Latest on DEMETRA: usage and IT concepts for today and tomorrow

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Conclusion
1.a Modules in DEMETRA

- A central component with internals, user interface and communication with others.
- As many separate components as supported formats.
- The Tramo/Seats library.
- The X-12-Arima library.

In object-oriented approach

1.b Modules in DEMETRA

[Diagram showing various components and interfaces of DEMETRA, including Tramo, Seats, X-12-Arima, and data formats such as .xls, .txt, .db, .sas7bdat.]
2 Database connectivity

2.a Overview

- **5 different formats:**
  - ASCII text files,
  - XLS files (spreadsheets)
  - SAS databases
  - FAME databases
  - ORACLE Express databases

- **2 families:**
  - Direct access through the WINDOWS filesystem
  - Access through a connection solution (Connect, Open, Read and/or Write, Close, Disconnect)

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2 Database connectivity

2.b The FAME interface

- **A connection case: local and remote access to FAME DBs**

Remote computer (UNIX)

MS-WINDOWS - PC

Remote FAME databases

FAME/Demetra Server

FAME/DEMETRA Interface

Using RPC protocol

FAME/Demetra Server

FAME/DEMETRA client (DLL)

Using RPC protocol
3 Talking to Tramo/Seats and X-12-Arima – The Principals

- **DEMETRA** is in C++, object-oriented approach.
- **Tramo/Seats** and **X-12-Arima** are in Fortran.
- **Then, special needs:**
  - A common space for information exchange shared by the 2 methods (SAIP).
  - Replacement of IOs via input/output files through a communication channel in memory involving SAIP.
  - Complete change in SA libraries of the way to get inputs (routines moved to DEMETRA).

4 Navigation in the interface

4.a Power and advantages

**DEMETRA** User Interface is probably the major novelty of the product

- It is not a coverage of the SA libraries commands one by one but a space where users are guided.
  - Learning curve (IT concern) is reduced; less keywords and lists of accepted values to remember;
  - Productivity is increased; immediate control of many consistencies;
  - SA activity may be placed in more hands.
- **The PROJECT keeps track of sessions.**
4 Navigation in the interface

4.b Main steps

2 branches of computation:
- Automated module (multiple series run)
- Detailed Analysis Module (single series run)
  - Each branch with quite similar preliminary steps (choice of input DB, new or existing project, mostly).
  - Then
    - If Automated, choose parameters, methods and run.
    - If Detailed Analysis, choose method, give specs on the model, perhaps come back on choices about best model detection, perhaps do the same about statistics and forecast, save all choices if necessary and/or run.

5 DEMETRA 2.10

5.a Objectives

- Updating the SA libraries, Tramo/Seats Sept, 2005 and X-12-Arima, 0.3, without changing the user interface.
  - Bring improvements from the research side in production environment,
  - Best way to get the stability of a first version,
  - No risk of incompatibility with existing DEMETRA PROJECTS.
5 DEMETRA 2.10

5.b New in Tramo/Seats Sept 2005

- Integration of Terror in Tramo with restructuring output;
- Creation of a summary files;
- New Table-s, Table-t files;
- New Output file naming;
- Many corrections and improvements from place to place in the library.

5 DEMETRA 2.10

5.c New in X-12-Arima 0.3

- Automatic model identification procedure;
- A forcing option;
- Revised composite adjustment procedures;
- Conversion of output to in HTML format;
- Unified Diagnostic files, `.xdg` files and `.mdg` files are now in `.udg` files.

Details in presentation of Brian Monsell: ‘Recent Developments in Seasonal Adjustment Software at the Census Bureau’.
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5.d Stage of development

A first BETA test version;
- Solving all IT/compilation errors (more than 400 errors at the beginning);
- Solving all linking errors, resolutions to get a first executable version;
- Running this executable on standard examples and solving all break of execution.

Next:
- a big step in testing on real dimension data,
- Increasing some of the gaps between recent improvements, by keeping interface as it is and DEMETRA PROJECTs compatibility.

CONCLUSION

DEMETRA a software with lots of qualities in its interface;
- A big progress in harmonisation of presentation of options and parameters toward Tramo/Seats and X-12-Arima.
- Solutions for communication with times series storage environments.
- But ... structural problems exist: update of the SA libraries still complex task.
- How to make it easy? By looking at the overall software architecture from SA libraries.