



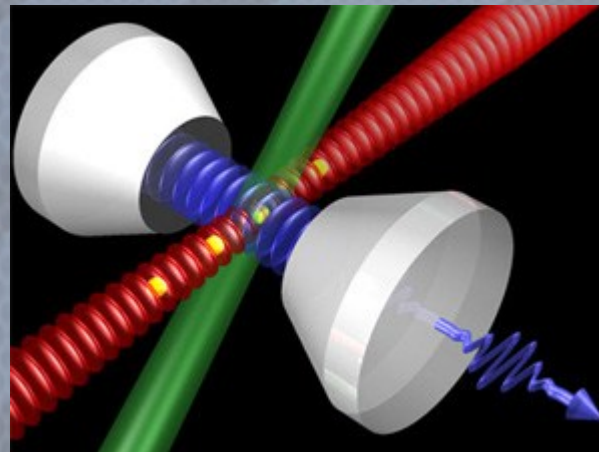
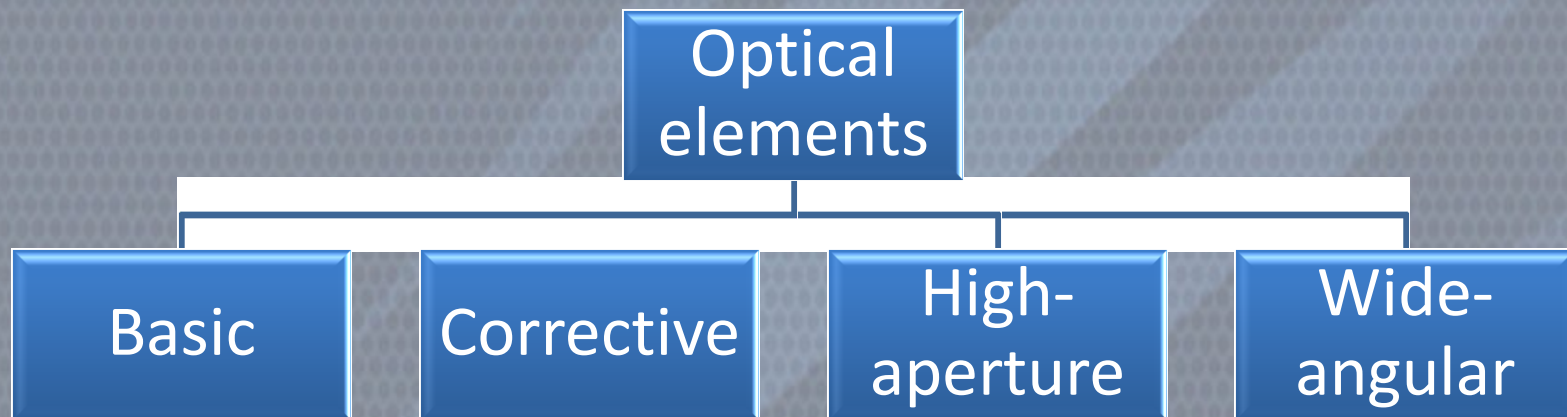
VODRE: Visualisation of Drools Rules Execution

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15th FRUCT Conference
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Introduction to Domain Area

The derivation of element sequence to result in the specific optical characteristic is referred to as structural synthesis.



Starting Point Choice



Successful result

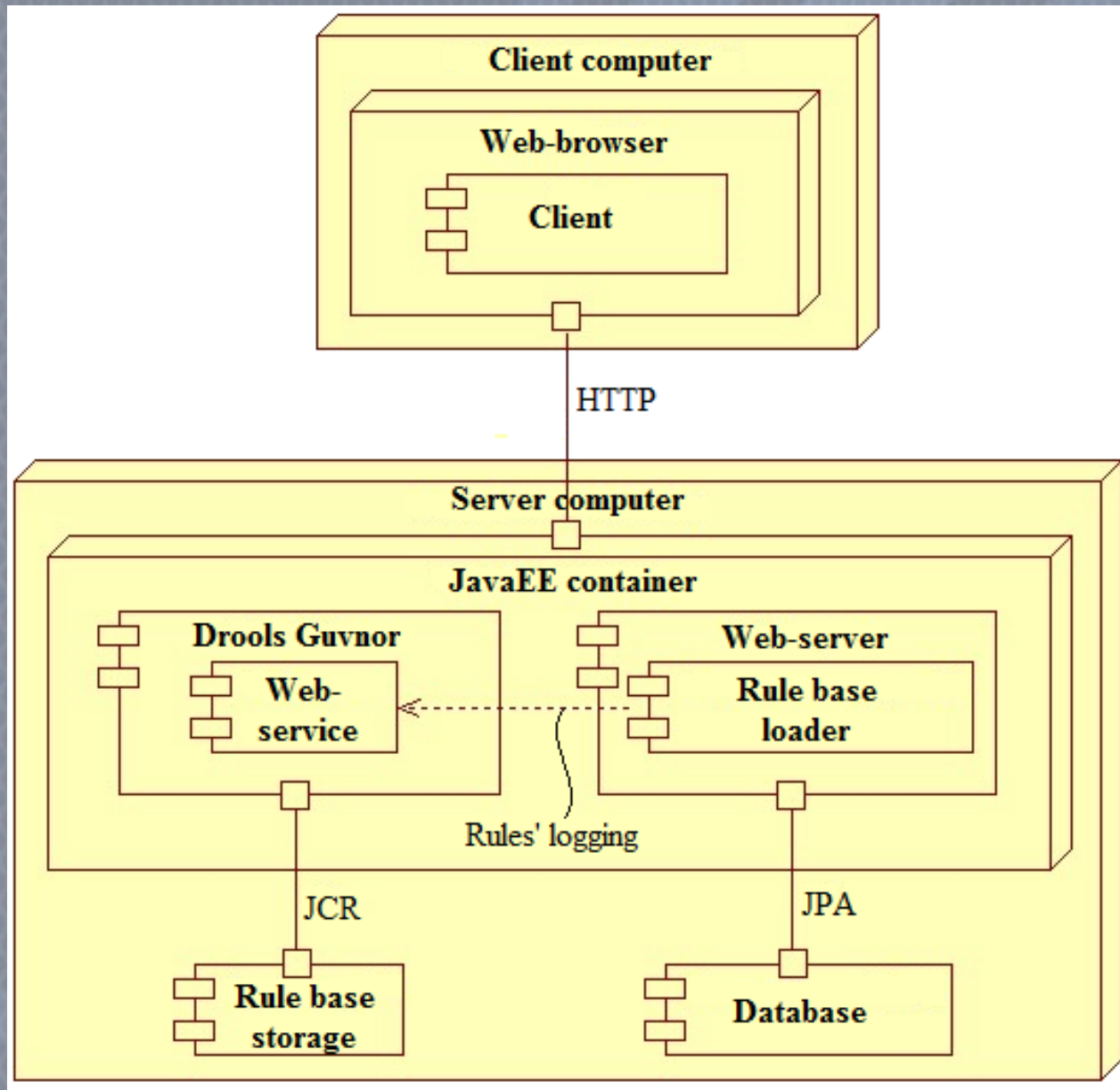


Starting point choice

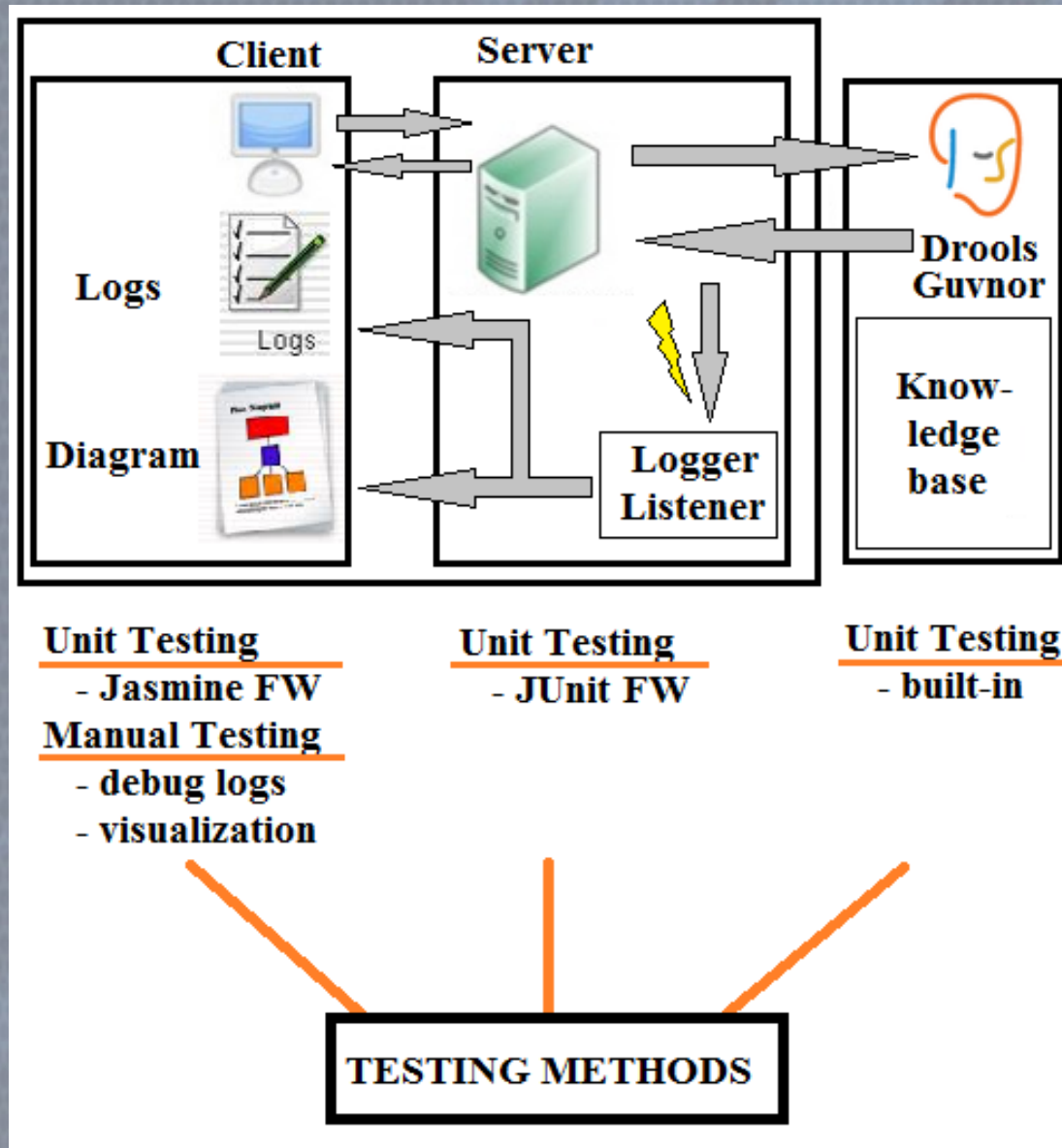


Wasteful work

System Components



System Validation



Logger Class Diagram

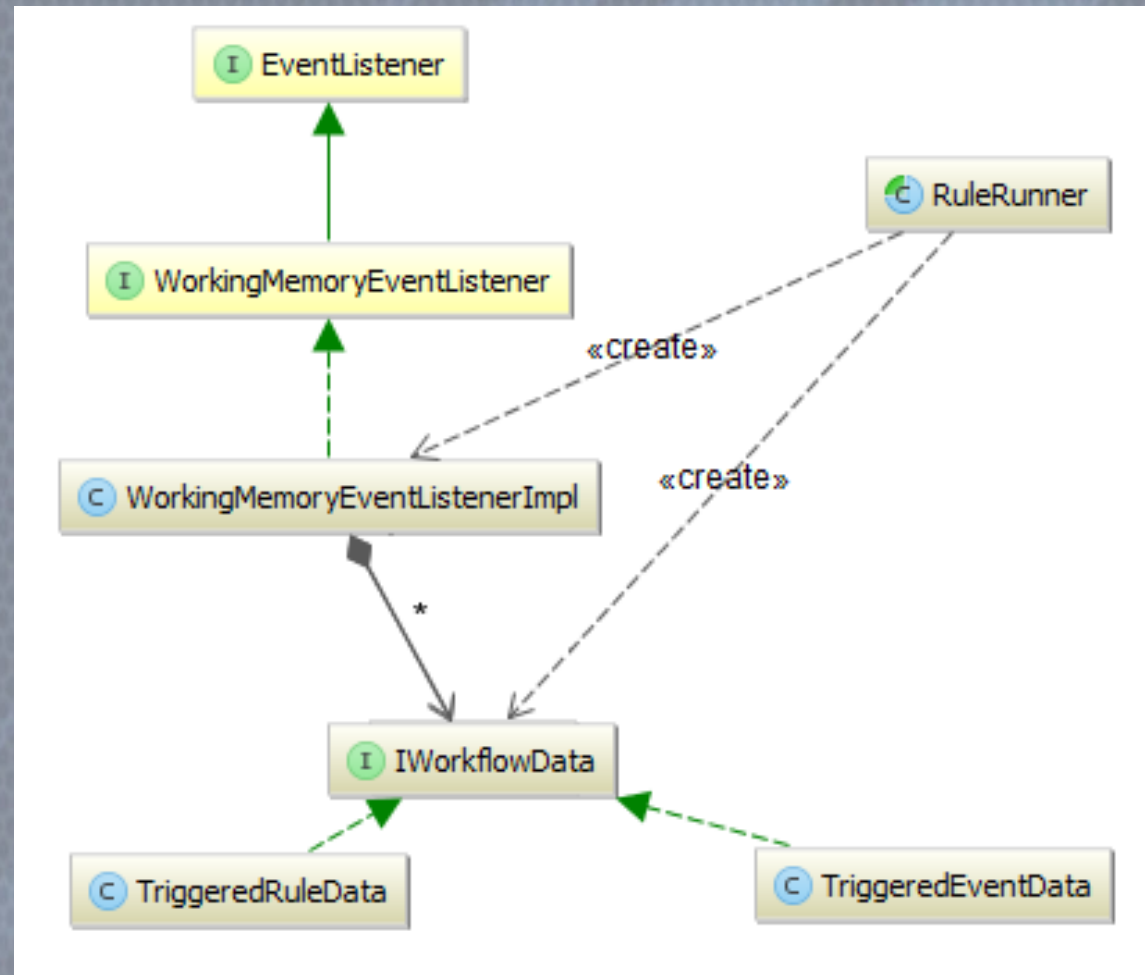
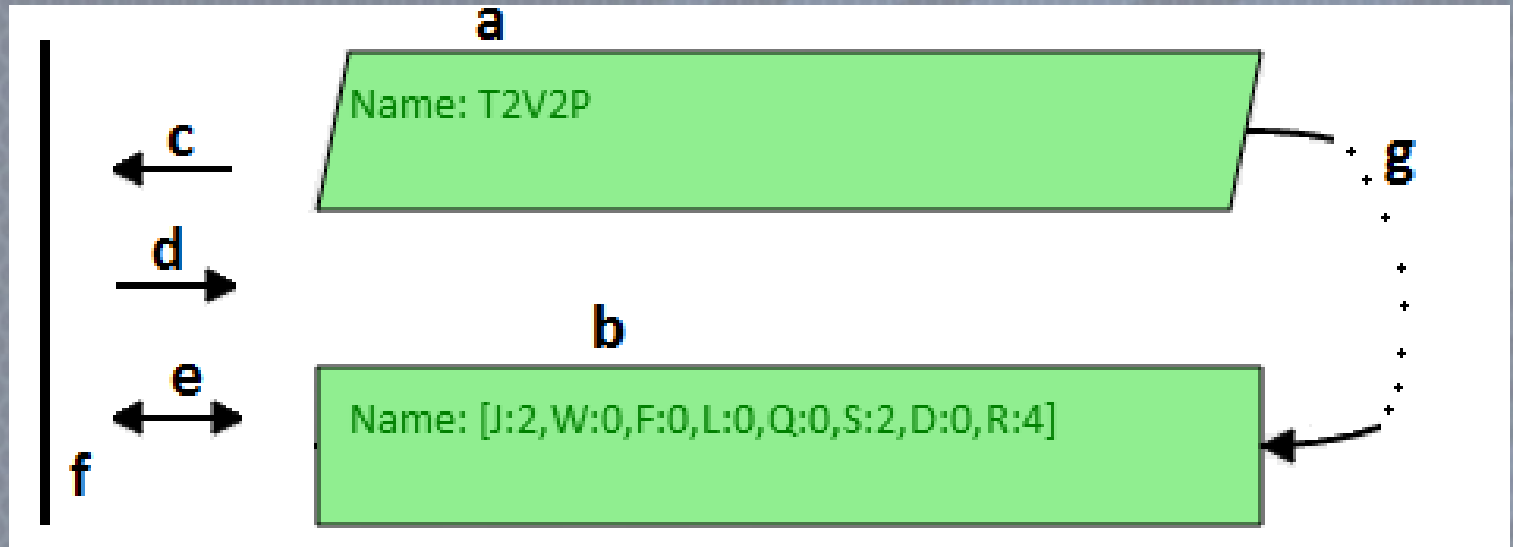


Diagram Elements



Rules are represented by parallelograms (a); facts are represented by rectangles (b), operations on facts are displayed by horizontal arrows directed to left side (c), right side (d) and both directions (e); vertical bent arrows (g) are used between rules and facts, operated by the rule. A timeline (f) is represented by a vertical line.

Validation Process: Before

1. An alpha-tester provides system with input data.
2. A request is sent to server.
3. Schemas are synthesized on the server.
4. optical formulas of synthesized schemas are returned from the server.
5. Schemas are drawn in web-browser client of OSYST;
6. A time-consuming manual comparison of synthesized schema with expected schema, which are calculated in advance, is done.

Validation Process: After

1. An alpha-tester provides system with input data.
2. Request is sent to server.
3. Schemas are synthesized on the server, logs of rules' invocation are collected in parallel.
4. Optical formulas of synthesized schemas and logs are returned from the server.
5. Schemas are drawn in web-browser client of OSYST.
6. Synthesis process visualization diagram is built based on rule invocation logs.
7. Rules and rule execution order is analyzed with a help of visualization chart.


Data Input


OSYST

Dashboard

Printable version

aperture speed 

angular field 

focal length 


back focal distance 

image quality 



entrance pupil pos. 



spectral range 

Synthesize

OSYST Interface

VODRE: Visualization of Di x OSYST - Synthesis x

127.0.0.2:9000/synthesis

OSYST Dashboard Printable version Admin Admin

General characteristics

aperture speed 1,8

angular field 84

focal length 4,5

back focal distance 1

image quality GEOMET

entrance pupil pos. FORWARD

spectral range 450 60

Synthesize

The knowledge base

- e3soos.generation (modified: 18.01.13)
- e3soos.basic (modified: 18.01.13)
- e3soos.wideangular (modified: 18.01.13)
- e3soos.corrective (modified: 30.01.13)
- e3soos.fast (modified: 18.01.13)
- e3soos.classification (modified: 18.01.13)

...by optical features. ...by purposes. ...by design.

S - 0 D - 2 The complexity of the system R - 6

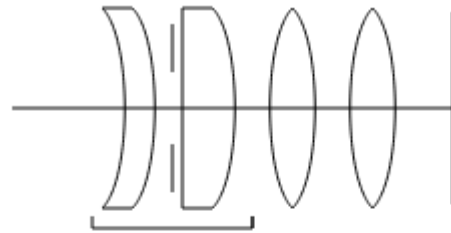
Debug window

- Name: T3F3P and T3I3P
- Name: D2
- Name: B2A3P, B2A2P, B3A3P
- Name: a basic and fast
- Name: a basic and fast

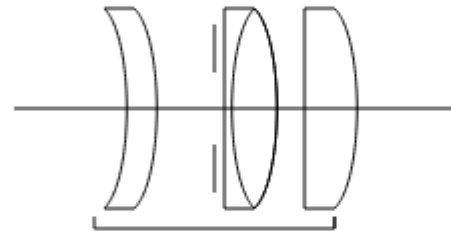
+ B3A4P + T4V4P

+ B3A4P + T4F4P

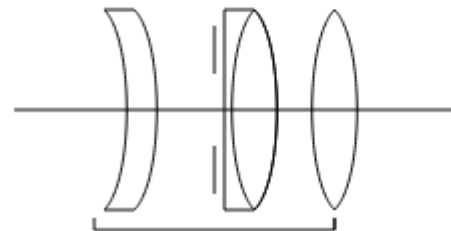
Generated Optical Schemes



Y3V4P + C2P2P + B4A4P + T4F4P ②

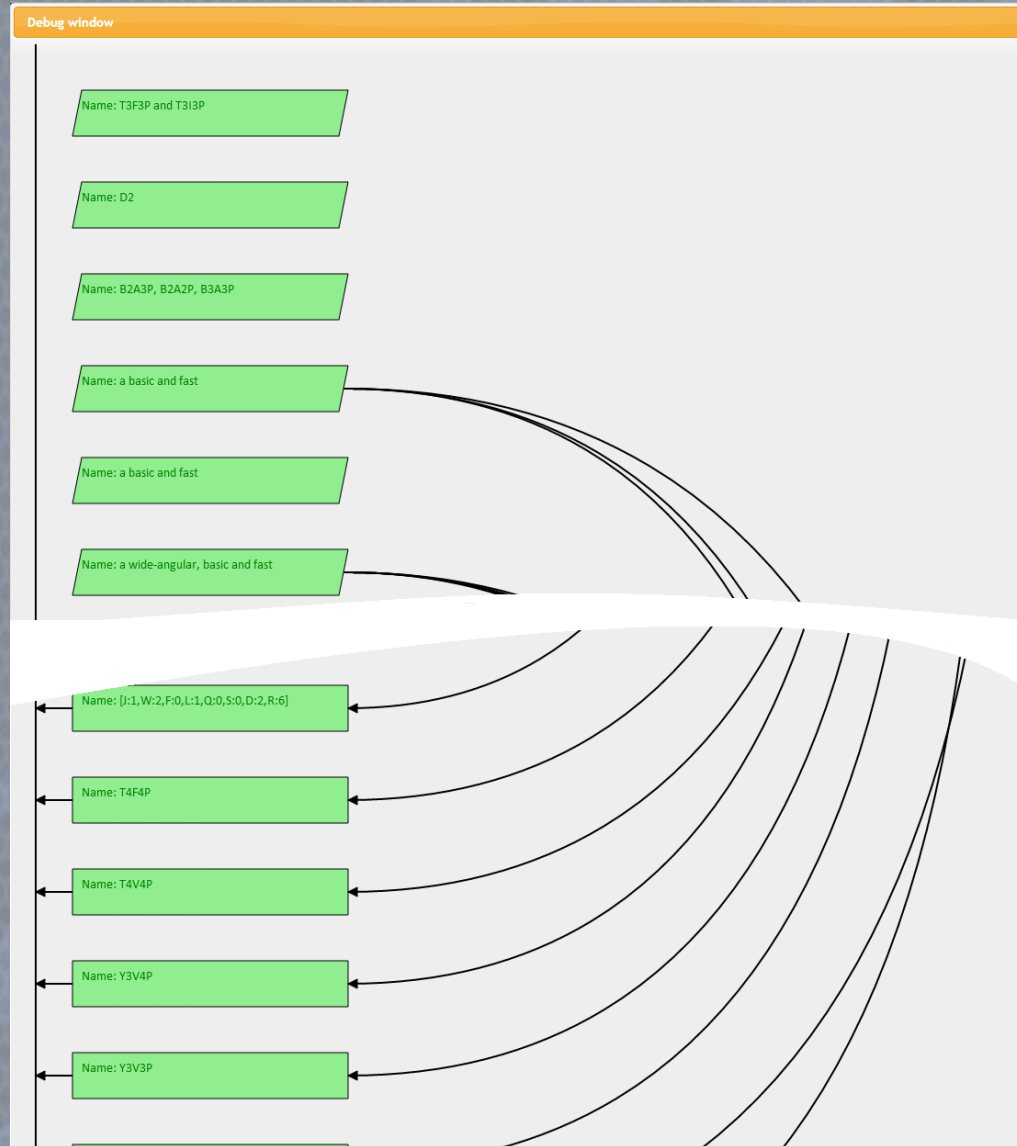


Y3V3P + C2P2P + B3A4P + T4V4P ②



Y3V3P + C2P2P + B3A4P + T4F4P ②

Visualization Chart



Future work

1. Scaling mechanism
2. More informative elements
3. More functions
4. General improvement of the component
5. General improvement of the system

Repository: <https://github.com/ailabitmo/OSYST>



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THANK YOU FOR ATTENTION



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