

# UNSD-COMESA-ECOWAS-AUC-ASEAN- EUROSTAT-CARICOM

## Notes on Eurotrace Improvement

Version 21 Jan 2016

UNSD and partner organisations welcome initiative of AUC and Eurostat to improve features, performance, scalability and reliability of Eurotrace, a trade statistics data processing and dissemination system, within the Pan African Statistics (PAS) programme in 2016 and beyond. As the custodian of both trade statistics concepts and definitions; and official global repository of international trade statistics database (UN Comtrade), it is expected that UNSD and global trade community would benefit greatly from the improvement of Eurotrace. In that context, this proposal aims to having good coordination and alignment between the needs of countries and global programme on trade statistics. Therefore, we suggest upgrade/addition of the following modules:

### **1. Adding SDMX-IMTS data extraction module**

The working group on SDMX-IMTS, composes UNSD, Eurostat, OECD, ITC and UNCTAD, has started to develop global data structure definition of IMTS since 2013. In 2015, the group conducted global consultation on SDMX IMTS data structure definition as well as the implementation strategies. One of those strategies is to upgrade Eurotrace by adding SDMX-IMTS data extraction module for international data reporting. The data structure definition is expected to be released in early 2016. This SDMX IMTS complies with the latest methodology (IMTS 2010) and technical specification (SDMX v.2.1).

### **2. Creating module of trade and business register integration**

As part of on-going initiative to increase use of trade data and produce new indicators (Trade by Enterprise Characteristics; TEC), linking trade and business statistics has been high in the agenda for quite some time. In addition, due to high interest in analysis of the global value chain, the availability of TEC is seen as an important input to improve results of trade in value-added estimates. Therefore, it would be worthwhile to explore possibility of integrating information on enterprise characteristics from Statistical Business Register and trade data through Eurotrace.

### **3. Upgrading of Trade Indices Module of Eurotrace**

The Trade Indices Module of Eurotrace (TIM) has been around since the earlier version of Eurotrace DOS. It had been used by countries to compile external trade indices based on unit values reported by Customs. This module was carried over into Eurotrace windows; however, many countries have reported the methodological issues in TIM windows. Responding to this challenge, UNSD and ITC have developed external trade indices methodology, implemented it in SAS, and conducted pilot testing in Malawi and

Jamaica. It is planned that the new methodology would be ported in Eurotrace in order to reaching out wider trade data compilers. In addition, UNSD conducted global survey on external trade indices national practices in mid-2015 to measure the relevancy and challenges. This module will include outliers detection program and quantity estimation. The outliers add-on have to be fully documented.

#### **4. Module to analyse bilateral trade asymmetries**

As part of global programme on the measurement of international trade and economic globalization, analysis and reconciliation of bilateral trade asymmetries are high in the priority list. The goal is to better understand the cause of the discrepancies and then take well-founded decisions to balance them for the purpose of compiling global input-output tables. By adding the bilateral asymmetries analysis module, trade compilers are made to be aware of discrepancies in early stage of trade data production, and necessary action can be taken in advance. This would produce higher data quality output. (Informed that option exists in Web COMEXT called mirror statistics)

#### **5. Improvement on the Eurotrace SQL Server Software version 3.3.6**

Eurotrace SQL Server development started way back in 2010 after some countries started having processing problems due to their large sets that were continuously growing as more data was added to their Domains. The current Eurotrace SQL Server Software version 3.3.4 although fairly good still has a lot of bugs and needs further enhancements to be done by the developers to make it stable. ECOWAS is trying to implement the version 3.3.7 from now and will communicate problems they may face in using this version.

Among the few bugs and improvements that have been identified are:

- Error Management Wizard doesn't work when the number of fields in the declaration table exceeds 60 hence this limit needs to be extended to say 99.
- The Domain Backup / Restore option does not work therefore Domain backup and restore in SQL Server has to be done manually outside Eurotrace
- The Compact option which is used to compress the Eurotrace database to remove unused spaces is also not functional
- Creation of relationships using two dictionaries results in errors as the data types that are specified when creating these relationships are usually not the right type

by the system, correction has to be done manually in SQL Server. (Informed that it works in 3.3.7)

- The in-built aggregate function does not work for the derived datasets, e.g for HS2, HS4 and HS6 when compared with HS8 totals the figures are different.
- The Eurotrace SQL Server Version has no option for importing data that is in SQL Server tables from other databases
- For remittance of data to other user's e.g RECs, there is no mechanism for extracting monthly data from the system.

## **6. Improvement of COMEXT 9.1.2 (Server Version 9.2)**

The COMEXT 9.1.2 option for reporting Quantity and Supplement Unit is not working properly for SQL Server database production of tables. The "Roles" dialog box which is used to change SU from dimension to indicator is also not working.

## **7. Improvement of Web COMEXT (COMEXT system) 1.0.13**

The installation of the COMEXT system is not always so easy to handle (especially the installation of the Oracle Express database 11g).

The development team should provide two ways of installing the system, one integrated package (full installer) as well as a detailed procedure to configure the Oracle database.

The main interest is to be able to use an ORACLE database (not express) for big dissemination. The limitation of Oracle express to 1GB of RAM can be a problem when too many users are using the system and when it is on the internet.

In addition, the function enabling the "customisation" of the Easy COMEXT interface should be improved.

For the time being, administrator can only add a logo on the top of the main page and to edit the URL associated to the links in the interface.

It would be necessary to enable the modification of the link title.. (Instead of having a link to Europa/Eurostat, to be able to customise the link title)

## **8. Eurotrace Editor:**

Eurotrace editor should be improved to enable an easy search of the extracted data. For the time being, the extractions toward the editor are still using an access database (even from a SQL Server Eurotrace database).

## **9. Data bases migration from Access to SQL:**

One of the first challenges is the conversion of multife dimensions (3 dimensions) are not working properly in the database conversion into SQL format.

## **10. Bridging between Eurotrace and PX-Web<sup>1</sup> (data dissemination system)**

PX-Web is a solution for the web; it is used to establish dynamic tables on Internet from PC-Axis files. Both PX-Web and PC-Axis are developed by Statistics Sweden, and will be available for free of charge from 1 January 2016. The PX-Web can be alternative dissemination platform for countries to disseminate their trade statistics; however, it requires a bridging application between Eurotrace and PX-Web. Note: ASEAN Secretariat is exploring this approach.

## **11. Other important issues**

- a) Maintenance and in-depth testing of the last version Eurotrace by field experts in order to create a more reliable and stable application where all modules are working perfectly. A more detailed and precise user manual should be developed.
- b) Developing a new stable fully networkable version which could either be used in internal network or shared online between institution working with an open source DBMS (ex: postgres)
- c) Revision of the data editor module enabling working with raw data (printing, moving in the selection, filtering, viewing the selected data, checking the value...) .  
Depending on the development of Point b, the user could also work directly on a set of centralised data.
- d) Development of credibility modules (based on quartile range, magnitude of failure...)
- e) Development of ad-hoc modules to manage data confidentiality.
- f) Development of a module to estimate and impute missing data (e.g. quantities).
- g) Ensuring the user support via using a unique data forum and Eurotrace web site managed by a team of dedicated experts. The team should also ensure the trainings needed and centralise the corrections, the open source development guidelines and the new modules integration into the core package.
- h) Development of a flat file module for the easy visualisation of the data or extraction of data according to a given format.
- i) In-depth testing of the connection to existing external datasets (virtual datasets) as well as the possibility to create derived datasets from different sources.

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<sup>1</sup> [http://www.scb.se/sv\\_/PC-Axis/Programs/PX-Web/#](http://www.scb.se/sv_/PC-Axis/Programs/PX-Web/#)

- j) Development of an excel tool case, allowing to automatically format the excel outputs generated by COMEXT.
- k) Developing a basic web platform for presenting trade data table from Eurotrace.

## Feedback from Eurostat

### **General**

- NET (visual studio 2013) based version: Has at the moment the same functionalities as the current VB6 version. We did the version to assure the continuity of the project after the moment Microsoft stops supporting old compilations. It has still some small bugs and for this reason I temporarily removed it from the downloads. All future developments will be done for the NET version only.

- The improvement margins for Comext are limited (or even zero) because Comext is developed in another context. We just use Comext "as is"

UNSD/COMESA/ECOWAS/AUC/ASEAN Proposal on  
Eurotrace Improvement  
Version 30 Dec 2015

#### 1. Adding SDMX-IMTS data extraction module

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----- Foreseen in 2016. We will use the latest available specifications. You can provide me your technical specifications (v.2.1) to compare with the available in Eurostat. During development we can provide you with test outputs for checking.

#### 2. Creating module of trade and business register integration

As part of on-going initiative to increase use of trade data and produce new indicators (Trade by Enterprise Characteristics; TEC), linking trade and business statistics has been high in the agenda for quite some time. In addition, due to high interest in analysis of the global value chain, the availability of TEC is seen as an important input to improve results of trade in value-added estimates. Therefore, it would be worthwhile to explore possibility of integrating information on enterprise characteristics from Statistical Business Register and trade data through Eurotrace.

----- Eurotrace can be used for any type of aggregated statistics. I will be rather easy (small sizes for Eurotrace) to create such a database. I can personally assist you to prototype. You should keep in mind that the join of structural and trade is, in most cases, not a 100% successful operation. Manual interventions are often needed

#### 3. Upgrading of Trade Indices Module of Eurotrace

The Trade Indices Module of Eurotrace (TIM) has been around since the earlier version of Eurotrace DOS. It had been used by countries to compile external trade indices based

on unit values reported by Customs. This module was carried over into Eurotrace windows; however, many countries have reported the methodological issues in TIM windows. Responding to this challenge, UNSD and ITC have developed external trade indices methodology, implemented it in SAS, and conducted pilot testing in Malawi and Jamaica. It is planned that the new methodology would be ported in Eurotrace in order to reaching out wider trade data compilers. In addition, UNSD conducted global survey on external trade indices national practices in mid-215 to measure the relevancy and challenges. This module will include outliers detection program and quantity estimation. The outliers add-on have to be fully documented.

----- We are rather advanced to implement Eurostat indices methodology. I can provide you with the methodology to compare with yours. Then we can study the results.

#### 4. Module to analyse bilateral trade asymmetries

As part of global programme on the measurement of international trade and economic globalization, analysis and reconciliation of bilateral trade asymmetries are high in the priority list. The goal is to better understand the cause of the discrepancies and then take well-founded decisions to balance them for the purpose of compiling global input-output tables. By adding the bilateral asymmetries analysis module, trade compilers are made to be aware of discrepancies in early stage of trade data production, and necessary action can be taken in advance. This would produce higher data quality output. (Informed that option exists in Web COMEXT called mirror statistics).

----- Indeed the function exists in WEB comext. However, it supposes that partners' data are included in the database. This is not the case with national or regional databases. Importing detailed data from comtrade will need arrangements with Comtrade. Furthermore, data reconciliation will need analytical and interventional processes that I don't see how to automatize them in a generic way in Eurostat. We can produce a document on a practical case for interactive guidance (needs time and voluntaries).

#### 5. Improvement on the Eurotrace SQL Server Software version 3.3.6

Eurotrace SQL Server development started way back in 2010 after some countries started having processing problems due to their large sets that were continuously growing as more data was added to their Domains. The current Eurotrace SQL Server Software version 3.3.4 although fairly good still has a lot of bugs and needs further enhancements to be done by the developers to make it stable. ECOWAS is trying to implement the version 3.3.7 from now and will communicate problems they may face in using this version.

----- A new 3.9 version will be released this week. It is supposed to close all issues with SQL Server. If any bug is reported, will be corrected.

Among the few bugs and improvements that have been identified are:

- Error Management Wizard doesn't work when the number of fields in the declaration table exceeds 60 hence this limit needs to be extended to say 99.

----- Will be improved. The reason we had it is that in access sql, the string length cannot be more than 64000 characters. The error management sql strings are very long.

The Domain Backup / Restore option does not work therefore Domain backup and restore in SQL Server has to be done manually outside Eurotrace

----- I will examine the issue and come back

The Compact option which is used to compress the Eurotrace database to remove unused spaces is also not functional

----- it will be corrected.

Creation of relationships using two dictionaries results in errors as the data types that are specified when creating these relationships are usually not the right type by the system, correction has to be done manually in SQL Server. (Informed that it works in 3.3.7)

----- I will examine the issue and come back

The in-built aggregate function does not work for the derived datasets, e.g for HS2, HS4 and HS6 when compared with HS8 totals the figures are different.

----- Corrected in version 3.9

The Eurotrace SQL Server Version has no option for importing data that is in SQL Server tables from other databases

----- I will examine the issue and come back. It should not be a big issue. In any case these tables can be linked to access and imported from the links. (I have not yet tested)

For remittance of data to other user's e.g RECs, there is no mechanism for extracting monthly data from the system.

----- I will examine the issue and come back

## 6. Improvement of COMEXT 9.1.2 (Server Version 9.2)

The COMEXT 9.1.2 option for reporting Quantity and Supplement Unit is not working properly for SQL Server database production of tables. The "Roles" dialog box which is used to change SU from dimension to indicator is also not working.

-----The roles will corrected. I will examine the case of reporting

## 7. Improvement of Web COMEXT (COMEXT system) 1.0.13

The installation of the COMEXT system is not always so easy to handle (especially the installation of the Oracle Express database 11g).



The development team should provide two ways of installing the system, one integrated package (full installer) as well as a detailed procedure to configure the Oracle database.

The main interest is to be able to use an ORACLE database (not express) for big dissemination. The limitation of Oracle express to 1GB of RAM can be a problem when too many users are using the system and when it is on the internet.

In addition, the function enabling the "customisation" of the Easy COMEXT interface should be improved.

For the time being, administrator can only add a logo on the top of the main page and to edit the URL associated to the links in the interface.

It would be necessary to enable the modification of the link title.. (Instead of having a link to Europa/Eurostat, to be able to customise the link title)

----- I will examine the issue and come back. For 2016 we have foreseen a separate module for the metadata management. For the installation we will produce detailed installation notes. I don't think that a press button installable version can be created for the web versions.

#### 8. Eurotrace Editor:

Eurotrace editor should be improved to enable an easy search of the extracted data. For the time being, the extractions toward the editor are still using an access database (even from a SQL Server Eurotrace database).

----- The editor is design to work in decentralised way. Used database should be easily copied, sent and moved. This is not the case with SQL server. We have not foreseen any improvement for the editor. We should have in mind that all DBMS provide actually tools to create data entry forms. Ad hoc solutions can be implemented if needed.

#### 9. Data bases migration from Access to SQL:

One of the first challenges is the conversion of multifile dimensions (3 dimensions) are not working properly in the database conversion into SQL format.

----- I will examine the issue and come back.

#### 10. Bridging between Eurotrace and PX-Web (data dissemination system)

PX-Web is a solution for the web; it is used to establish dynamic tables on Internet from PC-Axis files. Both PX-Web and PC-Axis are developed by Statistics Sweden, and will be available for free of charge from 1 January 2016. The PX-Web can be alternative dissemination platform for countries to disseminate their trade statistics; however, it requires a bridging application between Eurotrace and PX-Web. Note: ASEAN Secretariat is exploring this approach.

----- We already produce PC-Axis output with comext. ASEAN Secretariat explores the possibility for direct bridging. I would wait the results before investigating.

#### 11. Other important issues

- a) Maintenance and in-depth testing of the last version Eurotrace by field experts in order to create a more reliable and stable application where all modules are working perfectly. A more detailed and precise user manual should be developed. ----- it is our target as well.
- b) Developing a new stable fully networkable version which could either be used in internal network or shared online between institution working with an open source DBMS (ex: postgres). ----- I will invest but a-priori, it needs important investments (not foreseen). The communication of postgres with windows is done with an ODBC driver while the OLE automation module is still beta. Theoretically, we might have difficulties to implement. Postress is an excellent tool and we use it here with our validation system (XT-NET edit)
- c) Revision of the data editor module enabling working with raw data (printing, moving in the selection, filtering, viewing the selected data, checking the value...) . Depending on the development of Point b, the user could also work directly on a set of centralised data. ----- see a previous comment.
- d) Development of credibility modules (based on quartile range, magnitude of failure...) ----- to examine. The existing outliers contain output of basic statistics that could be further used.
- e) Development of ad-hoc modules to manage data confidentiality. ----- very difficult. I know two applications (T-Argus and an R package developed by statistics Austria). I don't see how I could do something similar for Eurotrace.
- f) Development of a module to estimate and impute missing data (e.g. quantities). ----- to discuss
- g) Ensuring the user support via using a unique data forum and Eurotrace web site managed by a team of dedicated experts. The team should also ensure the trainings needed and centralise the corrections, the open source development guidelines and the new modules integration into the core package. ----- See with my coop colleagues
- h) Development of a flat file module for the easy visualisation of the data or extraction of data according to a given format. ----- to examine
- i) In-depth testing of the connection to existing external datasets (virtual datasets) as well as the possibility to create derived datasets from different sources.
- j) Development of an excel tool case, allowing to automatically format the excel outputs generated by COMEXT. ----- Ad hoc module. We need specifications.
- k) Developing a basic web platform for presenting trade data table from Eurotrace. ----- To examine.