OpenBIS pilot phase @ Concrete/Construction Chemistry Lab

Michele Griffa[1], Janis Justs[1] , Nikolajs Toropovs[1]

[1] Concrete/Construction Chemistry Laboratory,

Swiss Federal Laboratories for Materials Science and Technology (Empa), ETH Domain

Summary data

- Pilot phase start: 13. January 2020
- People involved:

Michele Griffa
(data mining)

Janis Justs
(labs management)

Nikolaj Toropovs
(measurements)

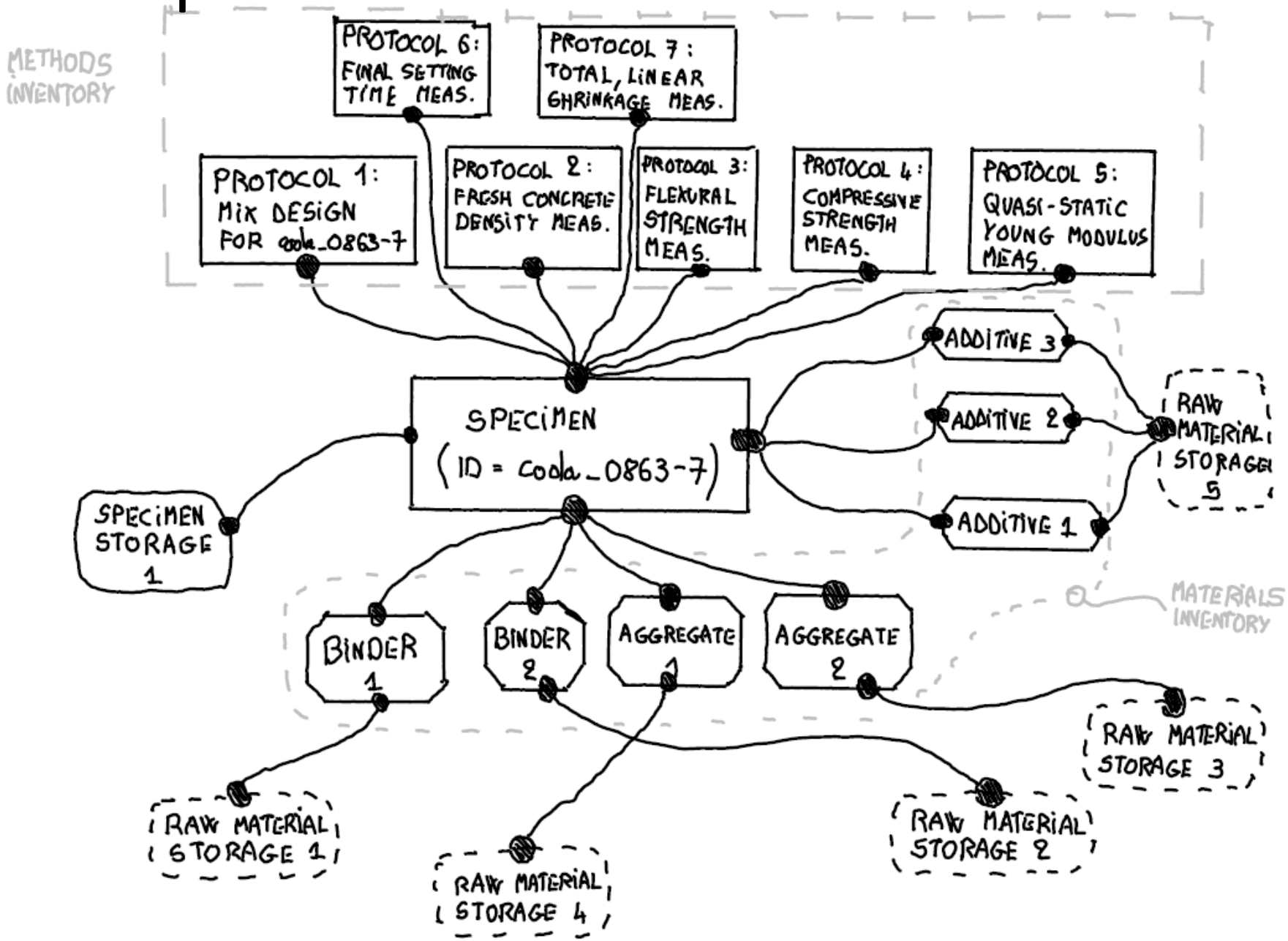
- Cumulative man-hours (up to 23. Febr.): 132

Starting concept

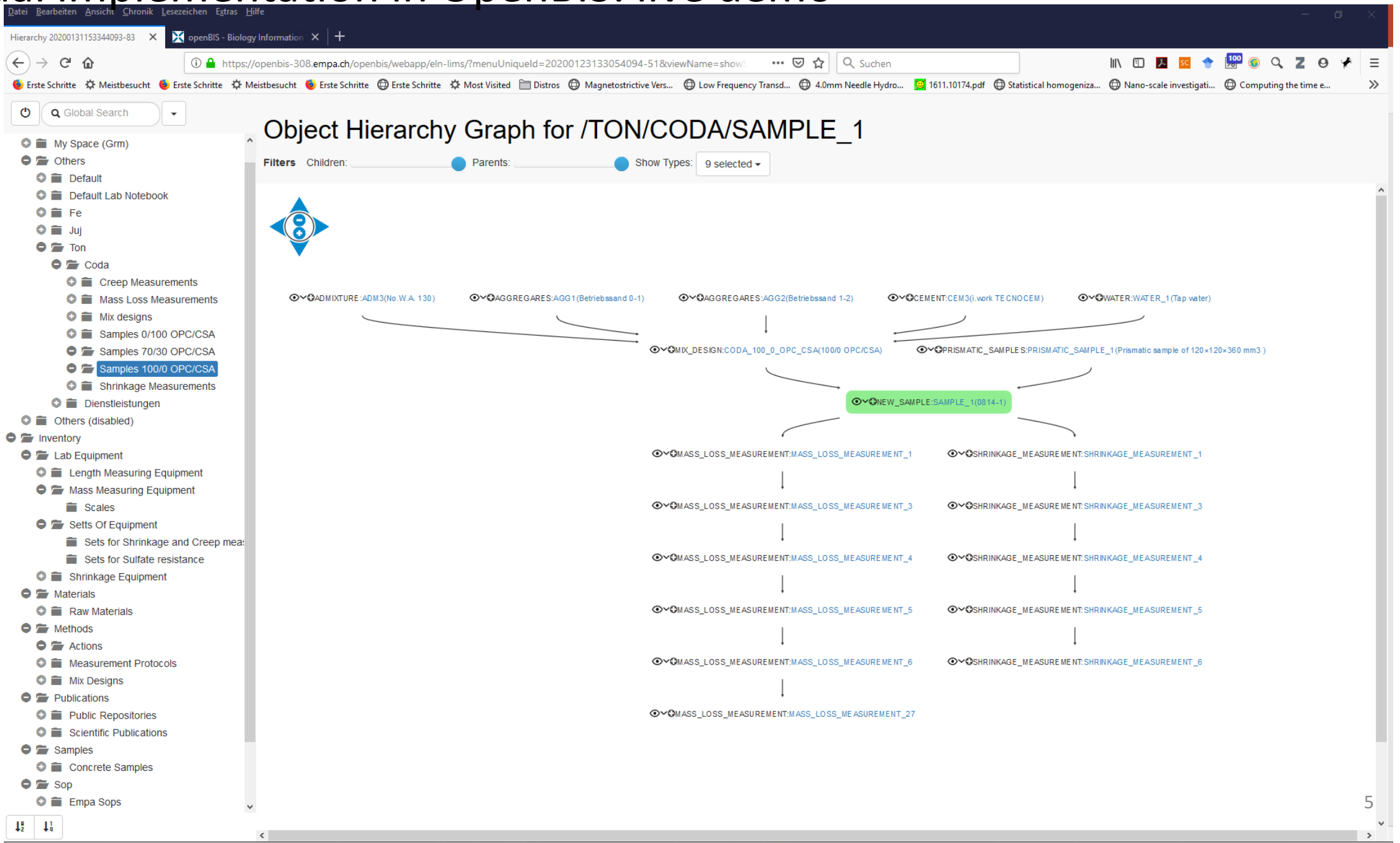
- Offer users predefined data structures/data for
  - measurement protocols
  - measured data
  - lab instruments and equipment
  - raw materials for specimens

- Start with an example of extensive dataset from one specific project
- Focus only on experiments
- Build upon pre-existing data structures (creep/shrinkage data mining project in collaboration with BASF)

Starting concept



Actual implementation in OpenBIS: live demo



Feedbacks to Empa/ETHZ

- Can OpenBIS be extensively customized for the Materials Science and Engineering fields?

  Yes!
  Have no doubt about it!

- Is the customization easy and the learning curve with low gradient?

  Yes but … expect some intense thinking about your daily operations!

- Does a Lab need a programming geek to start to use OpenBIS?

  No (if an Empa community of OpenBIS geeks is fostered!)

- Do we urgently/necessarily need large scale data storage associated with the OpenBIS instance?

  No! For the time being, metadata have priority

- Do we want to roll out OpenBIS for managing/supporting the Lab's research activities fast?

  Absolutely yes!

Plan for the future (till end 2020)

- Expand the data structure developed so far
- Pilot testing with two PhD student projects
- Test the Java/Python/Matlab APIs for

    1. simple plotting of stored data
    2. programmatic report generation from logged data and metadata
    3. programmatic data streaming from (a) few lab instruments to OpenBIS objects