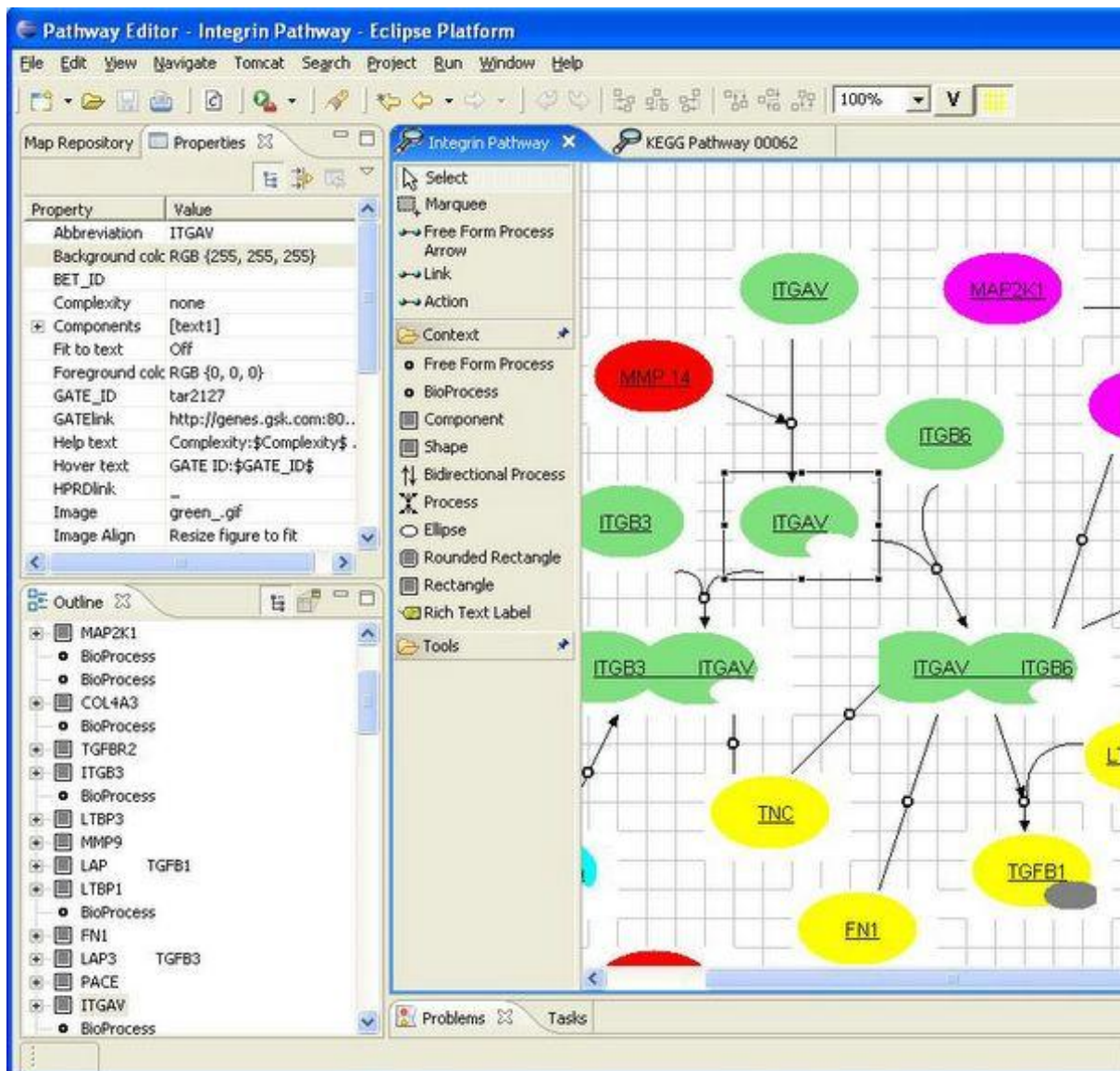


About the Edinburgh Pathway Editor:

- EPE is a visual editor designed for annotation, visualisation and presentation of wide variety of biological networks, including metabolic, genetic and signal transduction pathways.

- Menu Options:**

EPE uses a small number of basic objects to represent main concepts of the biological network.



Shape represents the biological object or subsystem, treated as "a black box" with number of Ports interfacing with it.

Process visualizes sequences of events e.g. a biochemical reaction or protein

interaction (e.g. chemical reactions, protein binding, gene activation, ...).

Link is used to represent any pair-wise relation between objects including **identity** or **act on** relations.

Label is a visual object to represent textual information and to allow links to other maps and resources.

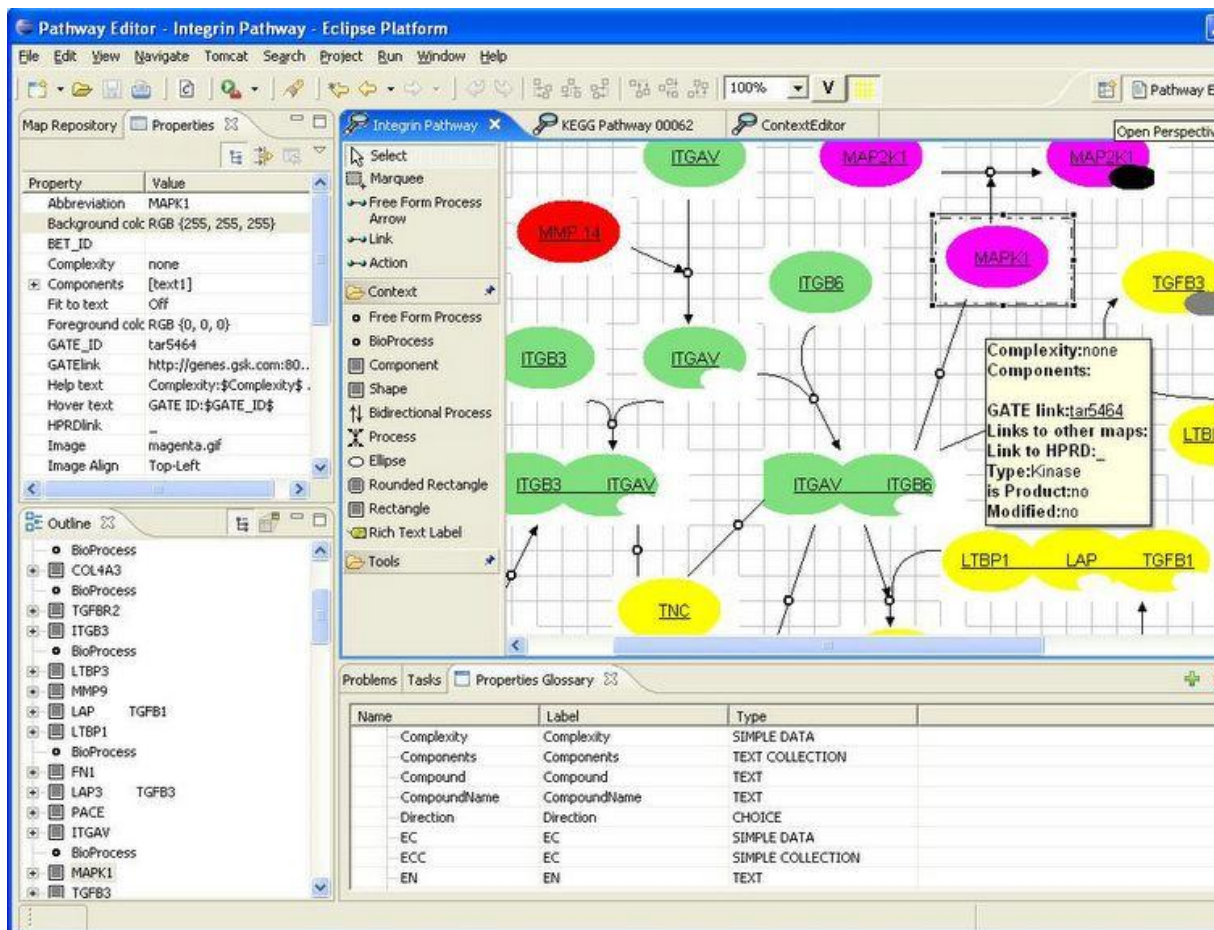
Context separates metadata and visual standards from pathway maps and pathway data. It allows one to tune the **drawing palette** for selected type of map. With the context one could create a new object with special customised properties.

The context is a collection of objects, their properties and their default values. The context allows the user to create new objects on the basis of existent ones. The context property editor provides a great flexibility in the description of storage standards and the visual presentation.

🕒 **Visualisation of object properties:**

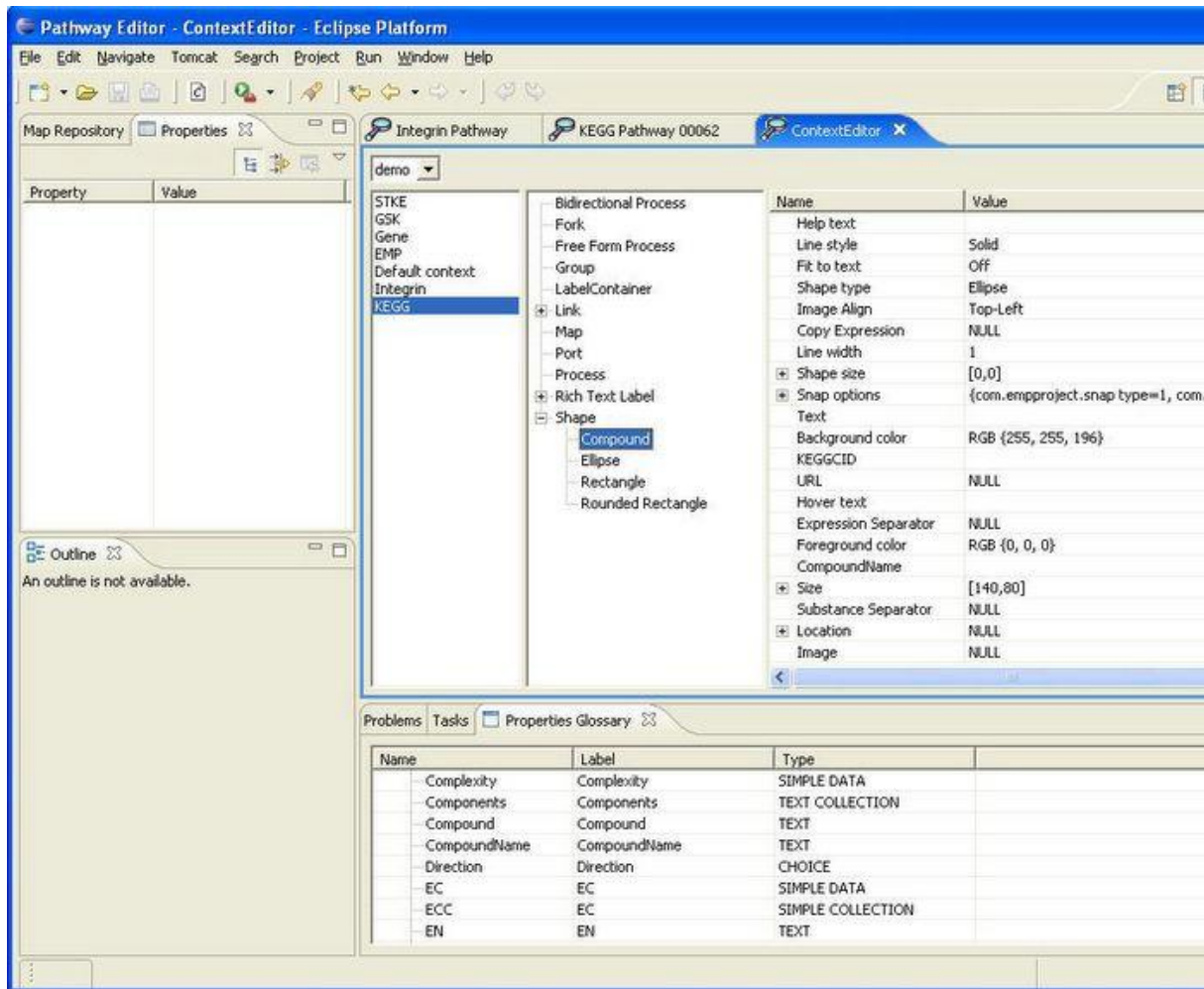
There is a further type of information that usually is not shown in visual representations of the pathway map. It captures the provenance of the relations including literature annotation and links to databases corroborating the relationships depicted in the map. This information is normally stored in the database or as annotation comments to the map.

EPE allows the user to customise the list of object properties, to store these data within object, and to visualise it via linked pages or pop-up windows.



🔗 Databases and References:

External database and ontology references are closely related to the annotation information.



• Organization of the hierarchy of maps:

EPE allows users to create hyperlinks between maps, which makes it possible to organise information as a hierarchy of maps. It makes easy the process of analysis and verification, by allowing people to focus on small subset of data, covered by the whole model.

• The Storing of Map- Information:

EPE stores information about maps in relational format RDBMS. Apache Derby and Oracle now supported by EPE as internal persistent storage. Apache Derby is treated as a local storage and Oracle could be used for enterprise sharing of information within development team and publishing. Any other type of persistent storage could be implemented as plug-in.

• **Data Sharing:**

EPE supports data sharing and distribution through ODBC and also through an open XML export format. The XML files can be used for archiving and backup. Diagrams created with EPE, can be exported to common image formats including JPEG, PNG, WMF and SVG or saved as a fully functional and hyperlinked HTML tree or as a model in SBML format.

• **Plug– Ins:**

EPE was created as an Eclipse stand-alone application, with Eclipse open framework architecture. This enables the development of extensions to enhance the existing capabilities. Specific plug-ins, to perform scientific computing and other tasks can be easily incorporated. For example, connection to external ontologies has been implemented using the plug-in architecture. The default solution just opens reference URL in a new browser window. However, the API for external ontologies connections allows users to create fully functional plug-ins with complex searching and visualisation of external database content.

• **Run EPE:**

A Java-based architecture makes it possible to run EPE on different platforms from Mac to Unix workstations. XML-based export allow easily exchange with diagrams and support for Oracle-based RDBMS storage system allows team development of large scale models.