

# Composing Software Based on Detailed Specification in Natural Language

## Problem

- Software development takes a lot of effort.
- EUSE approaches fail to create complex software and specific languages have to be used, which is highly limiting.

## Our approach

- Compose software prototype by detailed specification.
- The detailed specification is a new use case body part in the form of a natural language.
- Based on the detailed specification existing software components are automatically configured and composed to the software prototype.
- The composition employs semantic lookup for recognizing and configuring components.
- Our approach is especially suitable for prototyping.
- In combination with UI generation tools seems particularly promising.

## Results

Participants – 15  
Use cases – 45  
Components – 90

Identification of components (from 90)  
Recall 68.51%, Precision 90.17%

Identification of methods (from 38)  
Recall 75.71%, Precision 75.71%

Configuration of input arguments (from 37)  
Recall 73.15%, Precision 59.81%

Composition of components (from 63)  
Recall 100.00%, Precision 100.00%

