Automatic Generation of Power Systems in Simulink

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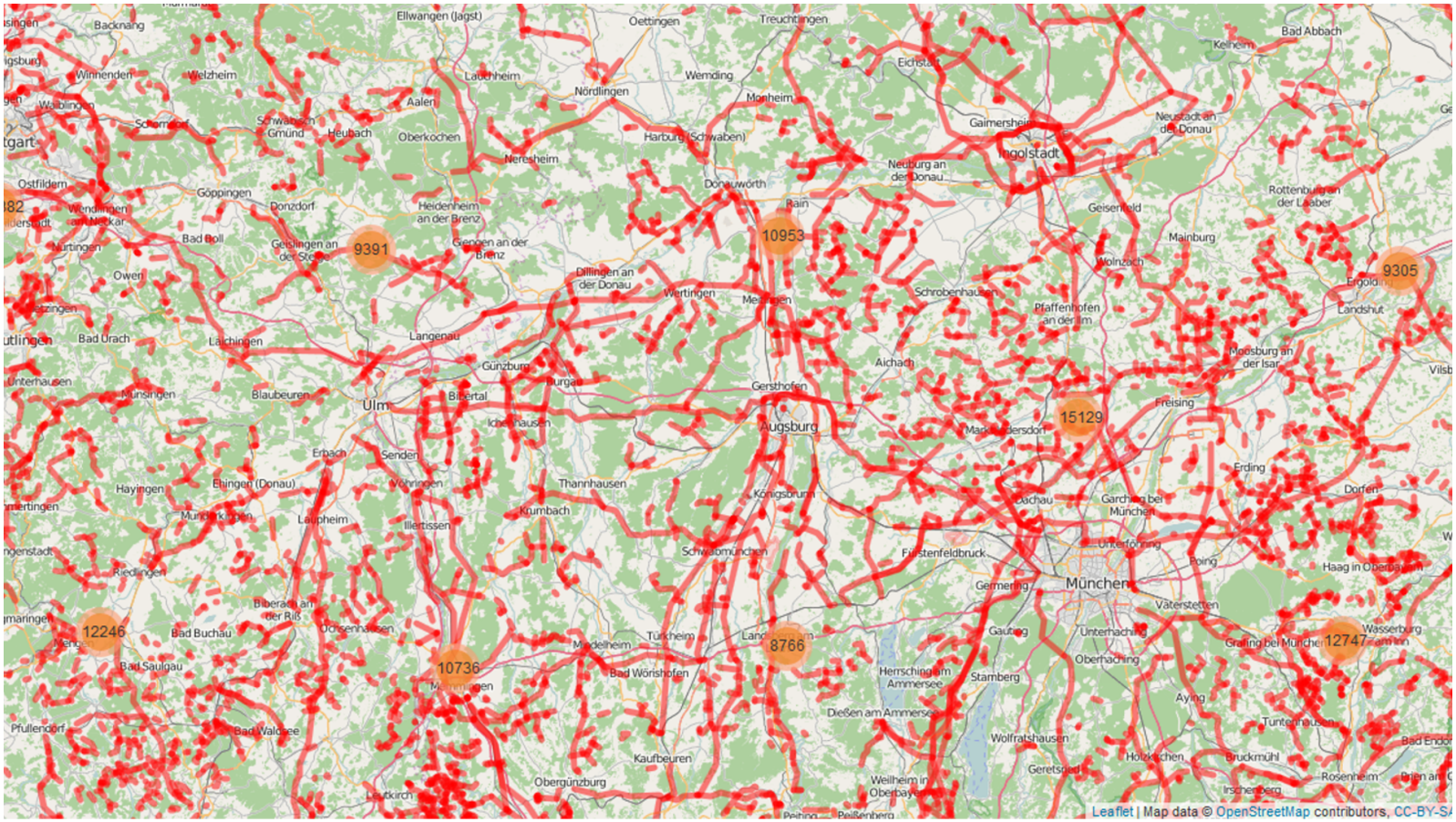
Task Overview

- Large Power Systems
- OpenGridMap
- Simulations
- Writing a Program

OpenGridMap



Common Information Model

- Developed by the '**International Electrotechnical Commission**' (**IEC**)
- Defined in UML as a Class Diagram
- Abstract Model Definition
- Practical usage via several Implementations
- Use of RDF/XML

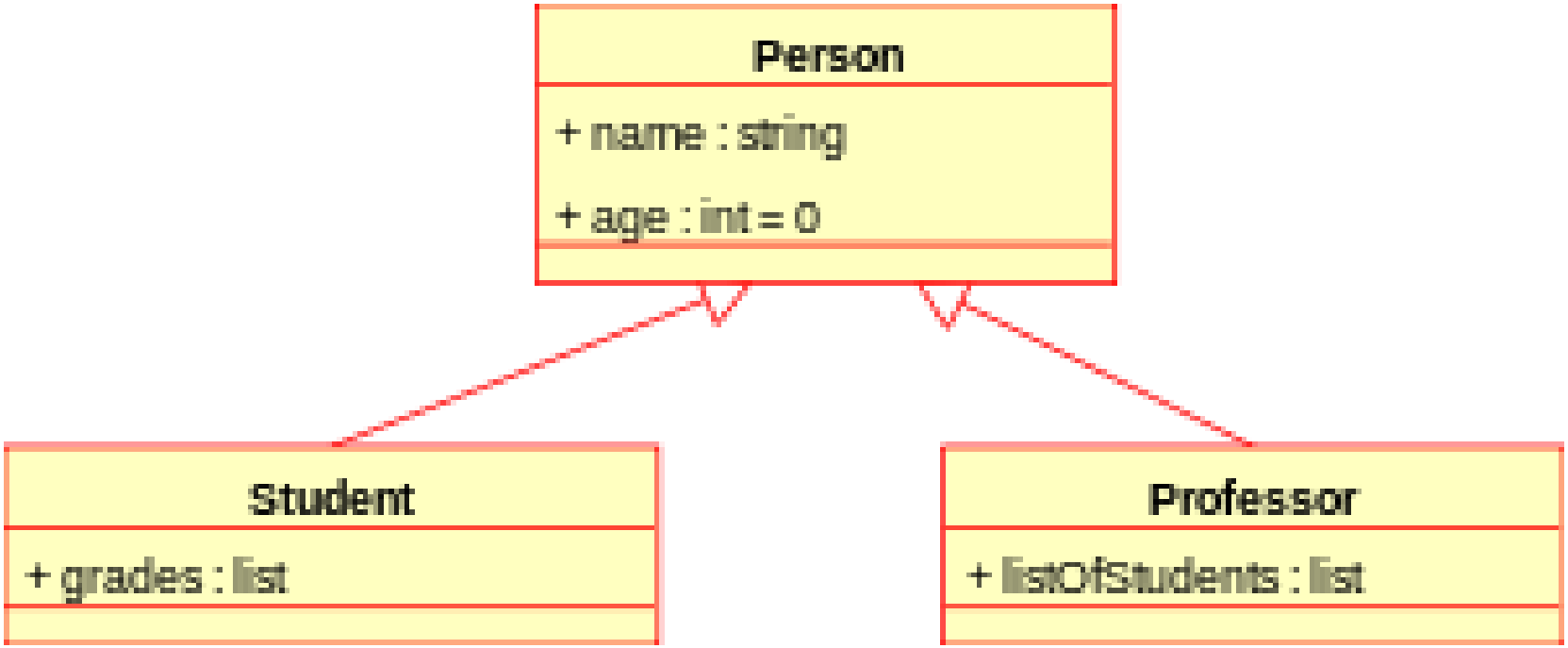
Unified Modelling Language

- Contains several kinds of Diagrams
- Every kind of Diagram is in general one of the following:
  - Behavioral Diagram
  - Structural Diagram
- Class Diagram is a Structural Diagram

Class Diagram

- Class with Attributes and Methods
- Associations
- Aggregations
- Compositions
- Generalization

Example


Person
+ name : string
+ age : int = 0
Student
+ grades : list
Professor
+ listOfStudents : list

Extensible Markup Language

- Language, which brings Documents in a special Format
- Human and Machine readable
- Consists of Tags
  - Start-Tag (<Sentence>)
  - End-Tag (</Sentence>)
  - Empty-Element Tag (<line-break />)

Resource Descriptions Framework

- Abstract Definition
- Makes Statements about Resources
- Resources have the form Subject-Predicate-Object
- RDF/XML
- Using Syntax of XML with Idea of RDF

MATLAB

- Highly developed
- Functional Programming Language
- Interactive Environment

Simulink

- Extension to MATLAB
- Graphical Programming Environment
- Perfect for Simulations
- Consists of placeable Blocks
- Can be modified via MATLAB

Code Review

- Let's take a look at the written code.

Conclusions

- Most Work is done
- Map more CIM Classes to Simulink Objects
- Add more CIM Classes
- Improve Performance
- Add new Functionallities

Questions

Do anybody have a question?

The End

Thanks for your Attention!