

BPMN2Asbru: Transforming condition-terms of CPG into Asbru



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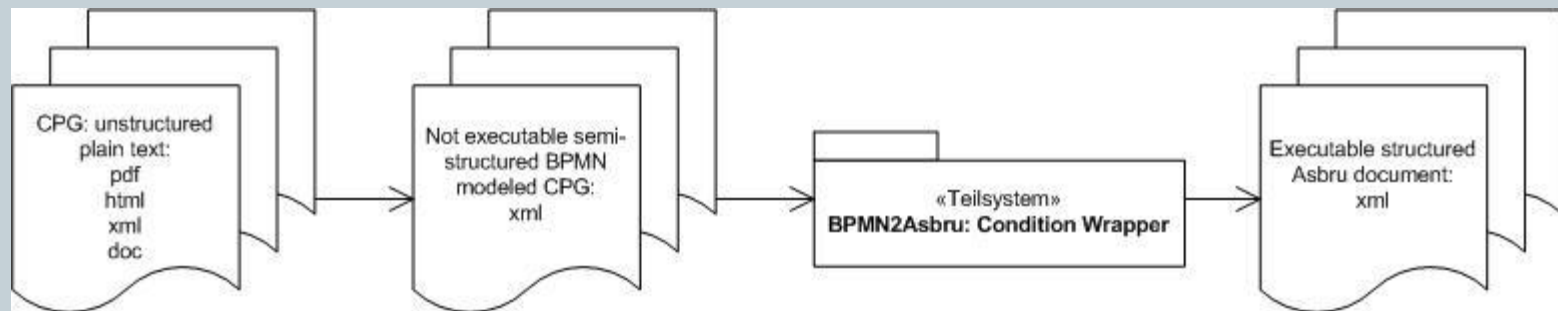
**Project/Seminar @ Information Engineering
Group**

WS2012 – University of Technology Vienna

Introduction



- CPG: unstructured plain-text -> not executable
- A need to execute the described processes
- Asgaard/Asbru: execute skeletal plans; structured and defined, using XML

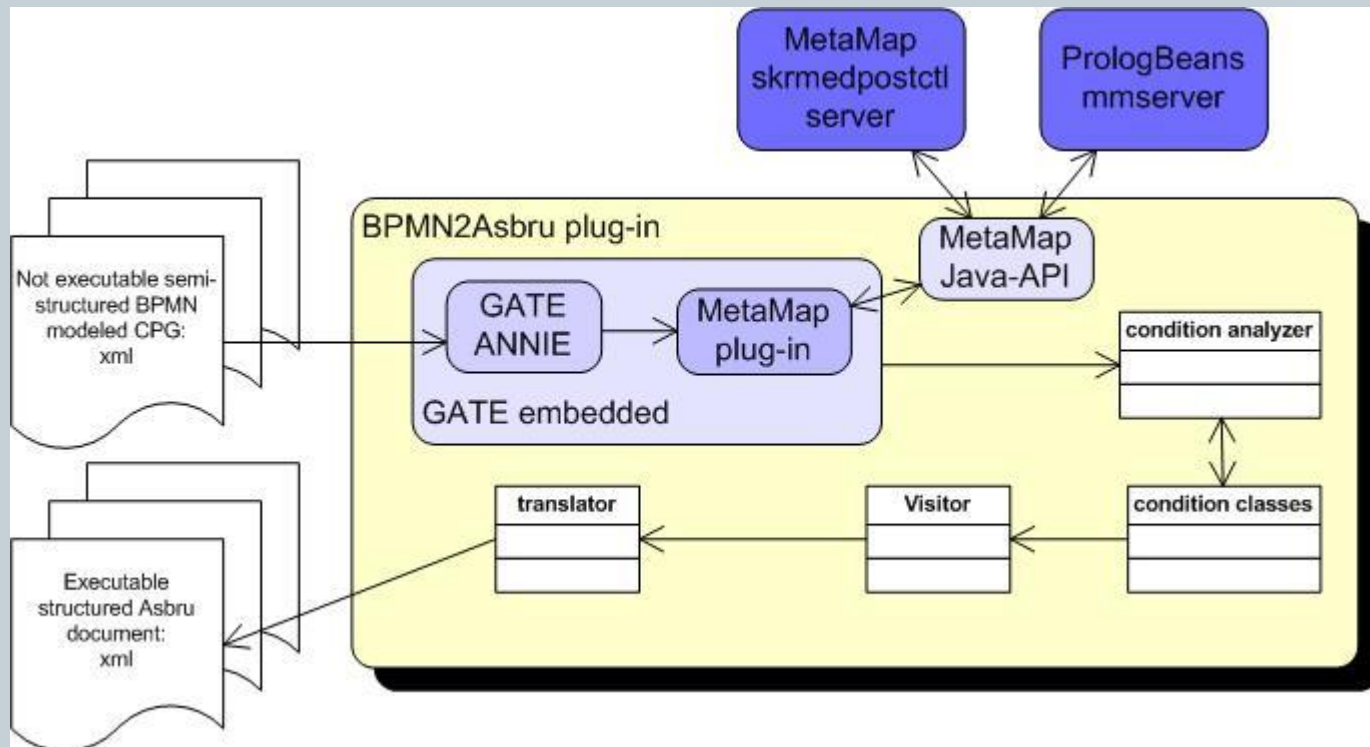


Existing Work



- Many different approaches for information extraction in general
- Supporting the Abstraction of Clinical Practice Guidelines Using Information Extraction
- Information Extraction Approach for Clinical Practice Guidelines Representation in a Medical Decision Support System
- Medical practice guidelines and protocols: the Asgaard/Asbru project

Design I



Design II



- Java plug-in using the IDE Eclipse
- Console Application for Testing
- Input & Output: each a file
- GATE embedded
- MetaMap (2 servers): process the conditions using UMLS
- Choose results -> arrange in different classes
- Visitor pattern
- Translator -> creates Asbru conditions

Results I



Input

```
<!-- ... -->  
<conditionExpression id="sid-5023436a-4626-4cc2-b79e-27d5dad70e70"  
  xsi:type="tFormalExpression">For patients who have 1 of  
  the following less well-validated risk factors (age 65 to 74 y, female  
  gender, or CAD)  
</conditionExpression>  
<!-- ... -->
```

Results II



Output

```
<!-- ... -->
<simple-condition>
  <simple-condition-combination type="or">
    <is-within-range>
      <expression>
        <!--...--><parameter-ref name="age" />
      </expression>
      <value-range>
        <lower-bound>
          <expression><!--...--><numerical-constant value="65" /></expression>
        </lower-bound>
        <!--...<upper-bound>...conditions for gender and CAD -->
      </value-range>
    </is-within-range>
  </simple-condition-combination>
</simple-condition>
<!--...-->
```

Discussion



- weakness: not all condition semantics are identified, especially not the complex ones
- future work: improve the weaknesses (better usage of the MetaMap results)
- Experiences:
 - Java/Eclipse: unfamiliar → I am used to VS .net
 - GATE embedded: easy to set up / well documented
 - MetaMap: 2 servers; plug-in for gate; results are difficult to process

Thank you!



Q & A

