Login | JBARRIOS | SDCPS | 763870161 | 200.62.226.131 |
| **4365** | 04/11/2017 13:01 | Logout | APRADO | SDCPS | 651312685 | 200.62.226.131 |
| **3191** | 11/30/2016 3:40:14 PM | Logout | MABREU | SDCPS | 946093138 | 200.80.220.146 |
| **4371** | 4/17/2017 1:31:32 PM | Login | VICTOR | SDCPS | 651743432 | 200.62.226.131 |
| **4475** | 5/15/2017 12:29:51 PM | Login | DBARAFANI | SDCPS | 238457380 | 200.80.220.146 |
| **4479** | 5/15/2017 12:34:15 PM | Login | ADMIN | SDCPS | 238457381 | 200.80.220.146 |
| **10** | 04/08/2016 16:30 | Login | ESAAVEDRA | SDCPS\BOL | 3494095 | 200.80.220.146 |
| **4317** | 02/07/2017 11:15 | Logout | DANILODS | SDCPS\BRA | 239155183 | 186.195.39.66 |
| **2098** | 7/19/2016 7:25:15 AM | Logout | ALMEIDA | SDCPS\BRA | 805011354 | 189.61.52.140 |
| **2231** | 11/17/2016 5:34:25 PM | View occurrence | WSANMARTIN | SDCPS\CHI | 808276502 | 190.151.14.190 |
| **4284** | 1/19/2017 2:12:43 PM | | JECHEVERRY | SDCPS\COL | 120230788 | 200.21.18.68 |
| **4462** | 4/27/2017 12:54:53 PM | Logout | JSALAZAR | SDCPS\ECU | 278830548 | 200.80.220.146 |
| **4322** | 2/24/2017 11:28:18 AM | Logout | WKHALIL | SDCPS\GUY | 29416776 | 190.80.60.43 |
| **4268** | 01/05/2017 | Execute | CPRIVERA | SDCPS\PAN | 855110923 | 190.34.189.254 |

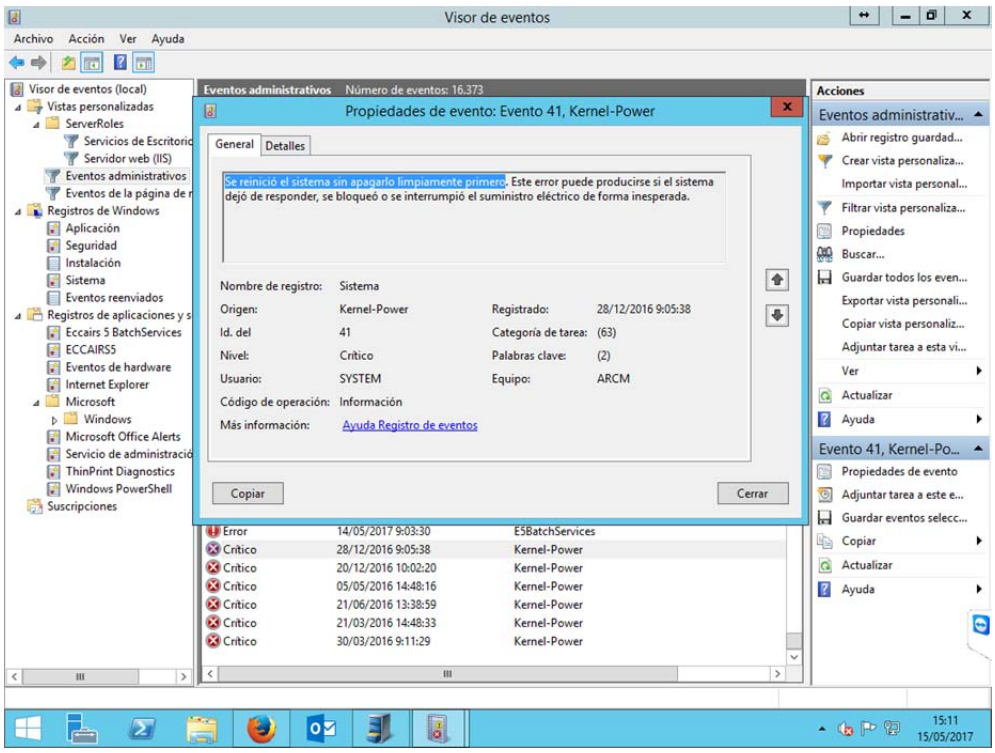
| | | | | | | |
|---|---|---|---|---|---|---|
| | 13:03 | query count | | | | |
| **4379** | 4/17/2017 2:17:35 PM | Login | VBARRIOS | SDCPS\PAN | 651743439 | 200.62.226.131 |
| **4385** | 4/17/2017 2:26:59 PM | | JCAMPOS | SDCPS\PAN | 651743442 | 200.62.226.131 |
| **4373** | 4/17/2017 1:32:13 PM | Login | EVERRUCK | SDCPS\PAR | 651743435 | 200.62.226.131 |
| **4300** | 02/03/2017 13:13 | Login | CCAHUAS | SDCPS\PER | 619034165 | 8.28.16.254 |
| **4387** | 4/17/2017 2:29:05 PM | | ALIMA | SDCPS\VEN | 651743441 | 200.62.226.131 |




| Event Date | Event Name | Username | Repository | Session ID | Client IP | Event Details |
|---|---|---|---|---|---|---|
| 15/05/2017 12:34:15 | Login | ADMIN | SDCPS | 238457381 | 200.80.220.146 | |
| 15/05/2017 12:34:15 | | ADMIN | SDCPS | 238457381 | 200.80.220.146 | Current Browser: Chrome 58.0.3029.96 |
| 15/05/2017 12:30:48 | Logout | DBARAFANI | SDCPS | 238457380 | 200.80.220.146 | |
| 15/05/2017 12:30:28 | | DBARAFANI | SDCPS | 238457380 | 200.80.220.146 | Current Browser: Chrome 58.0.3029.96 |
| 15/05/2017 12:29:54 | | DBARAFANI | SDCPS | 238457380 | 200.80.220.146 | Current Browser: Chrome 58.0.3029.96 |
| 15/05/2017 12:29:51 | Login | DBARAFANI | SDCPS | 238457380 | 200.80.220.146 | |
| 15/05/2017 12:28:59 | Logout | VICTOR | SDCPS | 238457379 | 200.80.220.146 | |
| 15/05/2017 12:26:51 | | VICTOR | SDCPS | 238457379 | 200.80.220.146 | Current Browser: Chrome 58.0.3029.96 |
| 15/05/2017 12:26:42 | Login | VICTOR | SDCPS | 238457379 | 200.80.220.146 | |
| 15/05/2017 12:26:42 | | VICTOR | SDCPS | 238457379 | 200.80.220.146 | Current Browser: Chrome 58.0.3029.96 |
| 04/05/2017 17:54:03 | Logout | JSALAZAR | SDCPS\ECU | 480630445 | 190.152.8.170 | |
| 04/05/2017 17:53:45 | | JSALAZAR | SDCPS\ECU | 480630445 | 190.152.8.170 | Current Browser: Chrome 49.0.2623.112 |
| 04/05/2017 17:53:44 | Login | JSALAZAR | SDCPS\ECU | 480630445 | 190.152.8.170 | |
| 04/05/2017 12:46:01 | Logout | JSALAZAR | SDCPS\ECU | 442144506 | 190.152.8.170 | |
| 04/05/2017 12:42:01 | Execute query | JSALAZAR | SDCPS\ECU | 442144506 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { File number {Occurrence} has va |
| 04/05/2017 12:41:28 | Execute query count | JSALAZAR | SDCPS\ECU | 442144506 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { File number {Occurrence} has va |
| 04/05/2017 12:40:57 | | JSALAZAR | SDCPS\ECU | 442144506 | 190.152.8.170 | Current Browser: Chrome 49.0.2623.112 |
| 04/05/2017 12:40:56 | Login | JSALAZAR | SDCPS\ECU | 442144506 | 190.152.8.170 | |
| 27/04/2017 12:54:53 | Logout | JSALAZAR | SDCPS\ECU | 278830548 | 200.80.220.146 | |
| 27/04/2017 12:54:17 | Execute query count | JSALAZAR | SDCPS\ECU | 278830548 | 200.80.220.146 | Query name: TOTAL Query explanation: Find all Occurrence where { File number {Occurrence} has va |
| 27/04/2017 12:54:07 | Login | JSALAZAR | SDCPS\ECU | 278830548 | 200.80.220.146 | |
| 27/04/2017 12:54:07 | | JSALAZAR | SDCPS\ECU | 278830548 | 200.80.220.146 | Current Browser: Chrome 58.0.3029.81 |
| 27/04/2017 10:45:41 | Execute query count | JSALAZAR | SDCPS\ECU | 261673724 | 190.152.8.170 | Query name: sucesos ecuador 2 Query explanation: Find all Occurrence where { State of registry {in a |
| 27/04/2017 10:45:03 | Execute query count | JSALAZAR | SDCPS\ECU | 261673724 | 190.152.8.170 | Query name: sucesos ecuador 2 Query explanation: Find all Occurrence where { State of registry {in a |
| 27/04/2017 10:38:57 | Execute query count | JSALAZAR | SDCPS\ECU | 261673724 | 190.152.8.170 | Query name: ARCM Query explanation: Find all Occurrence where { { State of registry {in any Aircraft |
| 27/04/2017 10:34:44 | Execute query count | JSALAZAR | SDCPS\ECU | 261673724 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { File number {Occurrence} has va |
| 27/04/2017 10:34:14 | | JSALAZAR | SDCPS\ECU | 261673724 | 190.152.8.170 | Current Browser: Firefox 51.0 |
| 27/04/2017 10:34:13 | Login | JSALAZAR | SDCPS\ECU | 261673724 | 190.152.8.170 | |
| 26/04/2017 18:19:34 | Execute query count | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Query name: New Query Query explanation: Find all Occurrence where { File number {Occurrence} co |
| 26/04/2017 18:18:00 | Execute query count | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Query name: New Query Query explanation: Find all Occurrence where { File number {Occurrence} co |
| 26/04/2017 18:16:40 | Execute query count | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Query name: New Querytotal sucesos ingresados Query explanation: Find all Occurrence where { Res |
| 26/04/2017 18:16:33 | Execute query count | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Query name: New Query Query explanation: Find all Occurrence where { File number {Occurrence} h |
| 26/04/2017 18:14:39 | Execute query count | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Query name: Accidentes Query explanation: Find all Occurrence where { Occurrence class {Occurrenc |
| 26/04/2017 18:13:33 | Execute query count | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { File number {Occurrence} has va |
| 26/04/2017 18:12:38 | | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | Current Browser: Chrome 49.0.2623.112 |
| 26/04/2017 18:12:37 | Login | JSALAZAR | SDCPS\ECU | 141054898 | 190.152.8.170 | |
| 25/04/2017 17:42:12 | Execute query count | JSALAZAR | SDCPS\ECU | 987413361 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { File number {Occurrence} has va |
| 25/04/2017 17:39:23 | Execute query count | JSALAZAR | SDCPS\ECU | 987413361 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { Responsible entity {Occurrence} |
| 25/04/2017 17:37:39 | Execute query count | JSALAZAR | SDCPS\ECU | 987413361 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { Responsible entity {Occurrence} |
| 25/04/2017 17:36:13 | Execute query count | JSALAZAR | SDCPS\ECU | 987413361 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { State of registry {in any Aircraft} |
| 25/04/2017 17:28:01 | Execute query count | JSALAZAR | SDCPS\ECU | 987413361 | 190.152.8.170 | Query name: TOTAL Query explanation: Find all Occurrence where { State of registry {in any Aircraft} |

2.2 The previous graph shows logins and activities within the system. This information is extremely important for the management and monitoring of distributed systems.

2.3 The history of system non-availability events is shown below; they represent power outages lasting more than 2 hours or Internet service failure. The SDCPS had 6 (six) events in 365 days, which represents a high level of availability. It should be noted that reporting procedures also prescribe alternative means, such as email.




## 3. Conclusions and proposed action

3.1 Taking into account the time required for implementation and acquaintance with the system, which is a little more than one year, most States, with great effort, have reached 83% implementation, but there are still States below 60%. The goal in the short term is to solve issues related to implementation and connection to the SDCPS in order to have a tool containing information that is 100% reliable and secure.

3.2 Regarding the quality of the information, reports must be validated before being submitted to the ARCM; AIG organisations must look after that.

3.3 AIG organisations that lack IT personnel must seek the assistance of the ARCM Technical Committee for the implementation and connection to the SDCPS.

3.4 AIG organisations that have implemented the tool, have the connection, but have not coded their investigations must implement coding and reporting mechanisms and seek the assistance of the ARCM Technical Committee.

3.5 The study analysed the status of implementation of the SDCPS in the SAM Region and its usage in terms of the quality and depth of safety data.

4.5 In view of the foregoing, it would be desirable for all AIG organisations to publish in their respective official websites a list of their investigations to serve as reference of the reports submitted to the ARCM SDCPS, thus contributing to proactive safety management.

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