CORE
(COmmom Reference Environment)
ESSnet final results

Carlo Vaccari
Istat / University of Camerino
Italy
Partners and meetings

Countries: it (coord.), fr, nl, no, pt, se

Third parties (Universities): Athens, Camerino

Meetings held:

- Kick-off - Luxembourg January 2011
- Lisbon meeting – March 2011
- Paris meeting – June 2011
- Rome meeting - October 2011
- Final meeting in Luxembourg - January 2012
CORE Information Model

Information model (del 2.2) for the statistical process, designed in accordance with these principles:

- **CORA requirements**
- **Rectangular data sets**: rows and columns
- **Strong typing**: each column one value type only and so a data set is (strongly) typed - also rules and parameters are typed
- **Data set Kinds**: constrain the data sets that can be transferred (micro data, dimensional, classifications, ...)
- **Business objects**: usage of XML to support modeling business objects outside CORE, such as the GSIM
How do services interact?

You can use different tools for different services
  - e.g. SPSS, SAS, R, Relational DBMS ...

Different tools need different data formats

Conversions are inevitable
Conversions are expensive!

Between 2 formats

- A \(\leftrightarrow\) B : 2 conversions

Between 3 formats

- A \(\leftrightarrow\) B : 6 conversions
  
  C

Between N formats: \(N^2 - N\)
CORE reduces $N^2 - N$ to $2*N$

Definition of Standard CORE data format

Conversion to and from CORE format

Convertors are format-specific, not service-specific
CORE Architecture

CORE Data:
- Domain Descriptor: meta-model with entities and entity properties (open to DB|RDF|GSIM integration)
- CORE data model (according to the information model): Rectangular data set, Data set kind ...
- Mapping model: mapping CORE data to Domain Descriptor

Integration API: making a tool a CORE service, i.e. translating inputs and outputs of the tool in a completely transparent and automatic way
Integrating APIs

• Purpose: making a tool a CORE service
  – Translates inputs and outputs of the tool in a completely transparent and automatic way
CORE Scenario presented

Working solution for automatic execution of selected GSBPM sub-processes starting from WP3 results

Environment independence:
WP5 provided an implementation in .NET while WP6 provided an implementation in Java
CORE Scenario presented

Sample Allocation (MAUSS-R)

Sample Selection (SAS Script)

Estimation and Errors (ReGenesees)

stratif

errors

#units

#units

sample

sample

CORE transformations

CORE transformations

xml

xml
CORE dissemination

Web site, project wiki and many presentations in 2011:

- NTTS Brussels February: Istat
- MSIS Luxembourg May: Istat & Camerino
- MeTTeg Camerino Italy July: Camerino
- SISAI Luxembourg June: Istat
- Meeting organized by Senior Statistician of the Statistical Service of Greece, Crete July: UoA
- Working group for "Technology innovation" by the General Secretariat of Research & Technology, Greece, September: UoA
- METIS workshop Geneva October: CBS & SSB
- ITDG Luxembourg October: Istat
- ESSnet workshop Cologne, Germany October: SSB
- HLG-BAS workshop Geneva November: Istat
Final remarks

Rich results in 13 months:

requirements → general model → software

Relevance of work atmosphere

Good cooperation between countries: WPs shared

Big advancements in meetings: importance of presence → beside wiki tools like webconference?

Good cooperation with other groups: SAB, GSIM, HLG, MSIS, METIS, SDMX ESSnet (deliverable)

Competences, skills and tools to be preserved

Need sponsorship inside NSIs, in Eurostat and in other groups
Conclusions and Possible Future Work

• CORE implementation is a proof-of-concept prototype showing:
  – Real implementation of industrialized (standardized and automated) statistical processes
  – Reuse of IT tools possibly developed on different platforms and by different NSIs
  – GSBPM-aware services implementation
  – A unique common data model enabling integration of heterogeneous data exchanged between services
  – Openness to evolving statistical information models (e.g. GSIM) through a dedicated slot
CORE is NOT a package, but a “new way of working” → CORE component of plug-and-play approach

CORE needs:
- **industrialization**: (test → requirements → implementation)
- **sponsorship** (NSIs, Eurostat)

Links:
- HLG-BAS: cooperation needed (sprints and others)
- Shared work with OCMIMF on GSIM
- SDMX integration and support to SAB