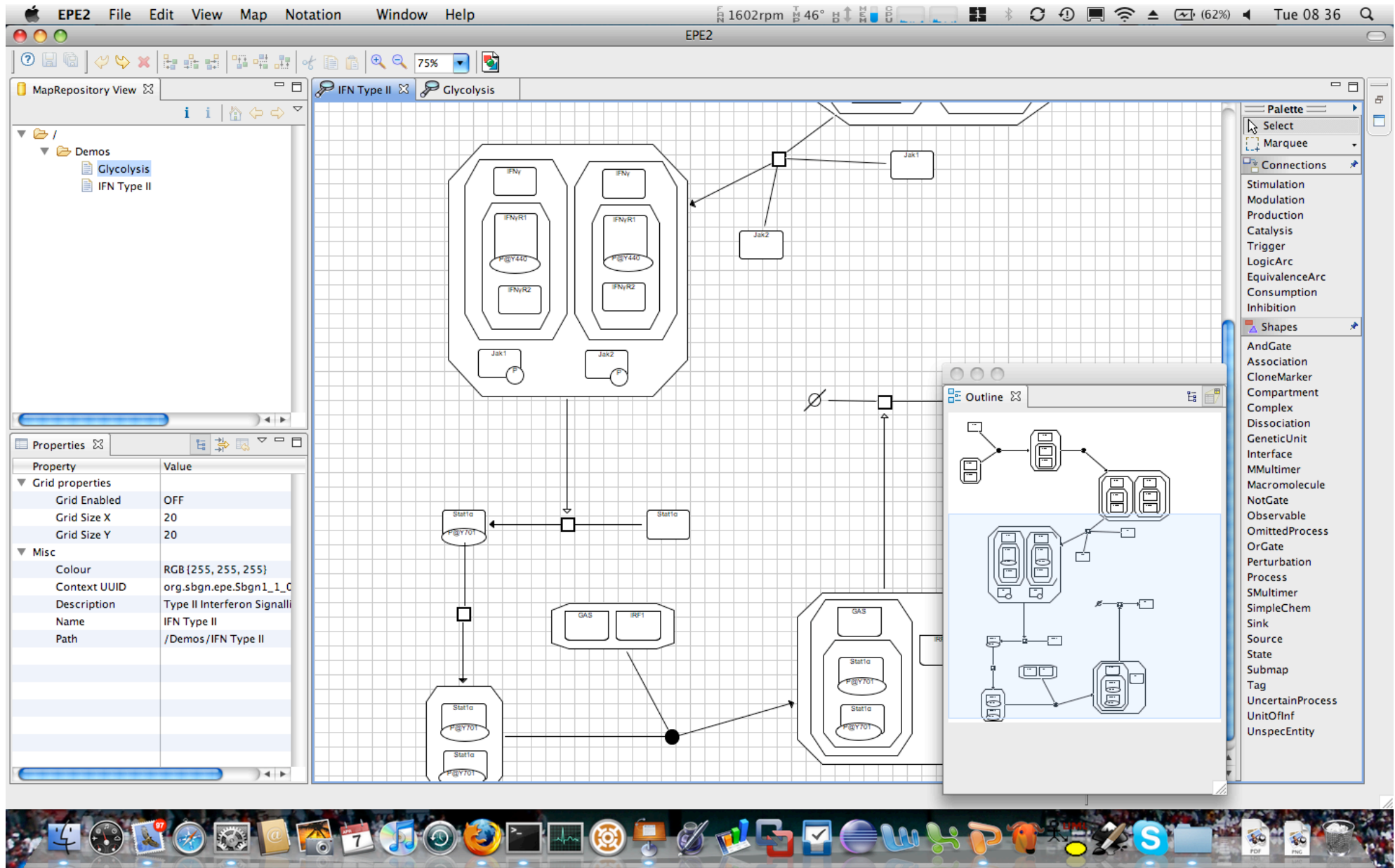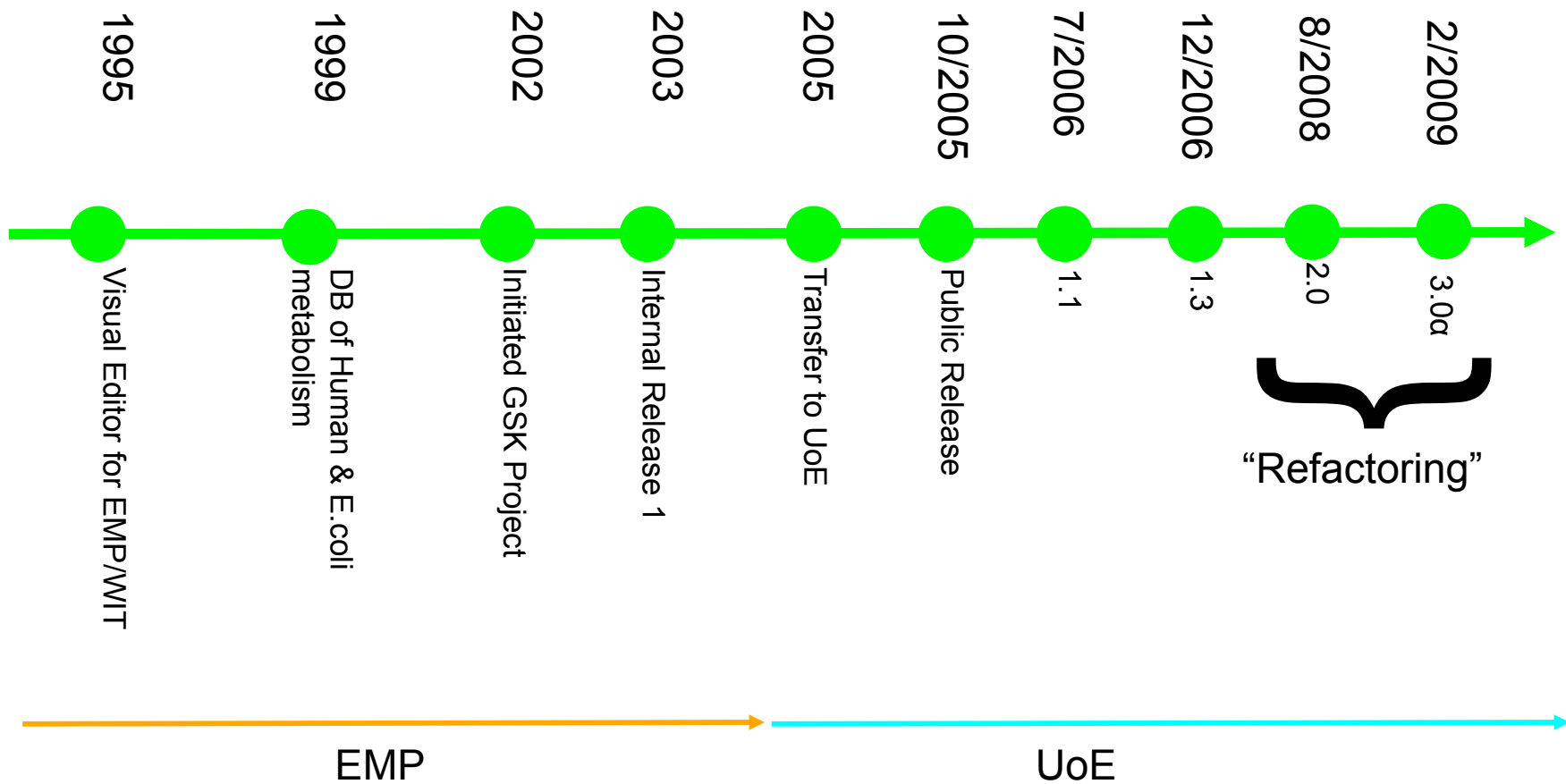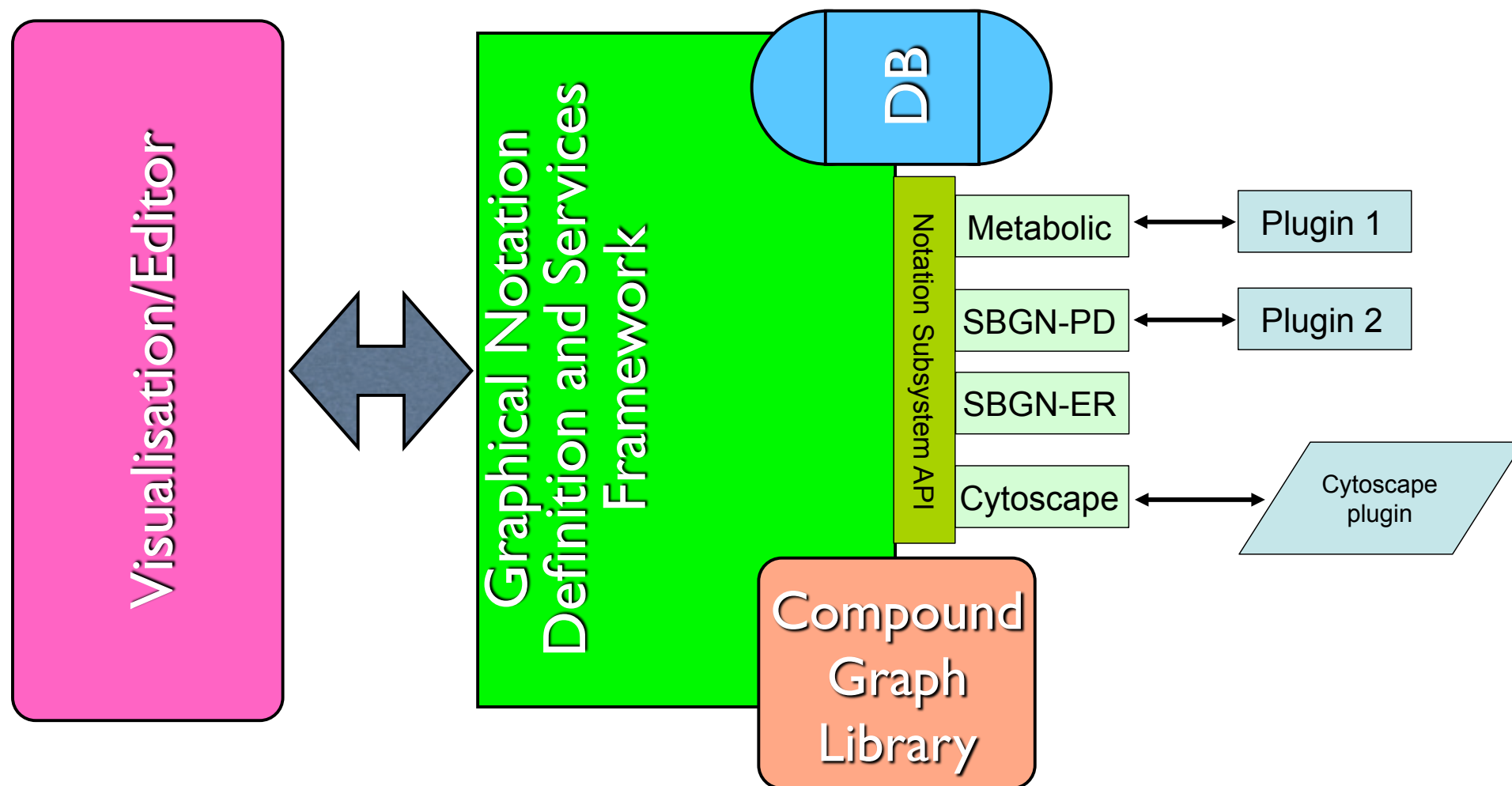# Edinburgh Pathway Editor

EPE 2.0

www.bioinformatics.ed.ac.uk/epe
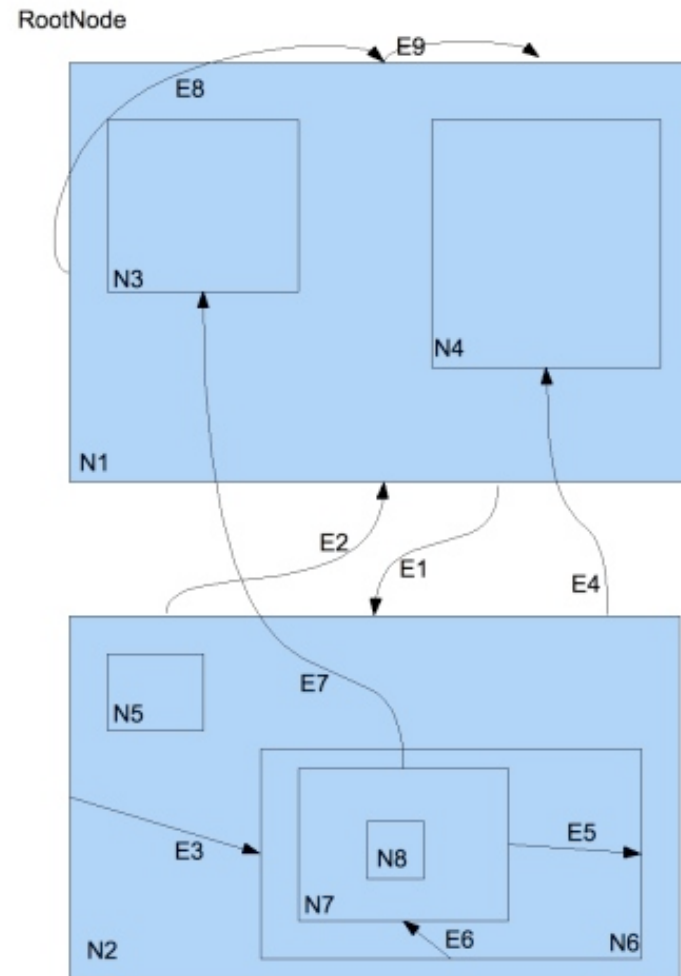
History of EPE

Demo of EPE 3.0

Visual Editor & SB Framework

Compound Graph Library

- Java 5+
- Uses Generics
- Extensible
- Copy
- Move
- Delete
- Selection
- Undo/Redo

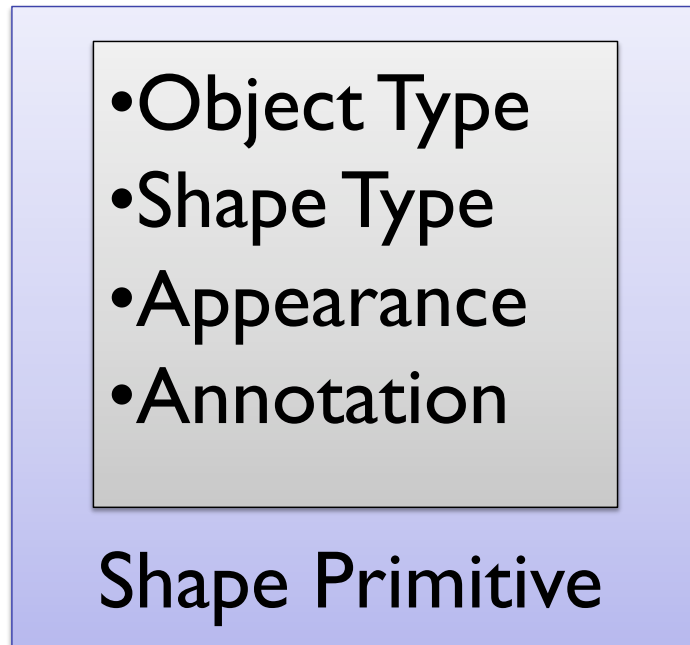`http://sourceforge.net/projects/epe`

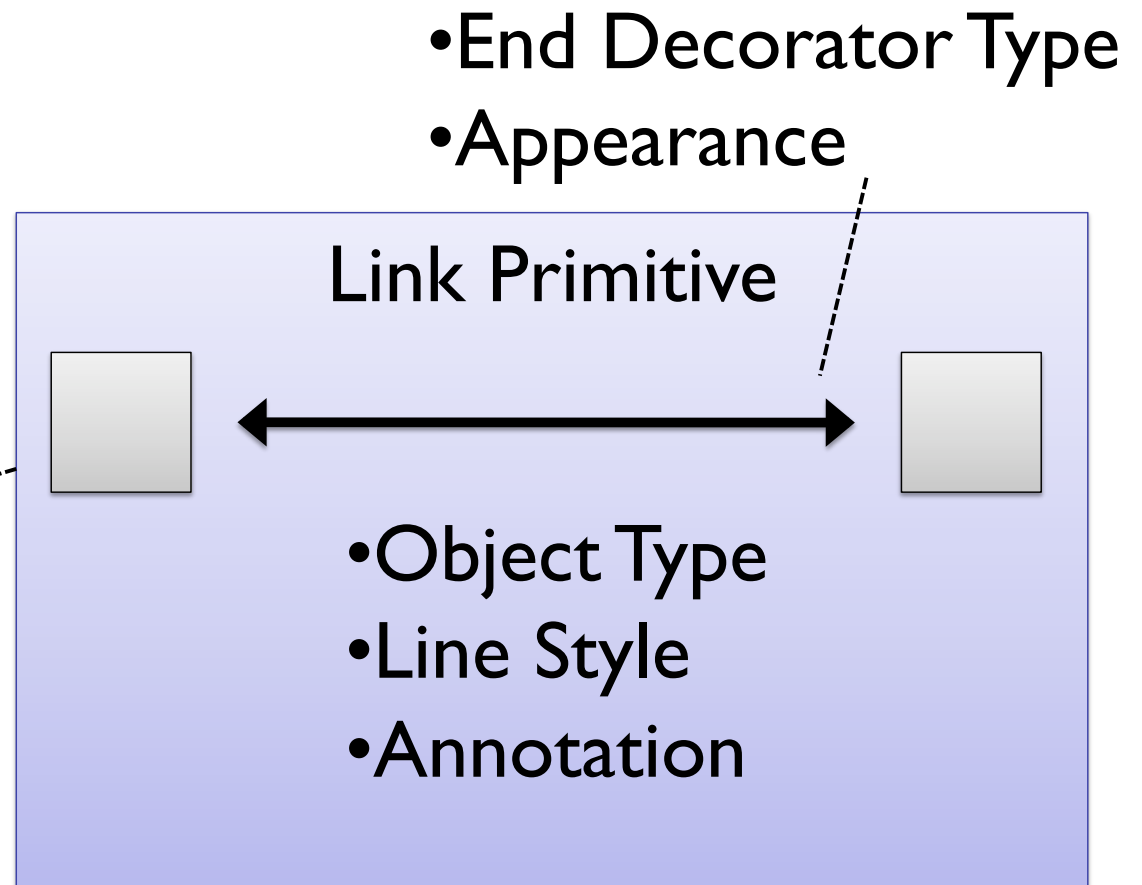# Notation Subsystem Services

- Notation definition
  - Glyphs
  - Notation Syntax
- Notation Validation
  - Notation semantics
  - Layout guidelines
- Notation DOM
  - API describing what the notation means

- Context conversion
  - To different notations
  - Upgrade to new version
- Autolayout
  - Notation specific layout rules
- Import/Export
  - Pathways from databases
  - From other applications

Drawing Primitives

Shape Primitive

- Object Type
- Shape Type
- Appearance
- Annotation

Link Primitive

- End Decorator Type
- Appearance

- Object Type
- Line Style
- Annotation

- Terminus Dec Type
- Appearance
- Attributes

Object Types – Syntax Defn

Shape Parenting

Parent	Shape OT A	Shape OT B	Shape OT C
Shape OT A	T	T	F
Shape OT B	F	T	F
Shape OT C	T	T	F

Link Connectivity

Connects to	Shape OT A	Shape OT B	Shape OT C
Link OT 1	S	T	-
Link OT 2	S	-	T
Link OT 3	S	S	T

Notation Subsystem Builder
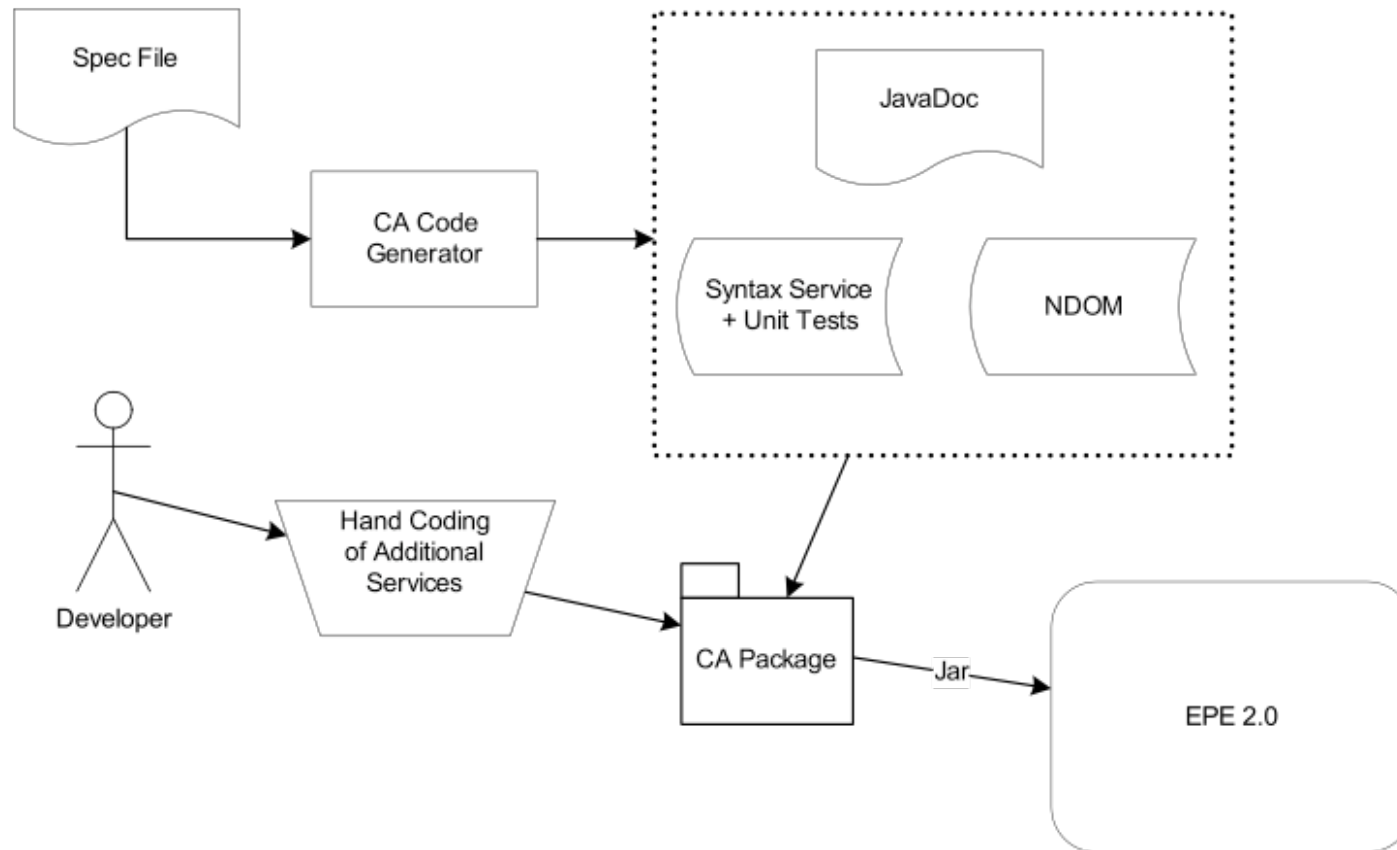
Example Ca File

```
/**
* Basic cytoscape  notation subsystem
*/
context uk.ac.ed.inf.csb.BasicCytoscape (name = "Basic Cytoscape Context" descr="Context to test
code generation of a basic cytoscape" version=1.0.0)

property Interacts (name="interacts" descr="interaction between two nodes" type=simple
visualisable)

RMO        ( contains [Node])

shape      Node (name="Node" descr="node"
                   stype = ELLIPSE
                   size = [50,50]
                   contains []
           )

link       Edge (name="Edge"
                   lcolor = [0,0,0]
                   Interacts=" "
                   source = Node target = [Node]
                   sport = NONE (stype = RECTANGLE
                           size = [0,0]
                           lcolor = [0,0,0]
                           fcolor = [255,255,255]
                   )
                   tport = NONE (stype = RECTANGLE
                           offset = 0
                           size = [0,0]
                           lcolor = [0,0,0]
                           fcolor = [255,255,255]
                   )
           )
```
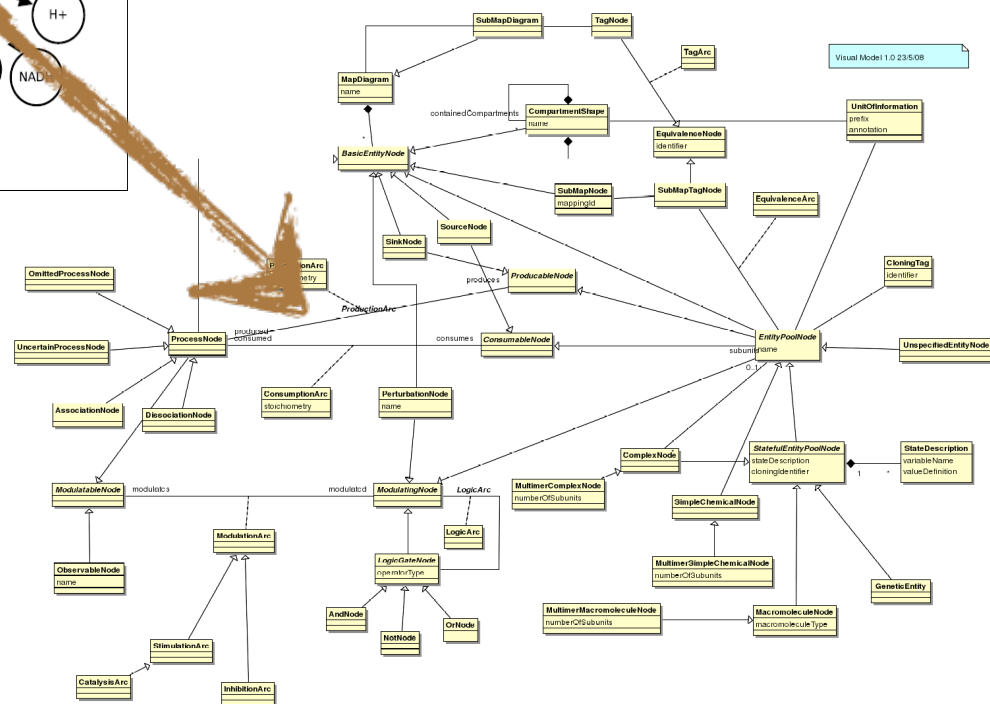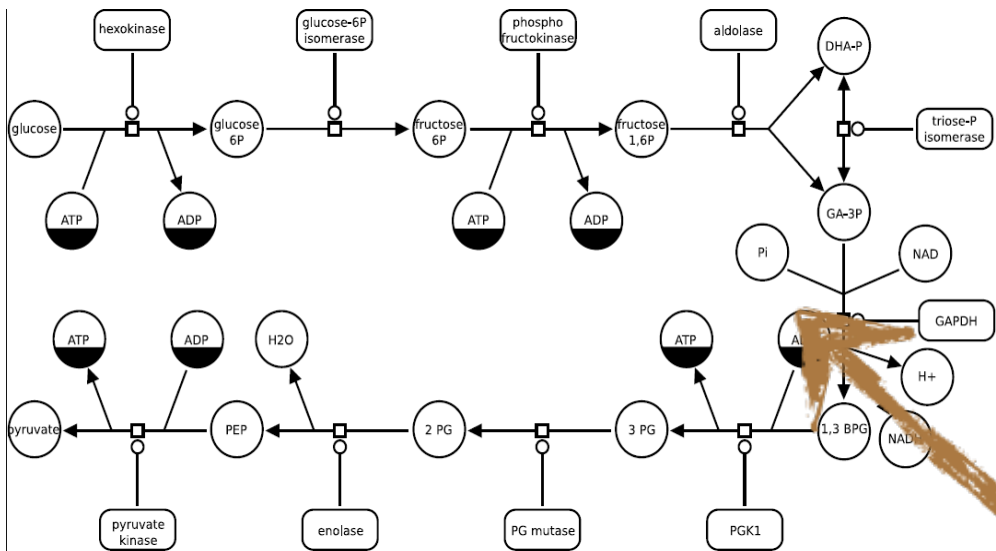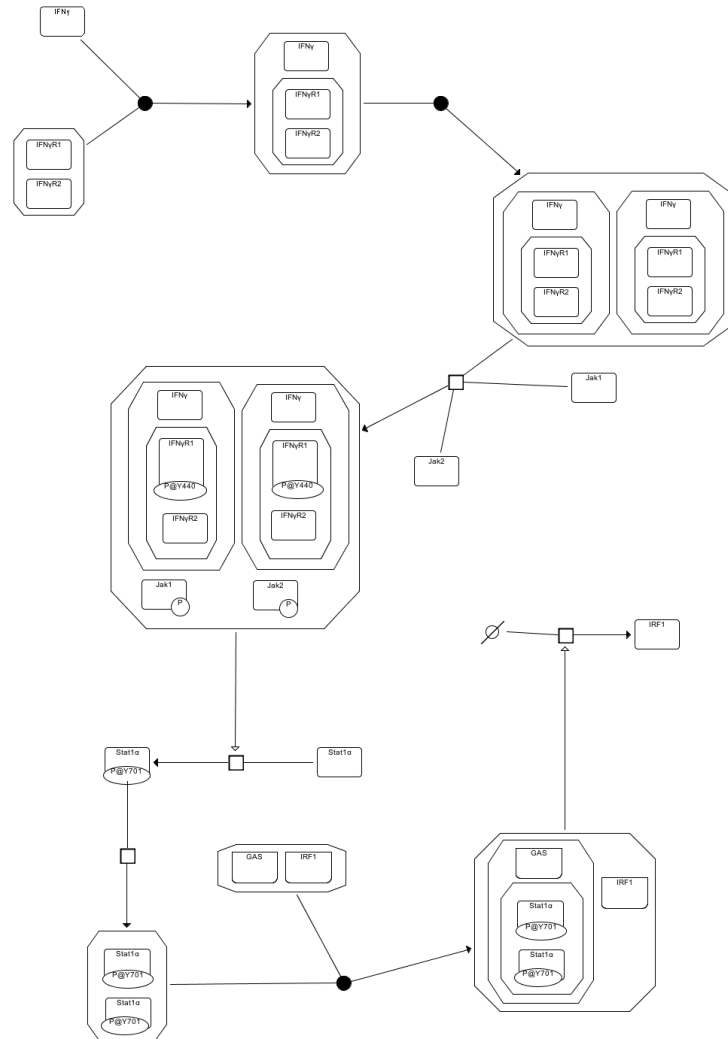
From Diagram to Meaning

Export/Import

- Metabolic to SBML, BioPAX L2

- Import & Export to Cytoscape XGMML

Future

- SBGN-PD to BioPAX L3
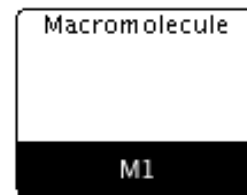
- Import SBML to SBGN-PD
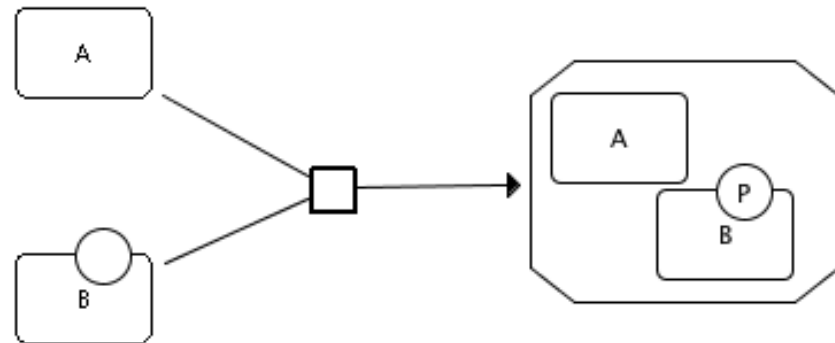
SBGN In EPE

PD Example

Omissions
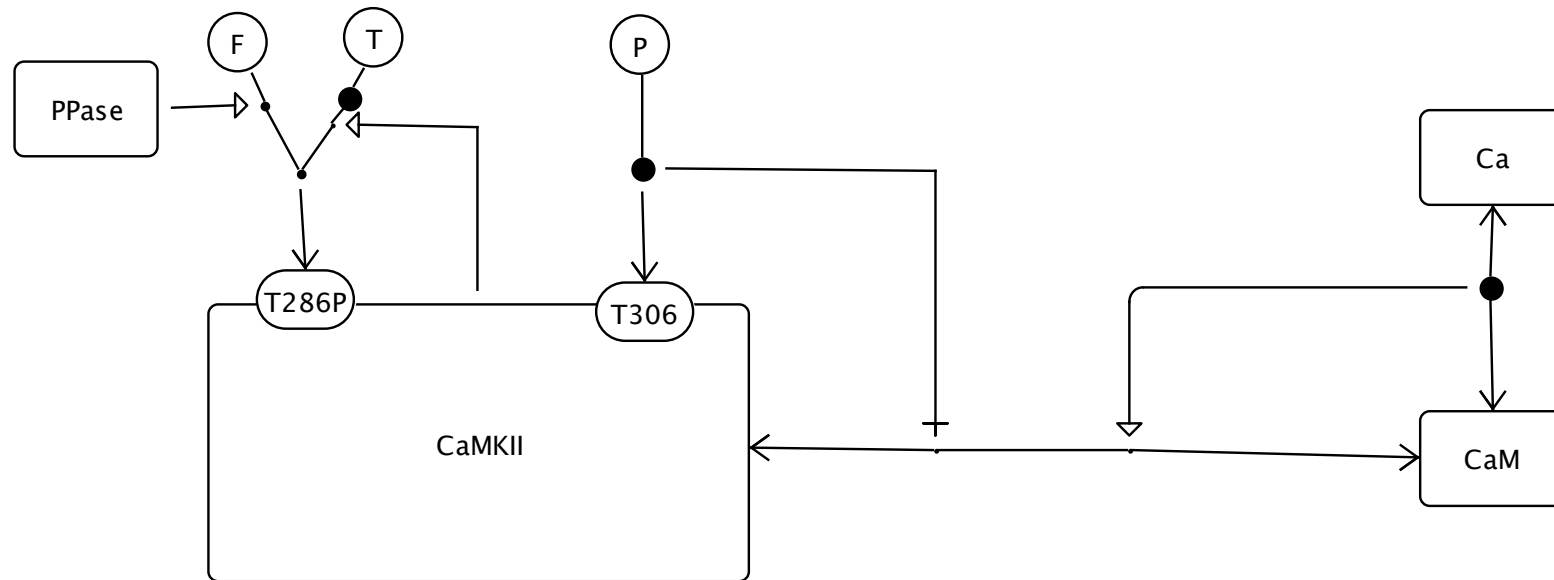
- Names do not overflow shape

- Clone markers cumbersome

- Processes not correct

SBGN-ER

Future Directions

- Sort out process for SBGN

- On the fly decorator addition

- SVG shape definition

- Linking to Links

Acknowledgements

- **Computational Systems Biology/CSBE**
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- Alexander Mazein

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- CSBE
  - BBSRC
  - EPSCR

EPE

- Stuart Moodie
- Anatoly Sorokin
- Richard Adams
- Neil Hanlon
- Nikos Tsorman
- Shakir Ali

SBGN

- SBGN Community

http://sourceforge.net/project/epe