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MIGRATION TO TABLE DRIVEN CODE FORMS

Reports on status of migration to TDCF in RA I

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**Summary and Purpose of Document**

The document describes the status of migration to Table-Driven Code Forms in RA I, highlighting the results of a migration survey.

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**ACTION PROPOSED**

This is an information document no action is proposed.

**ANNEXES:**

 None

**DISCUSSION**

The World Meteorological Organization (WMO) Regional Association I (AFRICA) is composed of 53 Member States with capitals in the Region and 4 Member States with capital outside the Region (France, Spain and Portugal).

To understand the situation on the TDCF Migration process in RAI, a questionnaire was distributed to most of countries in this region. From the questionnaire the following came out:

The questionnaires were distributed to 45 countries. These countries are Algeria, Benin, Burkina Faso, Botswana, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Comoros, Congo Brazzaville, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Togo, Tunisia, Uganda, Tanzania, Zimbabwe and Zambia.

**SURVEY RESULTS**

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| **Country** | **Migration Status** | **Encoding Software** | **Remarks** |
| **Tanzania** | Exchanging TDCF reports | Customized ECMWF decoder | BUFR SYNOP being received in Nairobi |
| **Algeria**  | Exchanging TDCF reports | COROBOR SYSTEMS | BUFR SYNOP being received in RTH/GISC Toulouse |
| **SENEGAL** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM | DAKAR RTH encodes all TAC SYNOP, CLIMAT, TEMP and PILOT bulletins of Senegal and Countries under his responsibility in BUFR codes |
| **NIGER** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM | NIAMEY RTH encodes all TAC SYNOP, CLIMAT, TEMP and PILOT bulletins of Niger and Countries under his responsibility in BUFR codes |
| **CONGO BRAZZA** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM | BRAZZAVILLE RTH encodes all TAC SYNOP, CLIMAT, TEMP and PILOT bulletins of Congo and Countries under his responsibility in BUFR codes |
| **Egypt** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM |  |
| **MALI** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM | Bamako NC encodes all TAC SYNOP, CLIMAT, TEMP and PILOT bulletins of Mali in BUFR codes |
| **MAURITANIA** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM | Nouakchott NC encodes all TAC SYNOP, CLIMAT, TEMP and PILOT bulletins of Mauritania in BUFR codes |
| **Zimbabwe** | Not exchanging TDCF reports | MESSIR COROBOR SYSTEM | SYNOPs are being sent to Pretoria in TAC via email since the encoding system (Messir-Comm) stopped working |
| **Madagascar** | Exchanging TDCF reports (AWS data) | CLIMSOFT |   |
| **Morocco** | Exchanging TDCF reports  | TRANSMET |   |
| **Tunisia** | Exchanging TDCF reports | MESSIR COROBOR SYSTEM |   |
| **Kenya**  | Exchanging TDCF reports | CLIMSOFT | TDCF reports received RTH/Gisc Toulouse  |
| **Rwanda** | Exchanging TDCF reports | CLIMSOFT | SYNOP being received in Nairobi |
| **Uganda** | Not Exchanging TDCF reports | NO |   |
| **Burundi** | Not Exchanging TDCF reports | NO |   |
| **Malawi** | Not Exchanging TDCF reports | NO |   |
| **Botswana** | Not Exchanging TDCF reports | NO |   |
| **Mauritius** | Not exchanging reports in TDCF format | NO |   |
| **Zambia** | Not Exchanging TDCF reports | NO |   |
| **RDC** | Not exchanging TDCF report | NO | COROBOR System down |
| **Gabon (SMHN)** | No | NO | No |

Twenty (22) countries replied to the survey, with only fourteen (14) countries indicating that they disseminate TCDF reports to the Global Telecommunication System (GTS) i.e. SYNOP, TEMP and CLIMAT where applicable. The main obstacles identified in the transmission of the observations were:

* communication problems
* software for the encoding and decoding of observations.

The encoding software used are: ECMWF decoder, COROBOR systems, and CLIMSOFT software.

**Technology used to exchange data with GTS**

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**PROBLEMS IDENTIFIED**

Even after undergoing training and appreciating the importance of TDCF in most of RAI countries, several of them have been unable to proceed with the migration as they lack capacity to implement TDCF processing systems. The more affected are those that have been using communications means that are only capable of handling TAC data exchanges. Transfer of TDCF messages requires upgrading to more advanced means such as FTP. Some have implemented CLIMSOFT which can encode observations into TDCF but so far, they have not been able to transmit the produced BUFR files to the responsible RTHs due to the same reasons. It’s the case of Uganda, Burundi and Malawi.

Some message switching systems require upgrading in order to compile BUFR files into GTS bulletins.

GISC Casablanca has already taken contact with many of the above centres to discuss the various possible means to connect their centres with GISC-Casablanca. Most connections will pass through the internet (Capo Verde, Guinea, Senegal) while some others will be connected via the RMDCN network (Exp: Tunisia).

The last established/working link was with the Nigerian Meteorological Service in February 2019.

**RECOMMENDATION**

* GISC Casablanca and Pretoria should be encouraged to play a guiding role in identifying the suitable connectivity means that can be easily implemented for TDCF data exchange in their area of responsibility.
* TAC-TDCF converters be implemented in the existing message switching systems as a transition step before a full migration.
* Retraining in RA 1 will help to achieve the TDCF migration.

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