

Community Platform for Pathway Model Building: PAYAO



Yukiko Matsuoka^{1,2}, Samik Ghosh¹, Norihiko Kikuchi³, Rene Saetre⁴, Brian Kemper⁴, N. Okazaki⁴, S. Ananiadou^{5,6}, J. Tsujii^{4,5,6} and Hiroaki Kitano^{1,7}

1.The Systems Biology Institute, Tokyo, Japan. 2.JST ERATO Kawaoka Infection Induced Host Response Network Project, Tokyo, Japan. 3.Mitsui Knowledge Industry Co., Ltd., Tokyo, Japan. 4.Department of Computer Science, University of Tokyo. 5.School of Computer Science, University of Manchester. 6.National Centre for Text Mining (NaCTeM). 7.Okinawa Institute of Science and Technology, Okinawa, Japan.

Email: kitano@sbi.jp

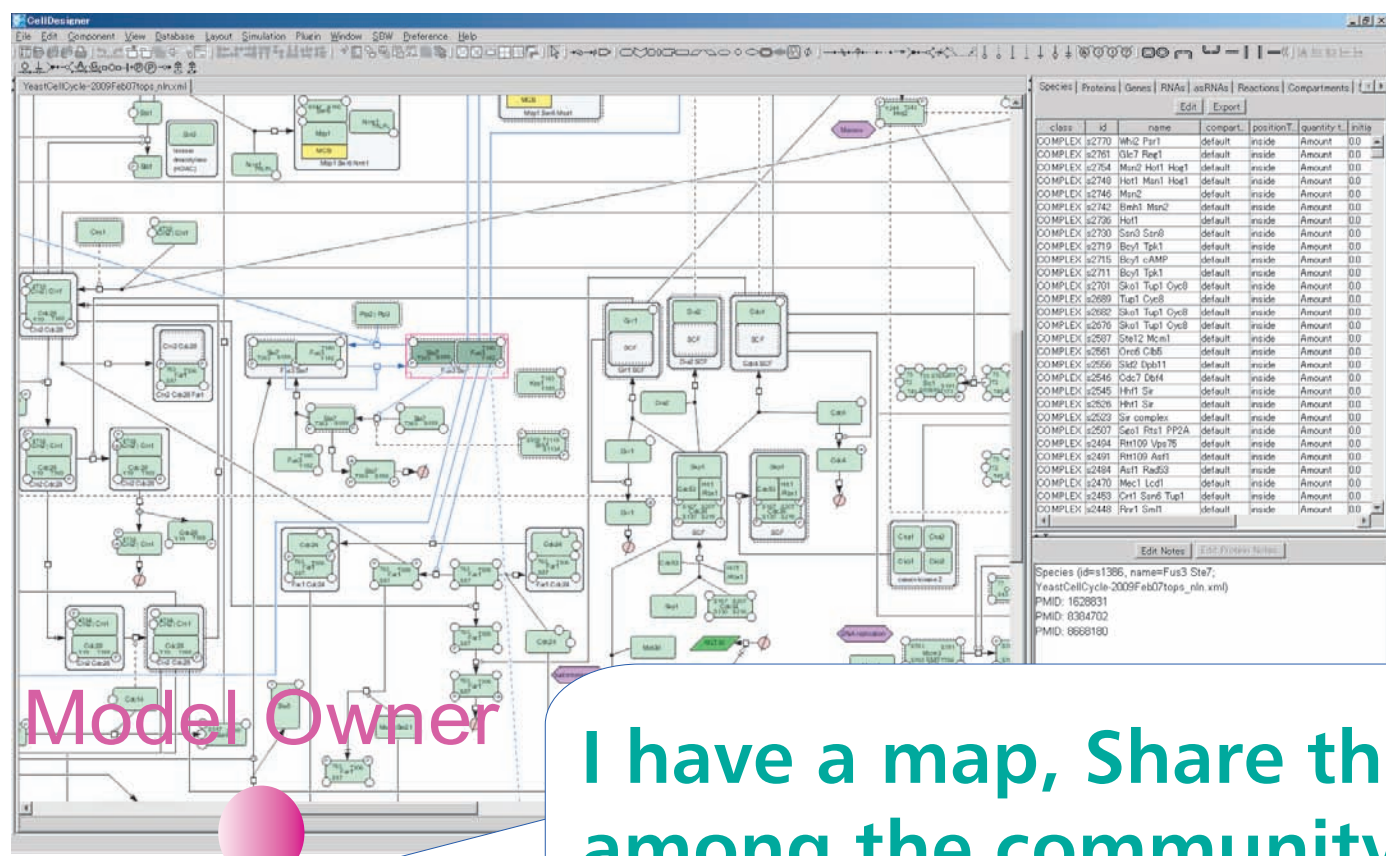
payaologue.org

The Goal of the project is to provide a framework to facilitate tracking and updating of collaborated model building and curation.

"Payao" system aims to enable a community to work on the same models concurrently, insert tags to the specific parts of the model, exchange comments, search for the relevant publication using text mining technology PathTEXT (<http://pathtext.org>), record the discussions, and export or update the models. "Payao" reads the models in SBML (Systems Biology Markup Language (<http://sbml.org>)) format, displays them with CellDesigner (<http://celldesigner.org>), a process diagram editor, adopting SBGN (Systems Biology Graphical Notation (<http://sbgn.org>)), and provides an interface for adding tags and comments to the models for the community members.

1) Create a SBML Model

Using CellDesigner ver 4.

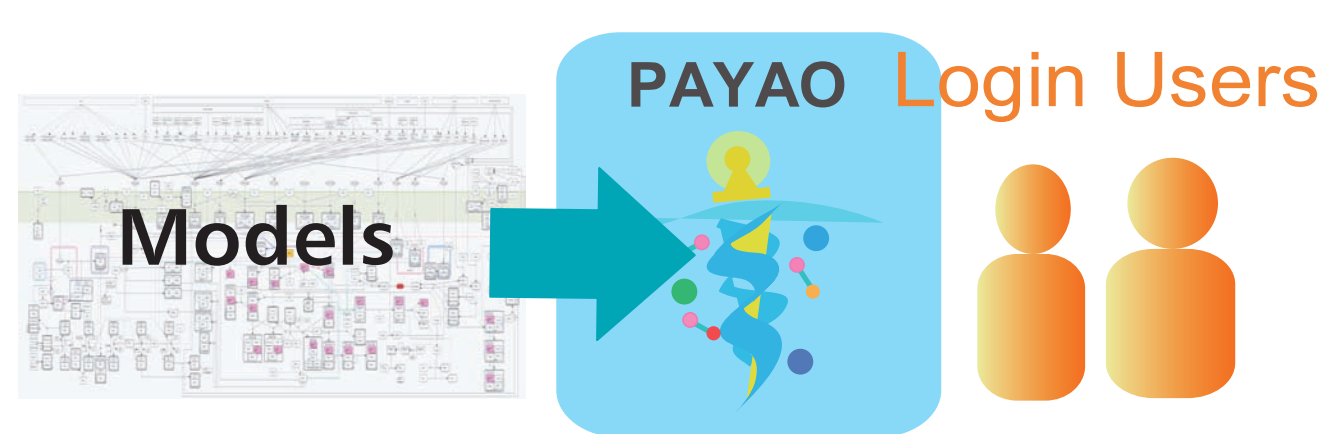


Model Owner
I have a map, Share this among the community to build it as a knowledge base,

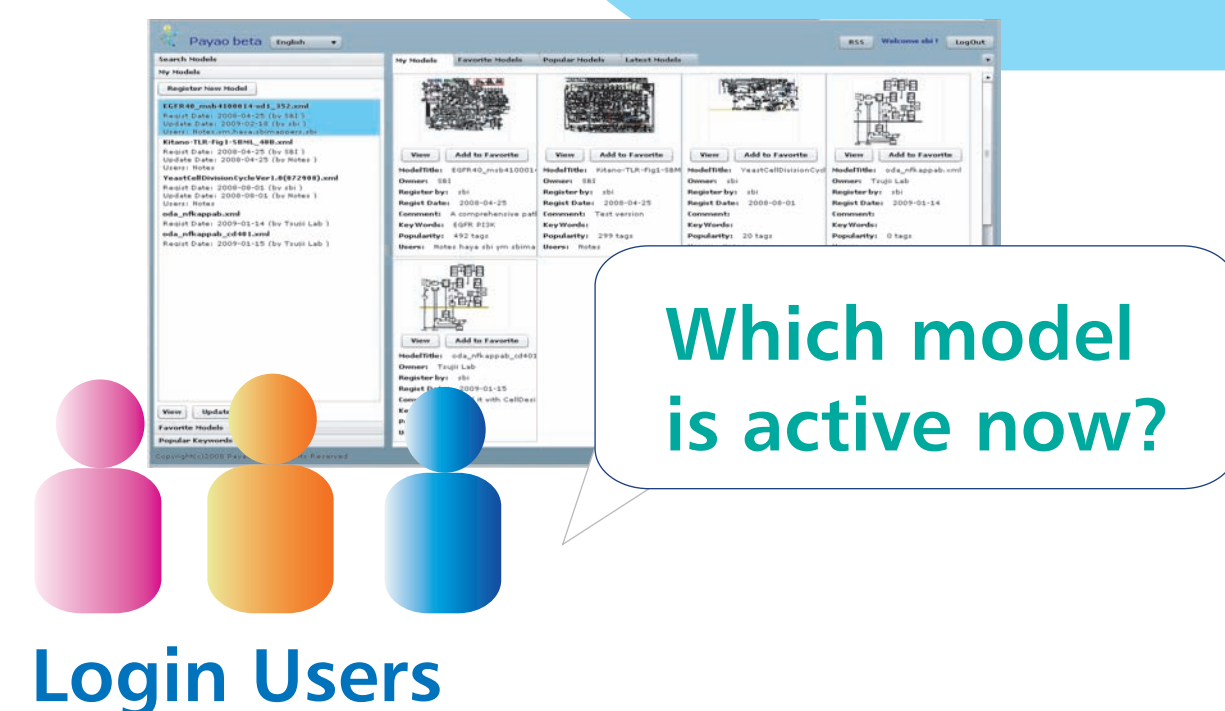
2) Register a Model to PAYAO.

Create a Community

specifies which users to work together on the model, then specify access level (Editor, View Only)



3) Community members log in to the platform and select a model.



PAYAO Major Features: (Beta available at payaologue.org)

Community Management:

- User access control

Model Management:

- Register SBML models to the system
- View the list of all the registered models
- Manage MyModels, and FavoriteModels
- View SBML models in CellDesigner 4.0 notation, based on SBGN notation
- View "Notes" added by CellDesigner 4.0

Tagging/Comments:

- Add Tags (keywords, links, pubMed IDs, free text) to the target (Species/Reactions, user-defined components and areas)
- Add comments to the tags

Literature Search from Diagram:

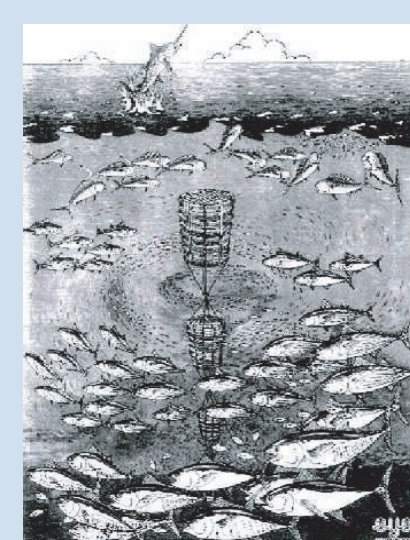
- Integration with PathTEXT, a Text Mining System, developed with Univ. Tokyo and Manchester University.
- Search for publications in a specified time period
- Search for publications by selecting nodes in the diagram

System Requirement:

- Servlet container: Tomcat 5.5.x, JRE 5.0 and above
- Framework: Seaser 2 (S2Flex2)
- RDBMS: MySQL 5.0 and above
- CellDesigner 4.0 API

"PAYAO"?

"Payao" is a fish aggregating device, an artificial floating raft where fish congregate. It is a popular fishing method in Okinawa area.



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Sharing / Discuss / Update SBML Models with PAYAO

Model Login Users Owner
Let's add new findings to this specific part of the model keyword, PubMed ID links etc

Visitors
Look. New Papers are published on my Protein!
Let's find the papers on this interaction via Text Mining.
Interesting Debate on this pathway...

Model Owner
I want to discuss on this domain...

Model Owner
This part is controversial. Need more investigation.

4) Tag to the Model

Let's add new findings to this specific part of the model keyword, PubMed ID links etc

5) Add Comment to Tag

Here is my comment

6) Discover related publication via Text Mining function

Using text mining technology, users can find publications that not only match the selected model as a whole, but also reference a relevant molecule specified in the model.

7) Export and Update the models

with the inputs collected via Payao

Export the model, images, tags, comments. Update the model with pathway editors such as CellDesigner.

Let's find new papers related to this part of the model

Future Plan

- Adopt CellDesigner 4.1 to be able to display the models in SBGN Level-1 Process Diagram graphical notation
- Beta-test with public access.
- Full Integration with PathTEXT, Text Mining System with University of Tokyo and Manchester University.
- Develop this system to be a platform for community model building platform that accommodate both computational and experimental data.

