SIDI/SIQual

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SIDI/SIQual:
Information System for Quality Documentation

The SIDI/SIQual system is Istat official system for documenting reference metadata of the statistical production processes

Reference metadata (including standard quality indicators) are stored and continuously updated in the system

Through SIDI/SIQual also ESS standard quality reports are produced

Istat quality reporting is based on SIDI/SIQual

Istat

SIDI/SIQual

Istat official information system for documenting quality and reference metadata of the statistical production processes
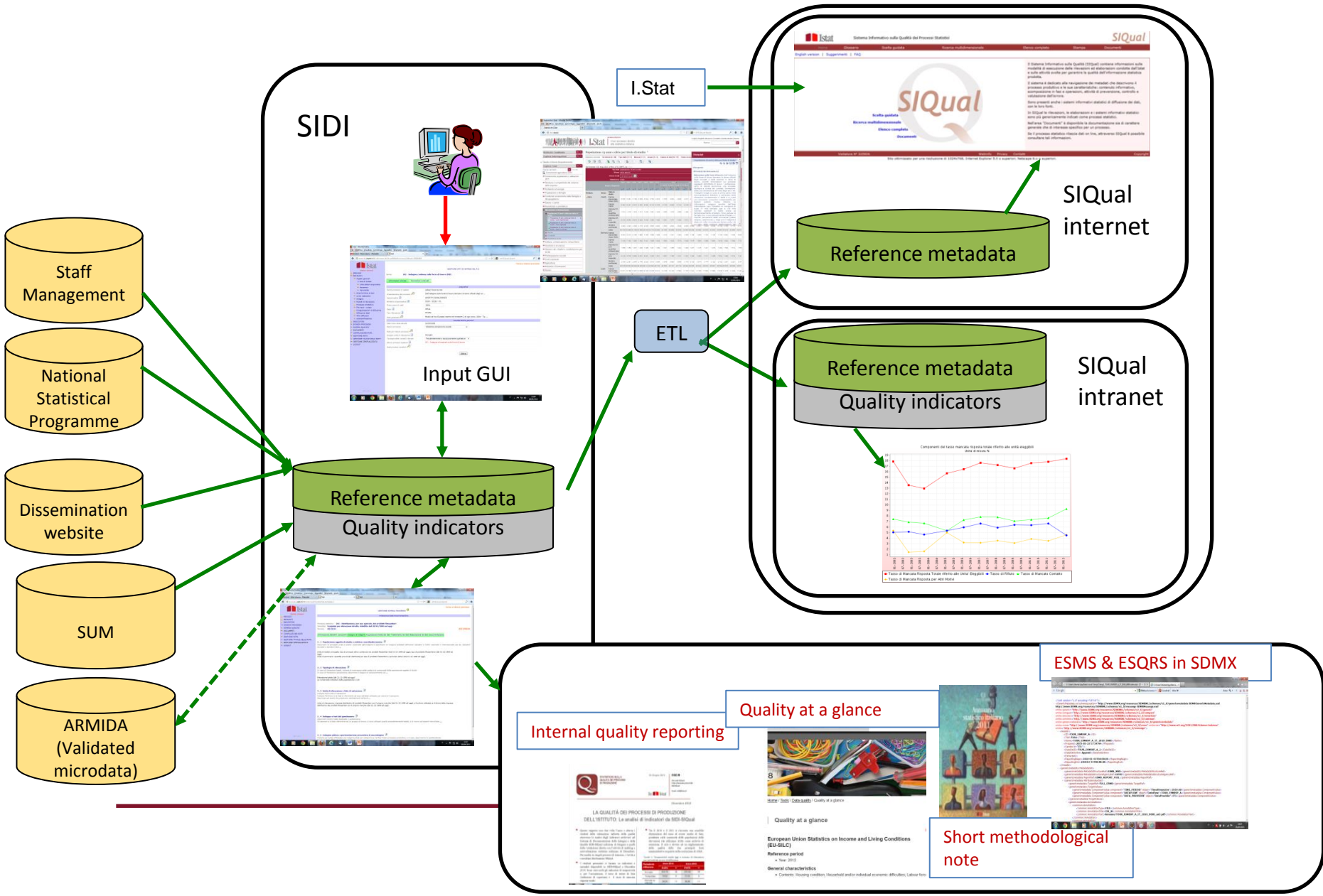
SIDI «input» system, SIQual for consultation

SIDI first implementation in 2001, later converted in a web-based architecture
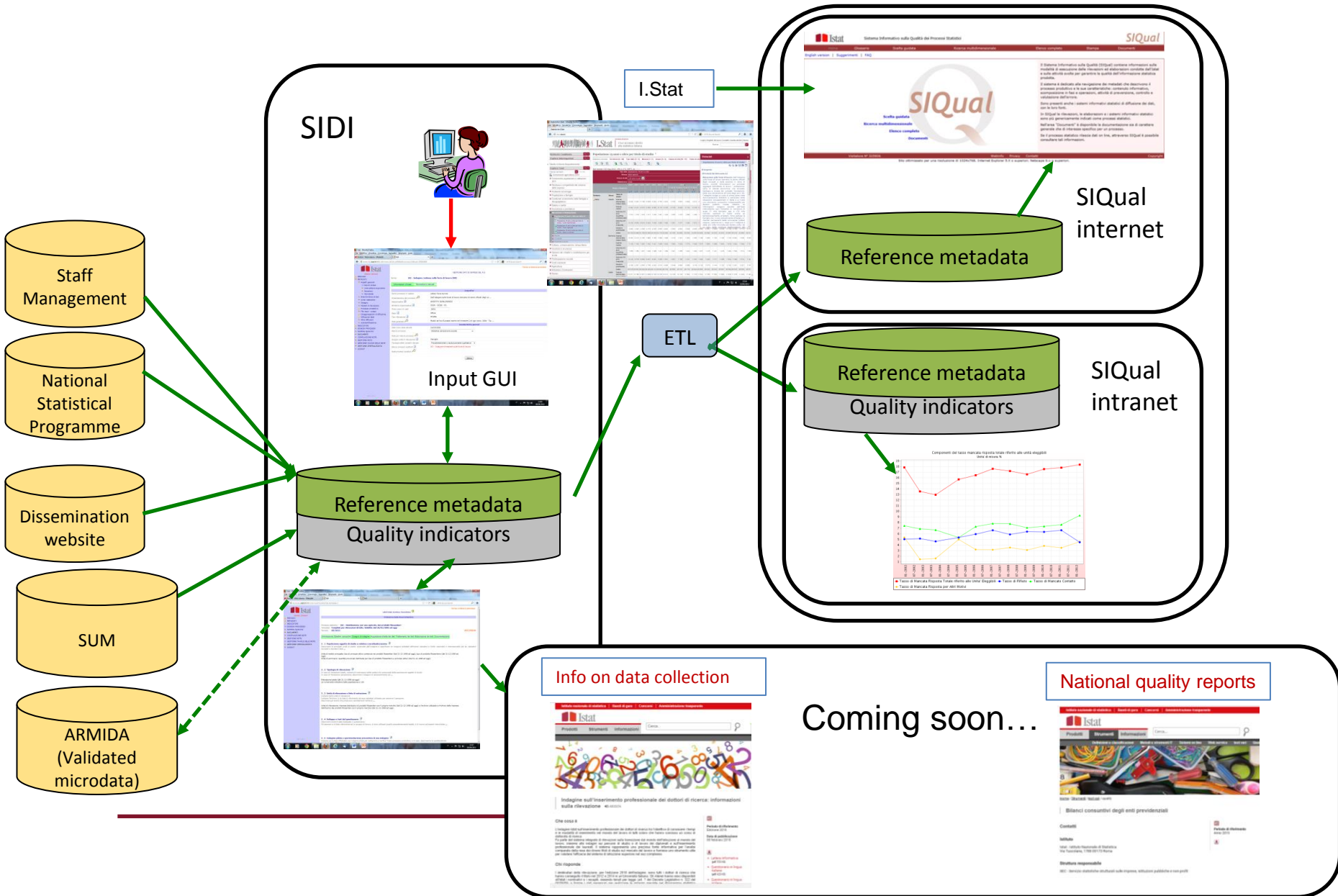
SIQual first release in 2005, English version released in 2008

SIDI/SIQual approach to documentation is highly structured and standardised, descriptive additional fields are available to better describe standard items
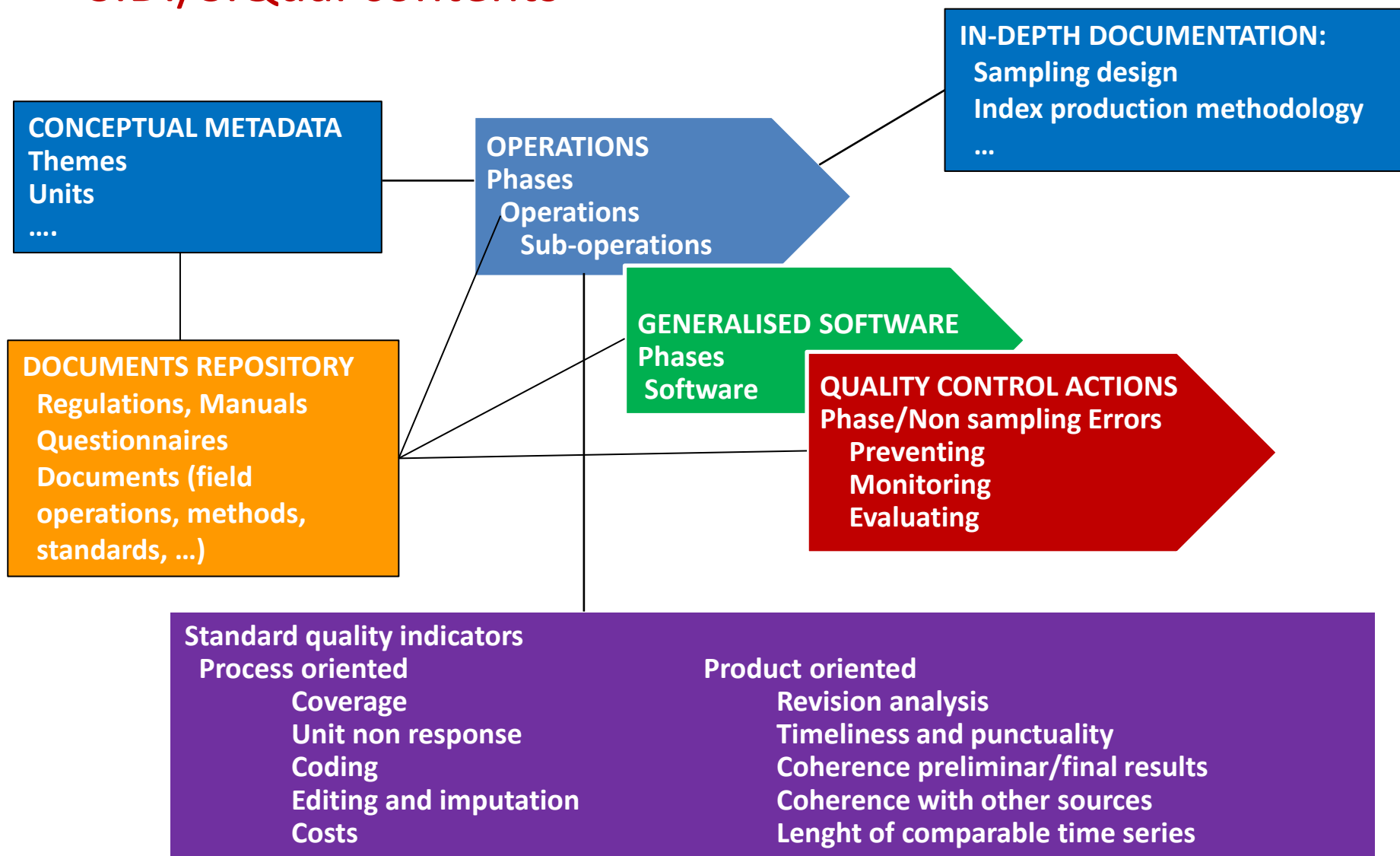
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SIDI/SIQual architecture

Staff Management

National Statistical Programme

Dissemination website

SUM

ARMIDA (Validated microdata)

SIDI

Input GUI

Reference metadata
Quality indicators

I.Stat

ETL

SIQual internet

Reference metadata

SIQual intranet

Reference metadata
Quality indicators

ESMS & ESQRS in SDMX

Quality at a glance

Internal quality reporting

Short methodological note

SIDI/SIQual architecture

SIDI

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Reference metadata

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Reference metadata

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Reference metadata

Quality indicators

Info on data collection

National quality reports

Coming soon…

SIDI/SIQual contents

CONCEPTUAL METADATA
Themes
Units
....

OPERATIONS
Phases
  Operations
    Sub-operations

IN-DEPTH DOCUMENTATION:
  Sampling design
  Index production methodology
  ...

GENERALISED SOFTWARE
Phases
Software

DOCUMENTS REPOSITORY
  Regulations, Manuals
  Questionnaires
  Documents (field operations, methods, standards, ...)

QUALITY CONTROL ACTIONS
Phase/Non sampling Errors
  Preventing
  Monitoring
  Evaluating

Standard quality indicators
  Process oriented
        Coverage
        Unit non response
        Coding
        Editing and imputation
        Costs

        Product oriented
                Revision analysis
                Timeliness and punctuality
                Coherence preliminar/final results
                Coherence with other sources
                Lenght of comparable time series

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SIDI/SIQual reference metadata model: example of operations, quality actions and generalized software

SIDI/SIQual reference metadata model: example of operations, quality actions and generalized software

Operations, quality control actions and generalised software (▦)

Data collection mode

Collapse

- Self-administered data collection via electronic transmission
  - Self-administered data collection by e-questionnaire (Computer Assisted Web Interviewing-CAWI) or through upload of datasets on Istat web site INDATA *(since 31/12/2007)*
    - **Control on unit nonresponse**
      - **Prerequisites for control on unit nonresponse**
        - **Recording and coding of contact outcomes for e-management of follow-ups** *(since 31/12/2007)*
          - Use of the monitoring system for structural business surveys (PERVENUTO) *(since 31/12/2007)*
        - Control on interview outcome codes (completed, refused, noncontacted, duplicated, etc.) *(since 31/12/2007)*
      - **Activities for preventing unit nonresponse**
        - Survey presentation letter signed by Istat President *(since 31/12/2007)*
        - Guarantees on statistical confidentiality *(since 31/12/2007)*
        - Written description of survey objectives *(since 31/12/2007)*
        - Special care in writing clear instructions to fill-in questionnaires *(since 31/12/2007)*
        - Establishing a toll free line or telephone number for further explanations *(since 31/12/2007)*
        - Administrative fines for nonrespondents *(since 31/12/2007)*
        - Special care in drafting clear instructions for database setting up *(since 31/12/2007)*
        - Establishing an e-mail address for information on the web procedure *(since 31/12/2007)*
      - **Follow-ups of nonrespondent units**
        - Telephone follow-ups *(since 31/12/2007)*
        - Mail follow-ups *(since 31/12/2007)*
        - Follow-ups by Postel *(since 31/12/2007)*
        - Follow-ups by e-mail *(since 31/12/2007)*

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Mapping GSBPM and SIDI/SIQual model

GSBPM	ISTAT SIDI/SIQual
1. Specify needs	Planning
2. Design	Frame Development
3. Build	Re-planning
4. Collect	Data Collection
	Data Pre-processing
5. Process	Editing and Imputation
	Data Processing
6. Analyse	Data Validation
	Statistical Disclosure Control
	Dissemination
7. Disseminate	Data Storage
	Documentation
8. Evaluate	Evaluate (QIs and Quality Control)
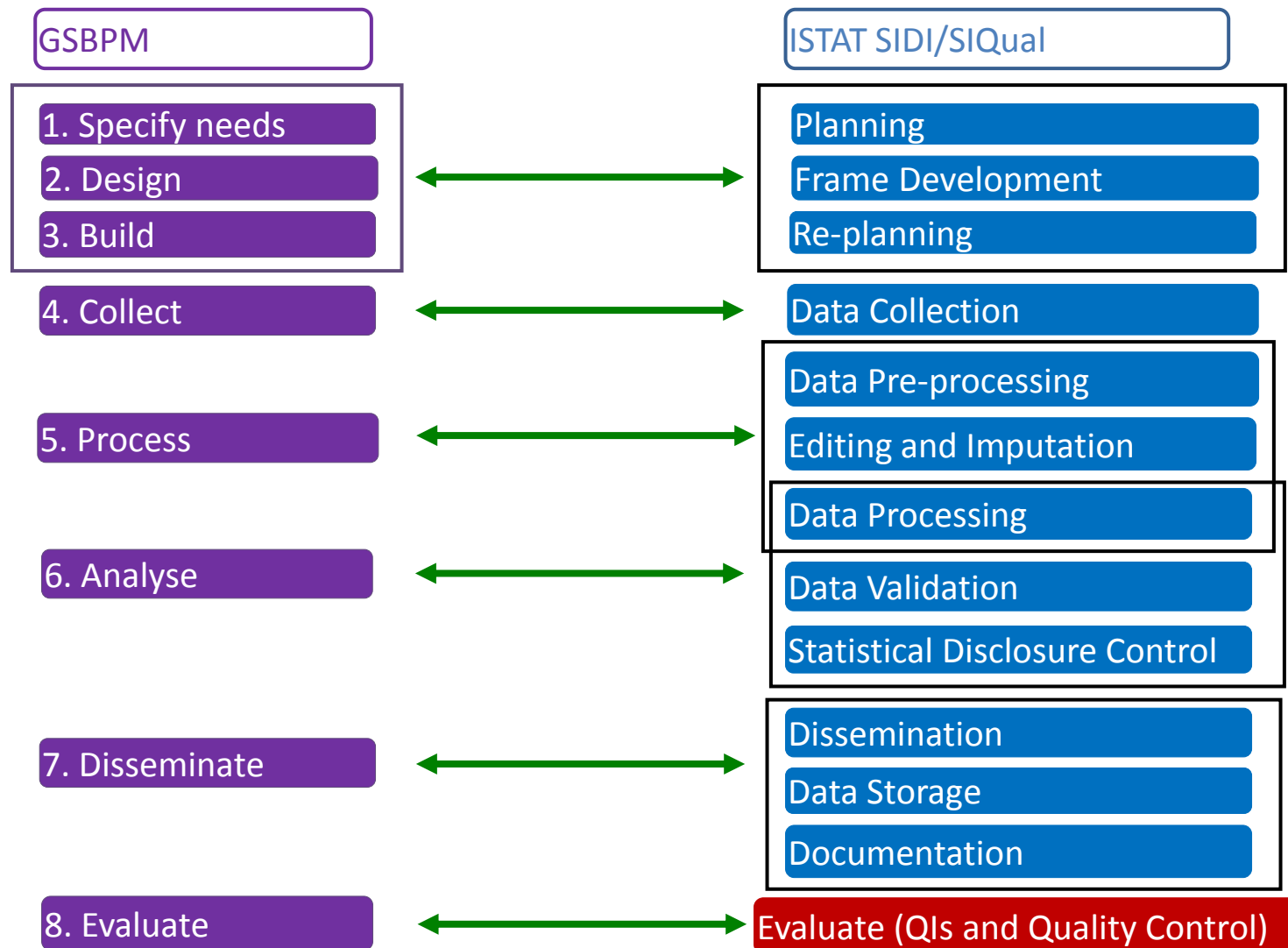
Main characteristics

1. Integrated management of metadata and quality indicators

2. High level of standardisation of documentation to improve comparability

3. Limited burden for "documentation providers". Promotion of integration with other existing systems and development of generalised software to facilitate calculation of quality indicators.

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Main uses of SIDI/SIQual

- process and quality monitoring

- standard quality documentation

- support to produce quality reports

- aggregated quality reporting

- support for statistical auditing and self-assessment procedures

- targeted analyses, e.g. evaluations of innovation effects, quality comparisons among processes sharing similar characteristics, ….

- queries to respond to ESS consultations

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The subsystem for quality reporting

- Most of information required by ESMS and ESQRS already documented in SIDI/SIQual

- Grant 2012 "Horizontal and vertical integration: Implementing technical and statistical standards in the European Statistical System"

Development of a SIDI/SIQual subsystem for quality reporting

Subsystem main advantages

Exploit the already available information

Reduce reporting burden for survey managers

Avoid inconsistencies in metadata and quality reporting

Improve the metadata asset

Enhance internal system to be compliant to international technical standards

Facilitate next re-use

Improve internal coordination, harmonisation and centralised monitoring

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The SIDI/SIQual subsystem for quality reporting

The subsystem includes:

- Procedures (PL/SQL) that extract information from SIDI/SIQual database and reorganise it according to ESMS and ESQRS concepts' requirements

- Management of statistical «products» and of their association to one or more SIDI/SIQual statistical process

- Mapping function to associate PL/SQL procedures to ESMS and ESQRS sections (useful for generalisation)

- Partial automatic pre-compilation of the report and editor to complete compilation

- Creation of SDMX file

- National dissemination of validated ESS quality reports

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The SIDI/SIQual subsystem for quality reporting

The subsystem is highly «generalised»: if Eurostat defines a new standard template it could be easily and quickly adapted

The subsystem itself has already been reused twice:

- to produce the «information on data collection» pages on the website;

- to produce national quality report according to a template that is a subset of SIMS (in progress)

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DEMO

SIQual

http://siqual.istat.it (internet)

http://siqual-intra.istat.it (intranet)

SIDI and quality reporting

http://sidi.istat.it (intranet) SIDI production environment

Summing up the experience (SIDI/SIQual)

o It created a common language, increased the quality culture, increased the awareness on quality control and monitoring

o Each process is unique from the survey manager perspective

o Especially at the beginning, it represented an additional task for survey managers, perceived as scarcely useful for the single survey manager

o European work on quality indicators represented both a stimulus and a constraint

o Highly appreciated when information started to be re-used

o Demanding to keep the pace of technological evolutions

o Demanding to be flexible to changing production environment

FUTURE

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