# IQWMA Development and Test Progresses

## Background

1. In order to keep under review the efficient operation of the WWW, internationally co-ordinated monitoring on a non-real-time basis should be carried out periodically. So CMA has developed the integrated quantitative WWW monitoring analysis (IQWMA) software.
2. The objectives of the analysis are:
   1. To provide reports on the availability of observational data at WWW centres.
   2. To compare the availability of observational data between GTS centres, identifying possible shortcomings in the exchange of data.
   3. To compare the bulletins notified in the Volume C1 and the RTH routeing catalogues to the list of bulletins received during monitoring exercises, identifying possible shortcomings in the updating of the Volume C1 and the RTH routeing catalogues.

## IQWMA Development

### Development environment and OS support

1. Development of IQWMA is based on the use of SWT GUI, Java programing language and MySQL database. And all of them are open source and free.
2. Because of Java’s cross-platform compatibility, IQWMA runs well in both Windows and Linux.

### Inputs

1. The first step is inputting reference data sets such as Volume A, Volume C1, RBSN, RBCN and RTH routing catalogues. All these reference datasets are maintained by WMO and we can download them from official website of WMO.
2. The second step is inputting observations exchanged on the GTS such as IWM, SMM, SAM monitoring reports. In particular, IWM monitoring reports contains NMC summary reports, RTH summary reports and MTN summary reports. IQWMA supports inputting individual file and batch files. And IQWMA can also convert AGM reports to IWM format.

### Outputs

1. Outputs of IQWMA include charts, tables and KML files.
2. The analysis charts contain
   1. Charts showing the percentage of reports received by the monitoring centres at each station in comparison with the reports expected from the RBSN/RBCN stations.
   2. Charts showing the reports not received by a WWW centre.
3. The analysis tables contain
   1. Tables providing information on the number of reports received from each RBSN/ RBCN station by each monitoring centre.
   2. Tables showing the silent stations for each monitoring centre and the bulletins comprising reports from these silent stations received by other centres.
   3. Tables providing information on the abbreviated headings of the bulletins into which at least one report from a RBSN/ RBCN station was compiled.
4. The KML files can be opened with Google Earth. You can view some maps showing the percentage of reports received by the monitoring centres.

### IWM analysis

1. The Integrated WWW Monitoring leads to the integration of the Annual Global Monitoring (AGM) and the Special MTN Monitoring (SMM) into one monitoring scheme. The analysis of the monitoring reports will be done by the Secretariat at the global level and by the RTHs at the regional level
2. There are some samples of IWM analysis. You can see the plotting charts and grid charts showing the percentage of reports received at the global level and at the regional level.

### SMM analysis

1. One of the main features of the SMM is that the sets of messages provided by the various MTN monitoring centres are processed by a pre-analysis centre. The objective of the pre-analysis is to prepare files having a data-base structure and containing the information extracted from all the sets of messages. When a question is raised on specific bulletins, it is always possible to access the raw data and read the complete text of the bulletins as received by the monitoring centres.
2. There are some samples of SMM analysis. You can see the plotting charts showing the percentage of reports received of the fixed stations. And these two plotting charts show the availability of reports of the mobile stations at sea and the mobile stations from aircraft.

### SAM analysis

1. The analysis of the SAM makes it possible to compare the availability of the reports received from ABSN/ABCN stations at collecting centre, at RTHs and at MTN centres.
2. There are some samples of SAM analysis. You can see the plotting charts showing the percentage of reports received for SYNOP, TEMP and CLIMAT data.

### TDCF monitor

1. For the operation of the WWW, the plan for the migration from TAC to TDCF includes a transition period, during which the observational data are exchanged in both TAC and BURF. During this transition period, the monitoring centres should provide monitoring reports for the same observations represented in both TAC and BURF. IQWMA provides reports on the progress in the migration.

## IQWMA Test

1. There is the development and test schedule of IQWMA. We have complemented all the development and send it to Secretariat. They have passed the test of inputting reference data sets, inputting observations and IWM analysis. Now they are testing SMM analysis and will test SAM analysis and TDCF monitor this year.

## IQWMA Test

1. We plan to pass all test including SMM analysis, SAM analysis, TDCF monitor and provide a release version this year.
2. And we plan to integrate all the analysis results to GISC Beijing portal. In future, users can view the analysis charts and download analysis tables and KML files in GISC Beijing portal.

## References

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## Recommended Text

Include here suggested text for inclusion in Report, including and proposed amendments to the Manual or Guide to WIS and Manual on GTS.

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