IBPSA Project 1

International Building Performance Simulation Association

Work Package 2.2 - Building Information Modeling (BIM)

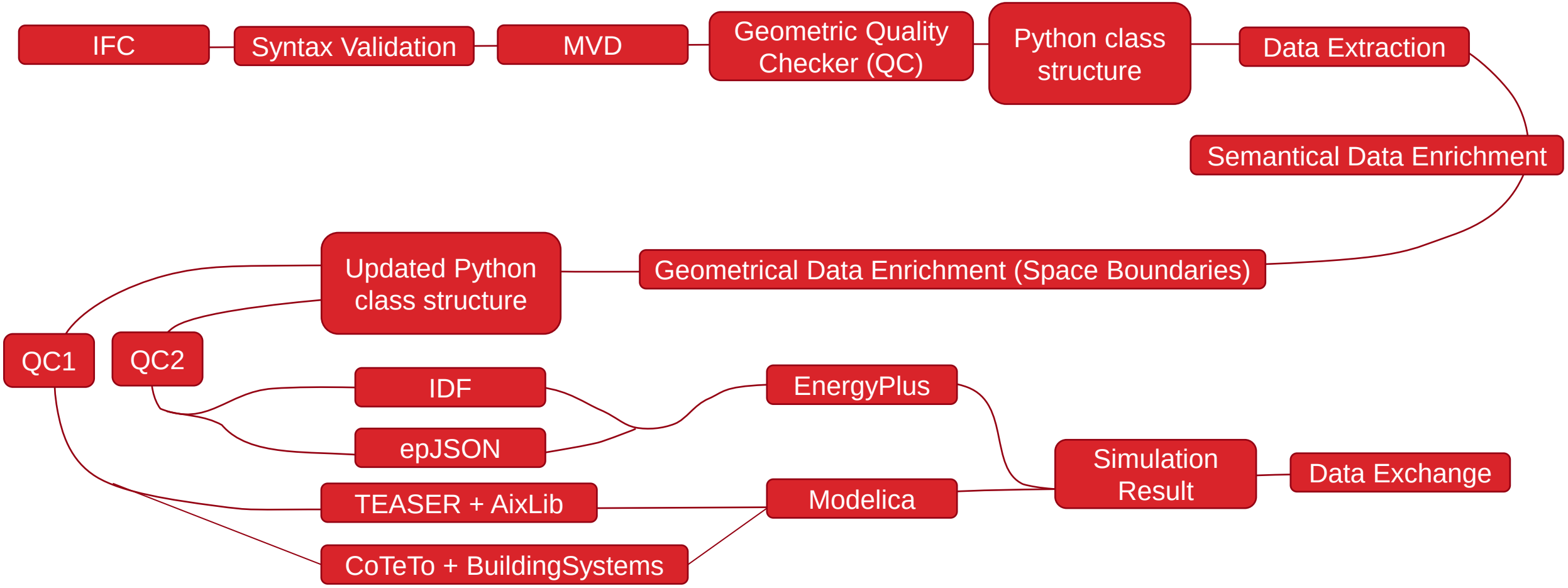
Web Meeting, 13 and 14 October 2020

Quick reminder: Goals some years ago...

Content	Method	Result
▪ **Space boundary** algorithms for model topology analysis and multi-scale simulation model generation ▪ **Update exchange** with Energy Plus	▪ **Review** of existing approaches, algorithms, codes and model checkers ▪ Evaluation of **best-in-class algorithms** for model-garbage analysis and processing ▪ Decision on **development path** and code re-use ▪ Development of **modular tools** for space boundary and model topology analysis	▪ Joint journal **publication** / review paper ▪ **GIT repository** with modular tools

Aimed Workflow

- Subprocesses for simulation model preparation with focus on data enrichment



Status

In last period of five months, progress in several subprocesses, e.g.

- Geometrical setup for EnergyPlus, HVAC module extraction from BIM and Space Boundary generation

Advanced progress and finished tasks

- Model View Definition
- Building Model Quality Check
- Data extraction from IFC into Python structure
- Semantical data enrichement using multistage user decision system
- TEASER based simulation

Aim for break-out groups

- Presentation and discussion of current state of EnergyPlus tool chain
- Presentation and discussion of current state of Modelica tool chain
- Updates from various subprocesses
- Discussion on application example for entire toolchain

Prospect

Aims for spring meeting 2021

- Space Boundary generation algorithm ready for action for selected buildings
- EnergyPlus ready for action for selected buildings based on SB generation
- Data exchange (geometrical model, simulation results from EnergyPlus e.g. surface temperatures) with CFD
- HVAC Modelica module based library for HVAC simulation
- *Exemplaric demonstration of tool chain, specifying missing or flawed functions*

Goal for autumn meeting 2021

- *Demonstration of tool chain at real life example, specifying missing or flawed functions*