PROJECTS IN THE EQALM CENTRAL DATABASE

Wim Coucke
Wim.Coucke@sciensano.be

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Projects

- **Halma:**

  Harmonization of Measurands in Laboratory Medicine through Data Aggregation: data collected in 2023

- **Anti-D**:

  Study from immunohaematology working group; data are being collected. So far we have data from 8 EQA providers

- **WG POCT**:

  Pilot study, assessment of method performance for CRP. Selected EQA providers, discussed in WG group meeting

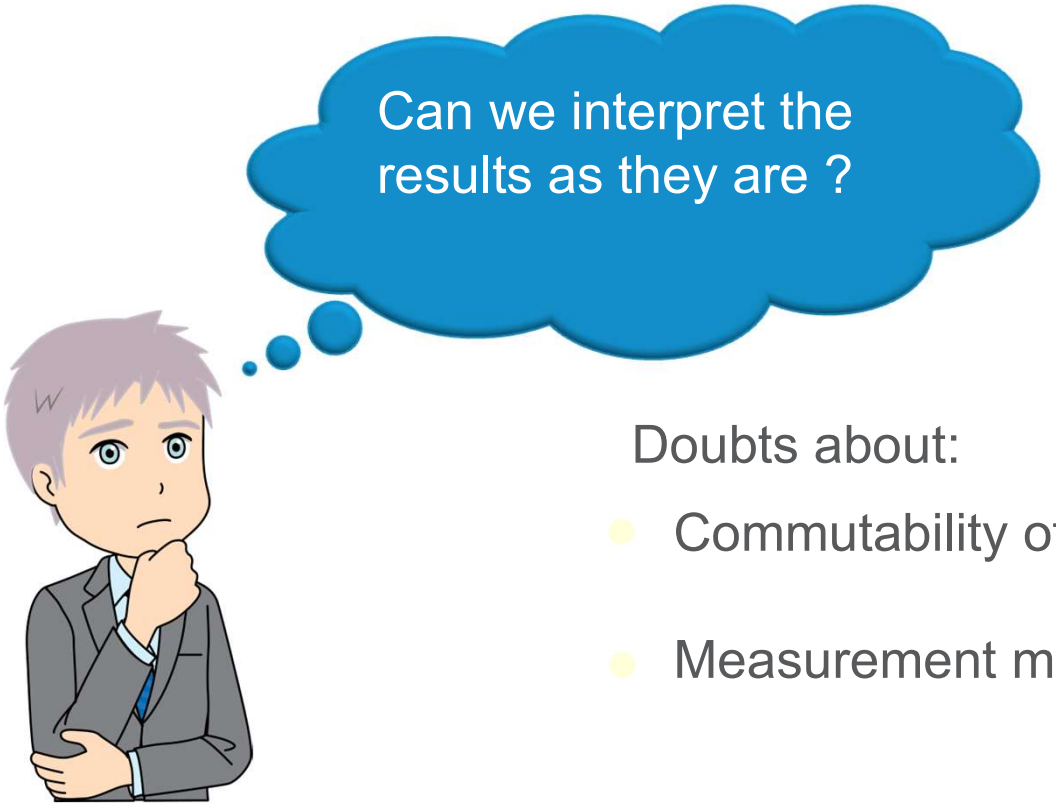
- **Infrastructure improvements**:

  improving the EQALM central database to better respond to actual and future needs

HALMA

- Harmonization results presented last year at EQALM symposium

- We found lack of harmonization for Albumin and Calcium, but better harmonization for Creatinine.



Doubts about:

- Commutability of EQA material
- Measurement method description

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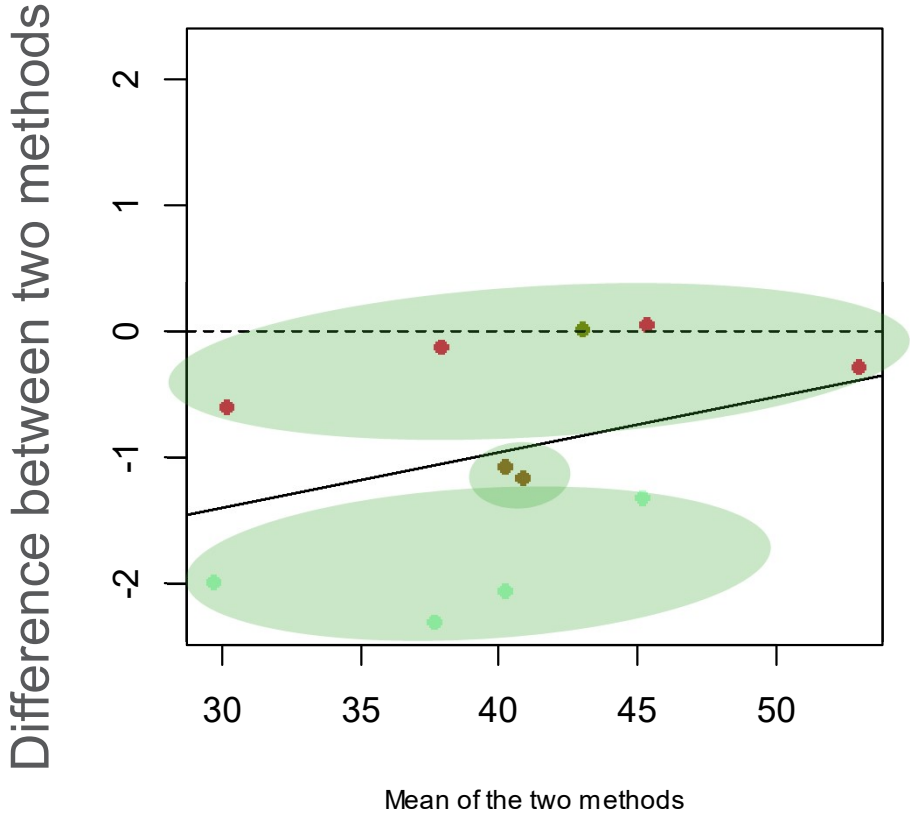
HALMA: commutability of EQA material



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HALMA: commutability of EQA material

- Differences between EQA providers make aggregating data difficult
  - Lack of commutability ?
  - Different reagent or calibrator lots ?

- Development of an algorithm to find similarity between samples of different EQA providers

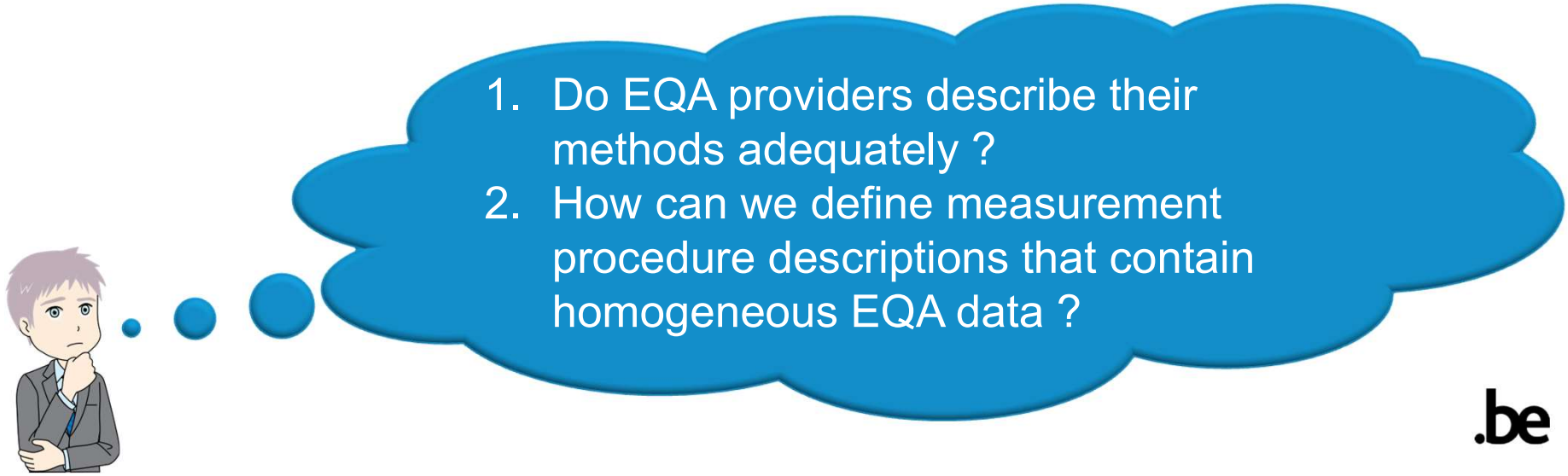
- Development of an algorithm to find homogeneous measurement descriptions

HALMA: Measurement method description

Which granularity do we need to define measurement methods ?

Measurement procedure:

Detailed description of a measurement according to one or more measurement principles, including a description of the logical organization of operations used in a measurement and any calculation to obtain a measurement result



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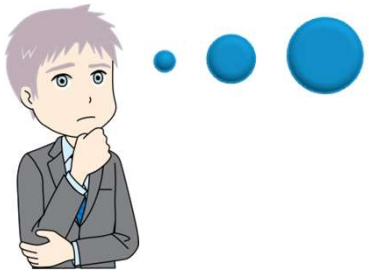
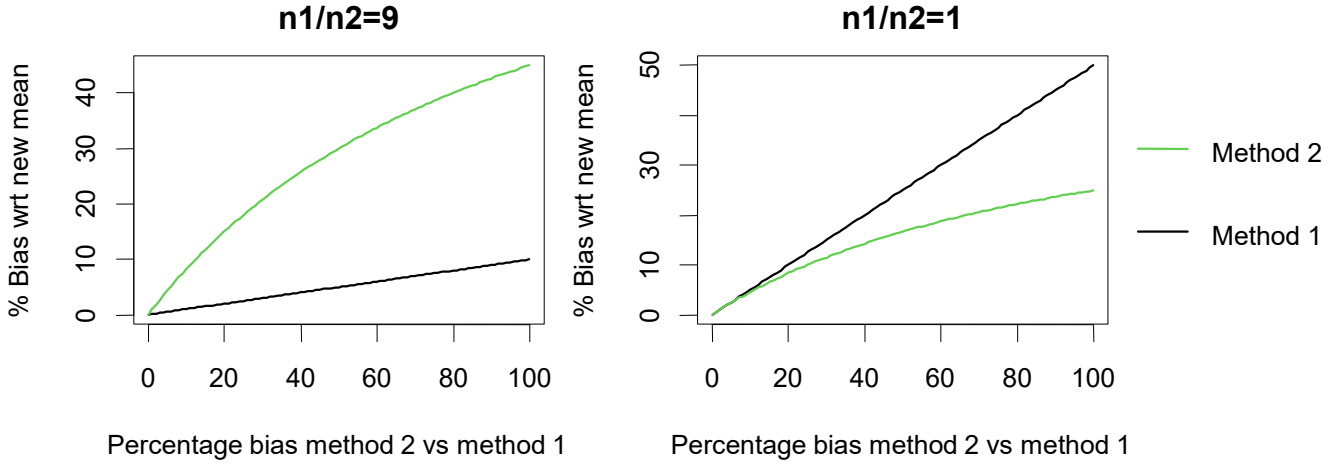
HALMA: Measurement method description

- Development of an algorithm to join or split measurement procedure descriptions



Can two analysers from the same manufacturer, in combination with reagents that use the same analytical principle, be joined or not ?

- Development of criterion for joining groups:
  - Q-scores ?
  - Z-scores ?
  - Evaluation of variability ?
  - Assessing harmonization ?



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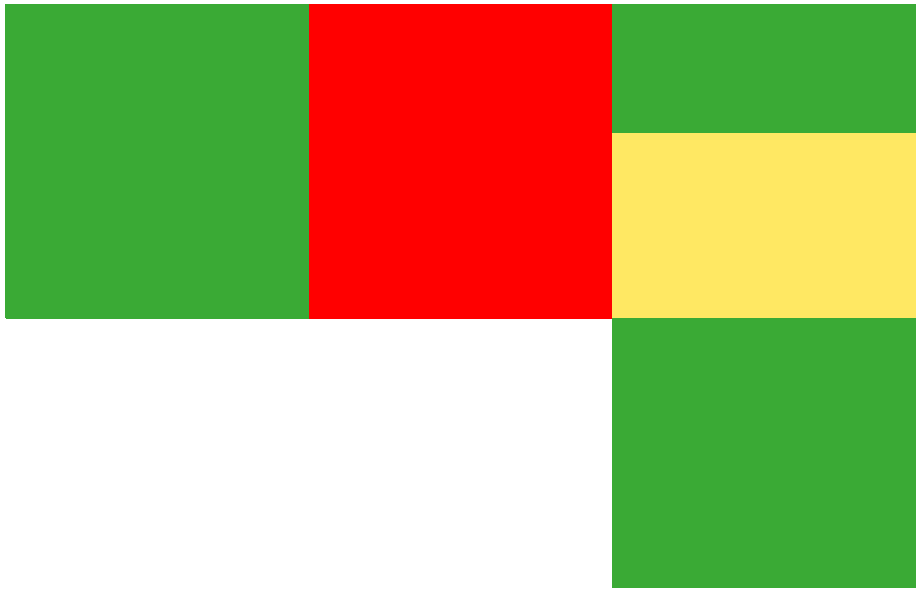
HALMA: measurement method description

Assessment of homogeneity of method groups

- Only for EQA providers that provided enough detail
- Analytical principle, device manufacturer name, device type

Device comparison	Albumin	Calcium	Creatinine
Abbott Alinity <-> Architect			
Siemens Atellica <-> Advia <-> Dimension			
Beckman Coulter AU <-> DxC			
Thermo Fisher Indiko > Konelab			



HALMA: way forward

- Redefine method groups, depending on measurand, analytical principle
- Redefine limits for similarity between EQA providers
- Groups of EQA providers will be identified that have samples for which the differences between measurement procedures are similar
- Commutability of those samples will be assessed formally on a small scale
- In a next data collection round, ask for more details about applied analytical methodology

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Anti-D

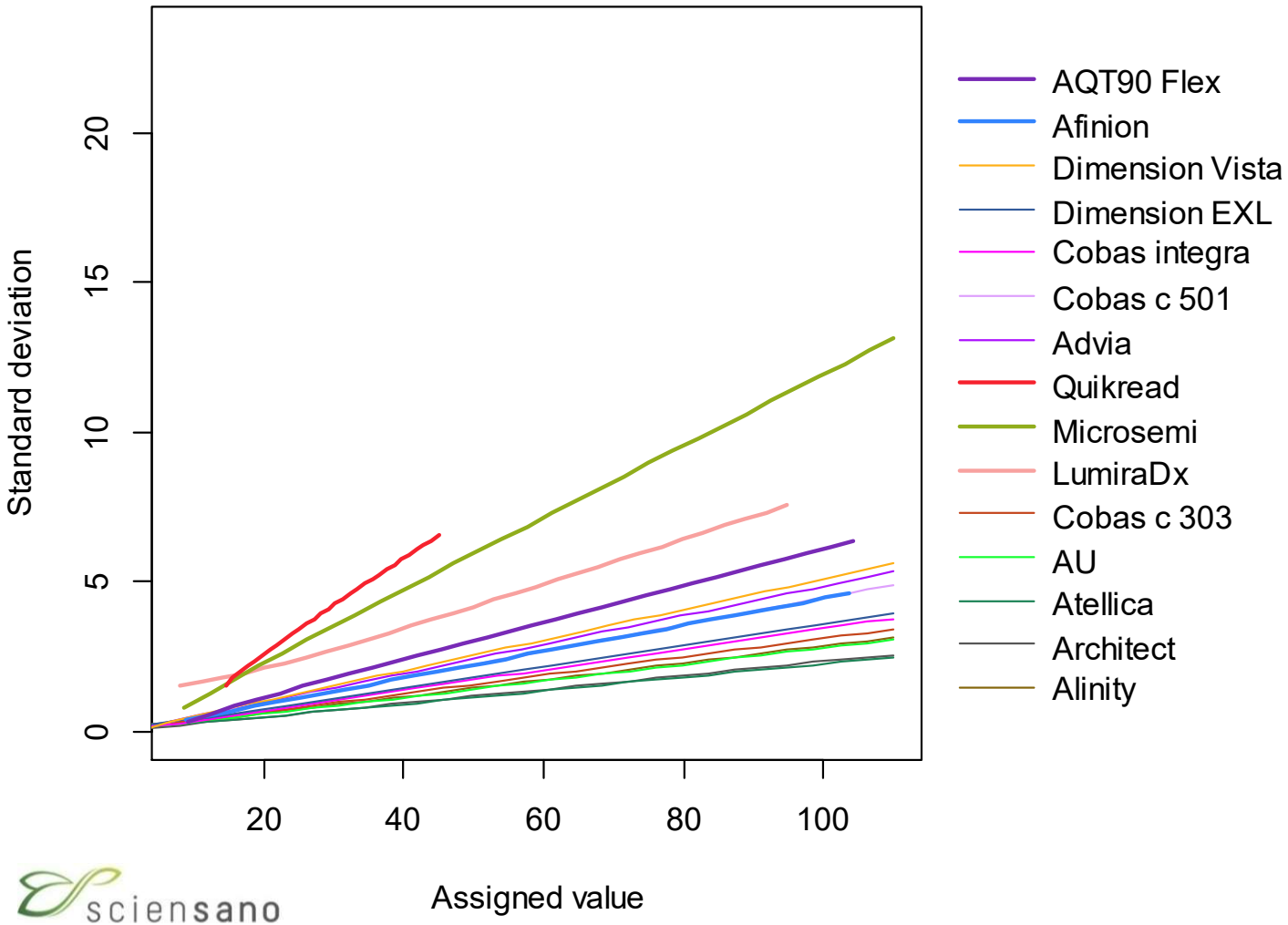
- 4 samples, varying concentration of anti-D
- 10 EQA providers
- Aim: assessing method performance at various concentrations
- Lessons learnt:
    - Harmonisation of reported results
        - Detection/Identification of antibodies
        - Way of reporting methodology

WG POCT

- Performance of POCT devices and comparing with laboratory methods in terms of variability for CRP
- 3 EQA providers: Öquasta, RCPAQAP, WEQAS
- 45 samples, 18159 results

WG POCT: results

EQA standard deviation versus assigned value



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WG POCT: conclusions and lessons

- Conclusions
  - Noticeable difference between POCT devices
  - Most POCT devices have higher variability than laboratory methods
  - Afinion has the lowest variability, comparable to laboratory methods

- Lessons learnt
  - Need for more information of POCT measurements, like the operator
  - Need for application of algorithm to define homogeneous groups to assess variability

Infrastructure improvements

- From different projects, we have learnt the following:
  - High diversity in data formats
  - High diversity in reporting units, methods, measurand names
  - Difficulties to select method groups
  - Possible to evaluate methods on an international level
    - Limit of detection/quantification
    - Bias
    - Variability
- We want to work towards a system that:
  - Is easy to add and retrieve data
  - Allows quick processing of data
  - Takes into account preferences of EQA providers sending data

Preparing for COMET project

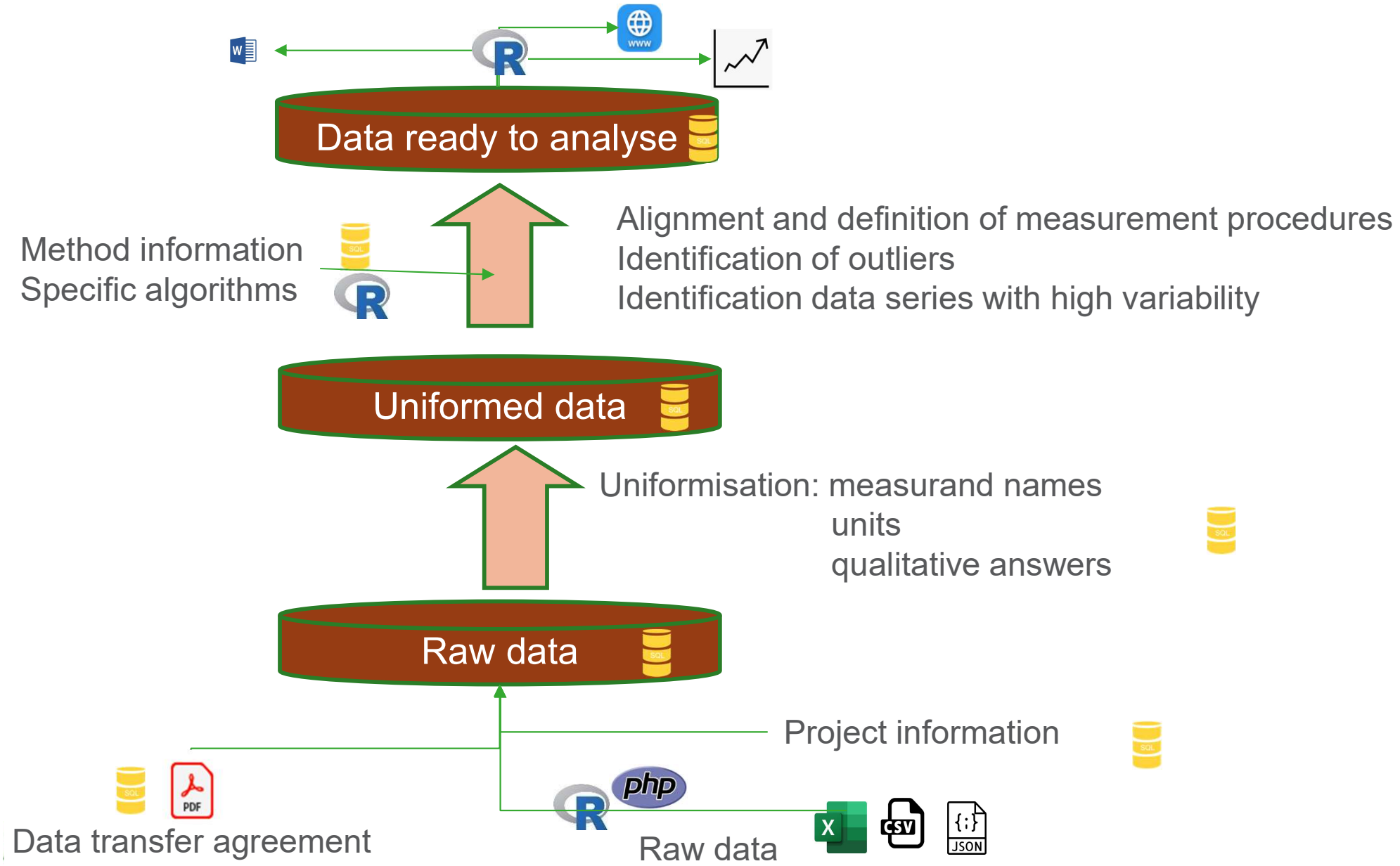
- Centralising retrospective data
- Centralising data from a large-scale EQA
- Development of a framework for performance verification of IVD tests

  Permanent infrastructure

Infrastructure improvements

- Automatising processes:
  - Reading in data: done, as far as a template is followed
    - User friendly environment needed for data not following a template
  - Uniforming data:
    - Translation tables for uniforming textual information
    - Automatic outlier detection algorithm for quantitative results
    - Automatic detection of data series with high variability
  - Alignment of methods:
    - Tables to link uniform method descriptions to method groups to be analysed

EQALM central database: schematic overview



Questions, suggestions