



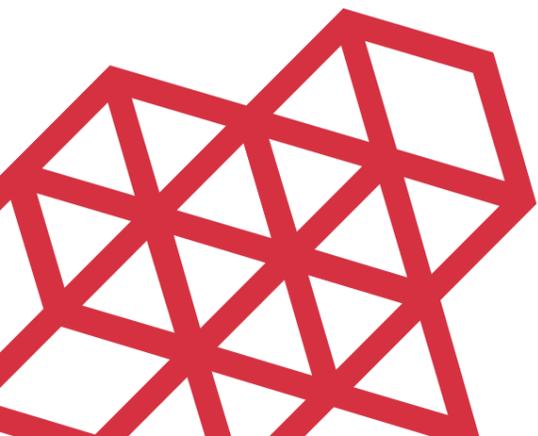
FUTURE RHYS LLC.

2855 Rebecca Drive, CA, 94533, US

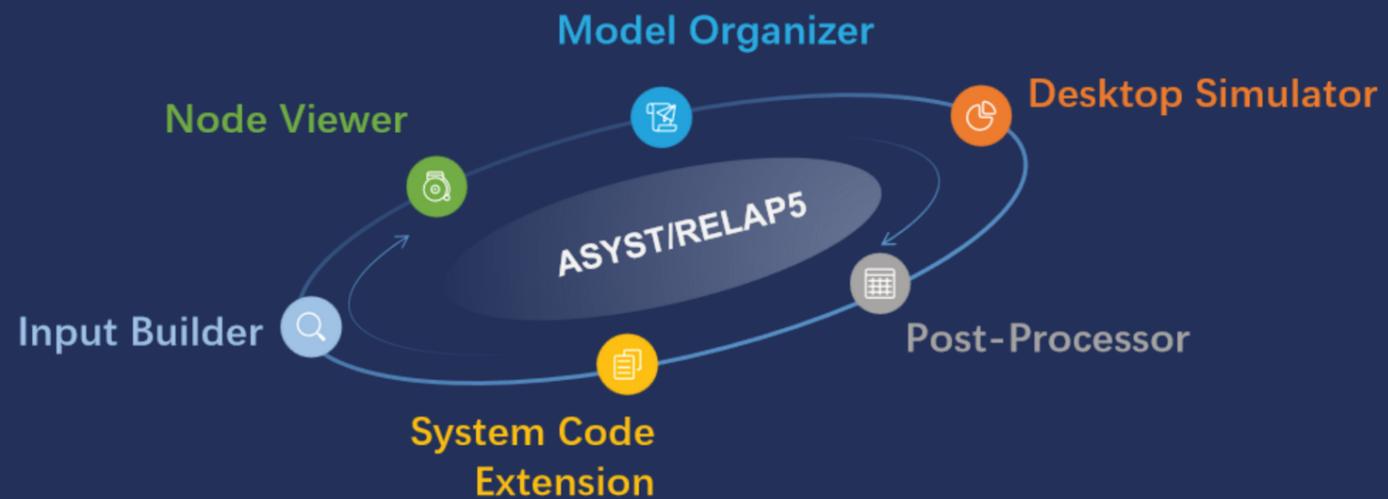


**RHYS
INTRODUCTION**

Shared Future ▶



Simplify Your Process | Amplify Your Productivity | **2025**



RHYS - NODE Viewer

Automatically display system layout

Effortlessly load your input model and visualize system statistics, thermal-hydraulic system connections, complex control logic, and process error messages through intuitive graphical displays. Users can understand the system layout described in the input deck within seconds to minutes, depending on the size of the system. RHYS enables quick and comprehensive model understanding, streamlining the initial review process and helping check the correctness of input models.



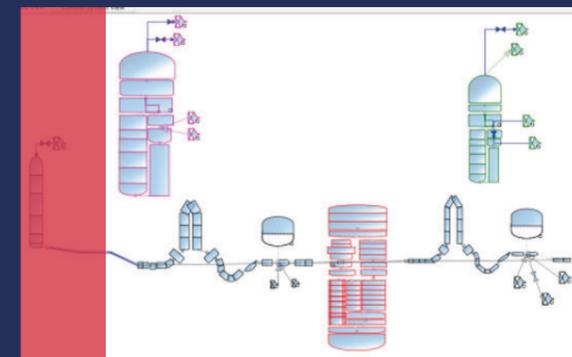
RHYS

Make system code easy to use

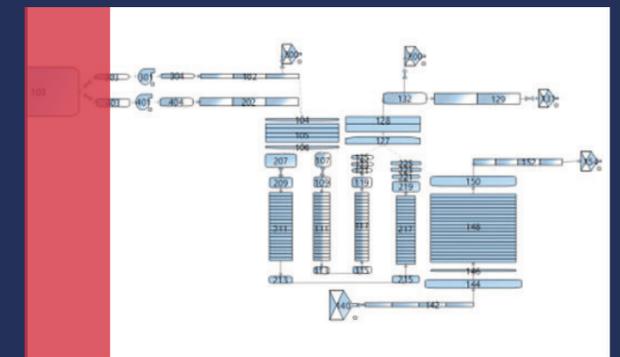
RHYS (Re-imagined Thermal-Hydraulic System Assistant) is an innovative UI extension developed by FUTURE RHYS, LLC and designed to enhance the using efficiency of the system code (RELAP5, RELAP/SCDAPSIM and ASYST).

By streamlining and visualizing the entire workflow process, from building input models and simulations to running result analysis, RHYS significantly enhances the usability and reliability of thermal - hydraulic simulations, making complex thermal-hydraulic modeling and simulation more accessible. RHYS, developed with QT C++, leverages QT's cross-platform capabilities, making it a versatile tool that can run on Windows, Linux, and Mac OS with affordable personal computers.

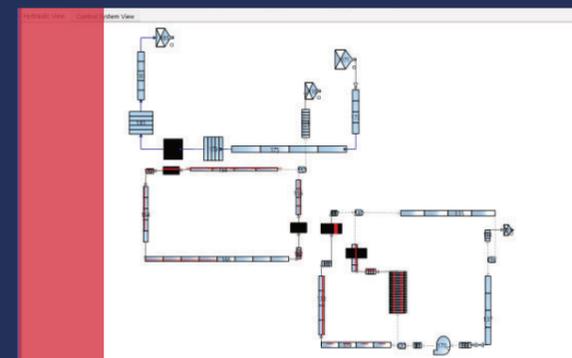
Examples



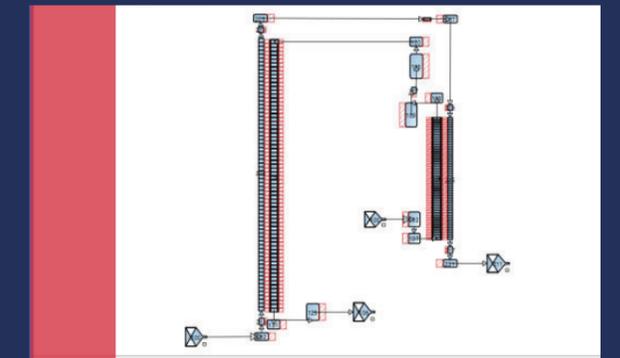
3600Mw Typical PWR



Super-critical water system



Molten salt system



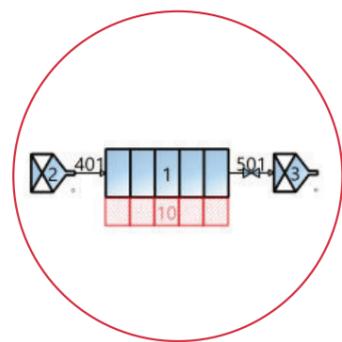
Liquid Metal system



RHYS - INPUT Builder

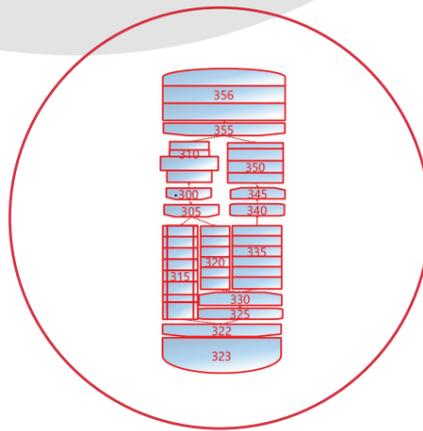
Interactive drag and drop

Seamlessly create or modify models with RHYS' graphical interface. Tailored for usability, it offers dual input methods: a user-friendly UI for newcomers and direct editor interaction for seasoned users. Features like 'Search Component', 'Subsystem Grouping,' and 'Strip Creator' enhance efficiency, making model construction and editing a breeze while simultaneously improving modeling efficiency and reducing human errors.



02 Build Control System

- Standalone window
- Visualisation
- Drag and drop
- Show signal



04 Supportive Features

- Search component
- SCALE component
- Replace component
- Locate signal
- Text edit

05 Save Files

- Save input file
- Save project file
- Save sub-system

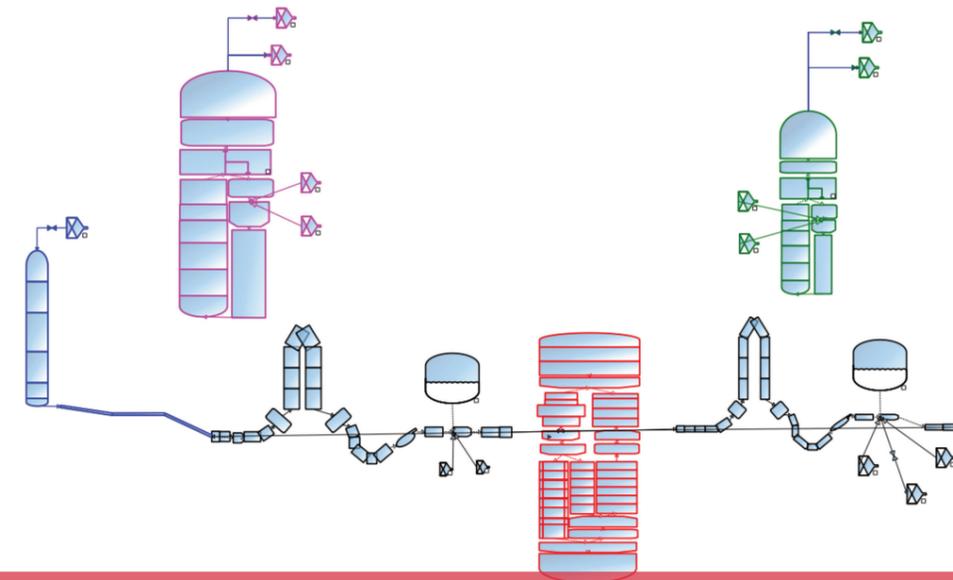
06 RUN Ready Model

01 Build Hydraulic System

- Visualisation
- Drag and drop
- Component link with input panel
- Increase efficiency
- Reduce human errors

03 Sub-system

- Reuse the same sub - system in different projects to improve efficiency.



3600Mw Typical PWR Model build by RHYS

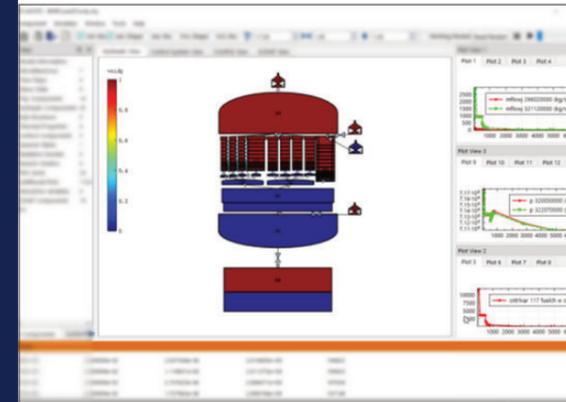
RHYS - SIMULATION

Real-time display simulation results

Engage with dynamic simulations through RHYS' integration with different versions of the system code(RELAP5 or ASYST), with ASYST4-LM specifically showcased in this demonstration, featuring controls for running, pausing, stopping, and more. Visualize real-time data with graphs and heat maps, and gain insights into each simulation step with detailed run status information. RHYS also allows input deck internal plot cards to seamlessly integrate into the simulation for an enriched analytical experience. These features improve users' understanding of the model design and provide clear insights into significant equipment and parameter variations, along with operational behaviors during various accident scenarios, which significantly aid in debugging and optimizing the model based on real-time feedback.

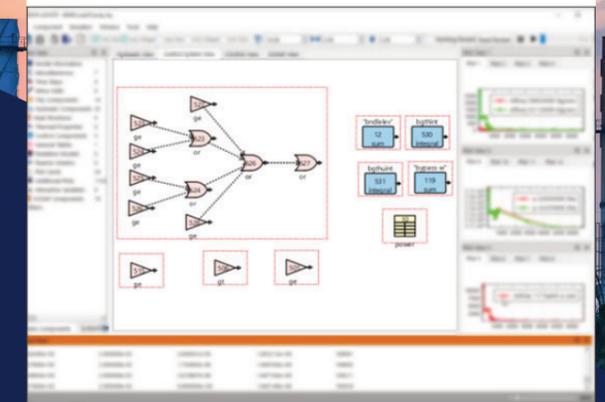


Hydraulic system view



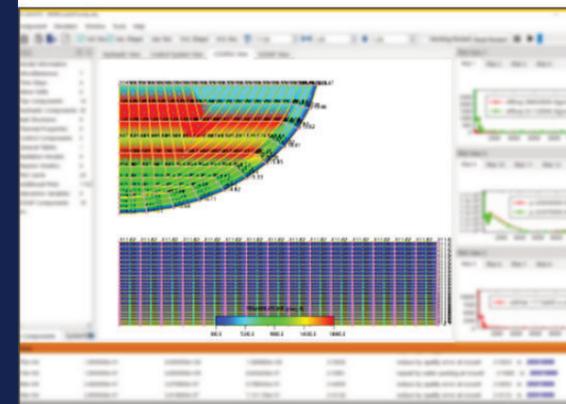
BWR Core

Control system view



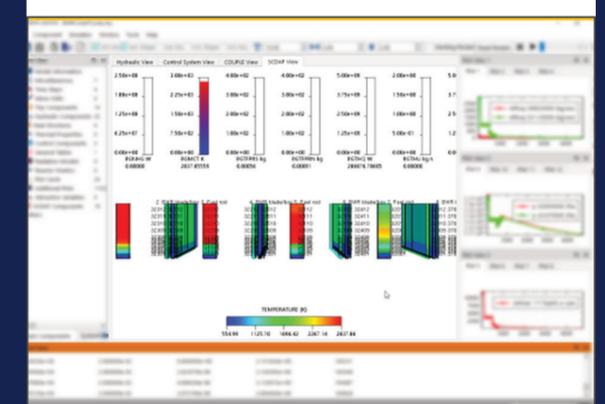
BWR Control System

COUPLE view

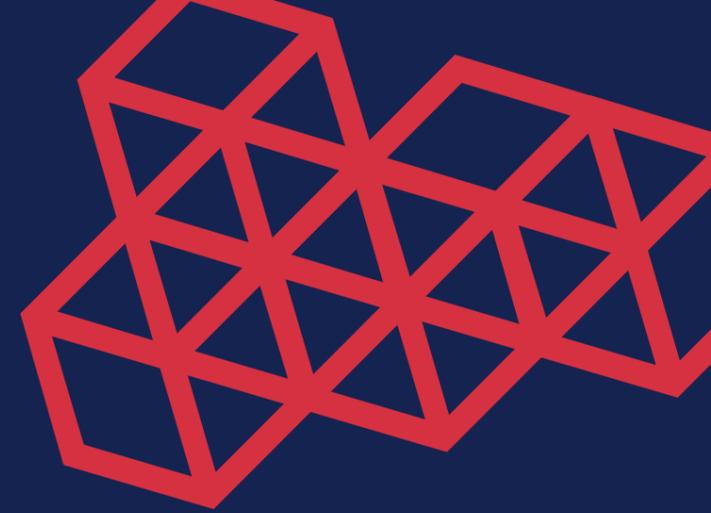


BWR Lower Plenum

SCDAP view



BWR Fuel Element

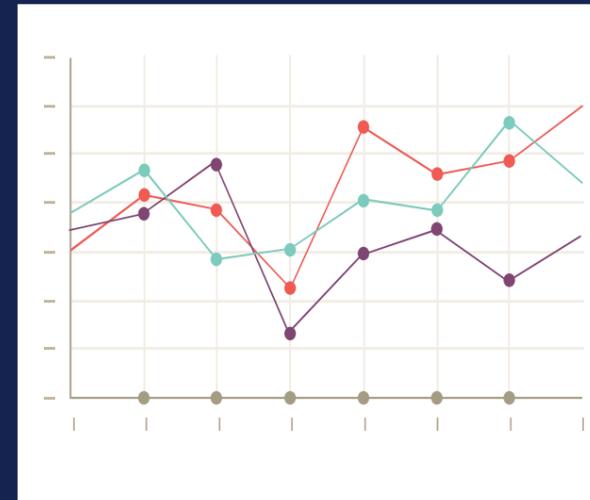


RHYS - PLOT

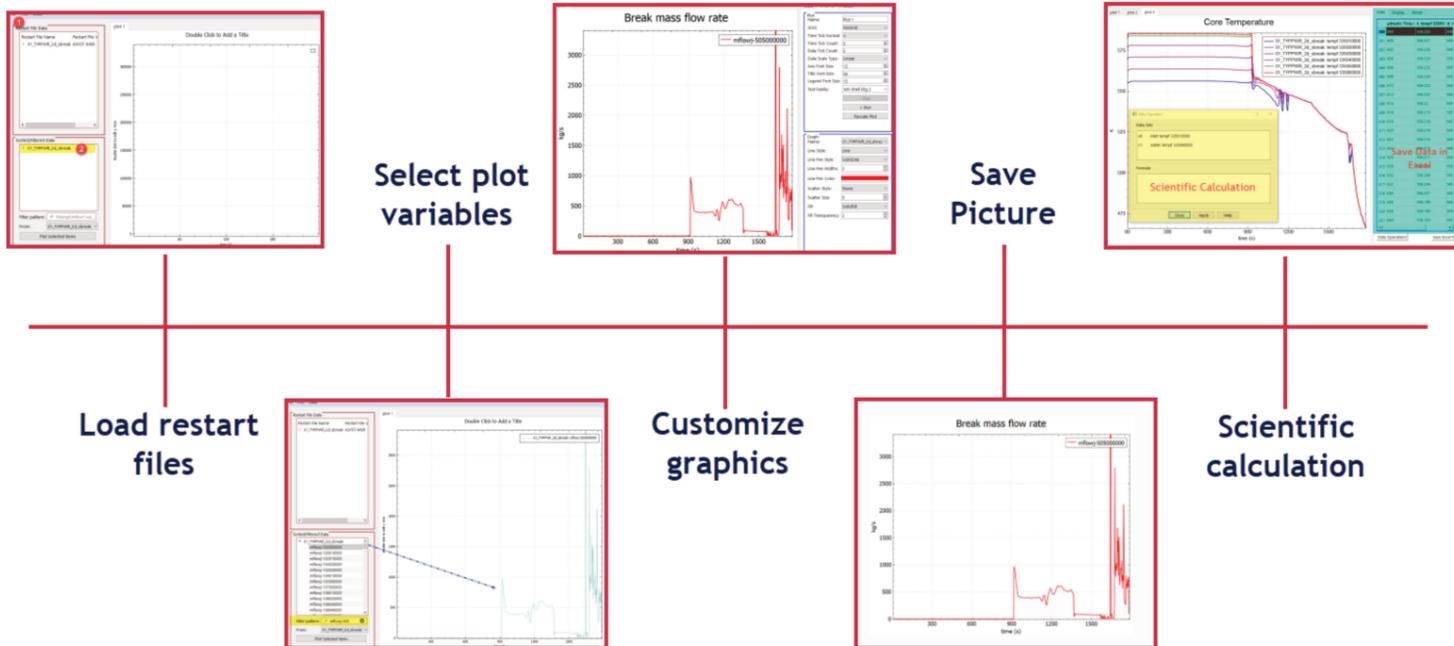
Reduce the complexity of post-processing

RHYS - Plot

Run results post processing



RHYS-PLOT supports the rapid and batch generation of plots from calculation results directly, which helps user quickly analyze and interpret data. This simplifies the process of reaching conclusions and making decisions informed by the simulation results. RHYS-PLOT also supports data extraction into Excel for further independent analysis.



Plot from multiple restart files



Regex Search Variables



Customize graphics



Multiple variable selection



Save as PNG/PDF/JPG file



Save data in an EXCEL file



Scientific Calculation

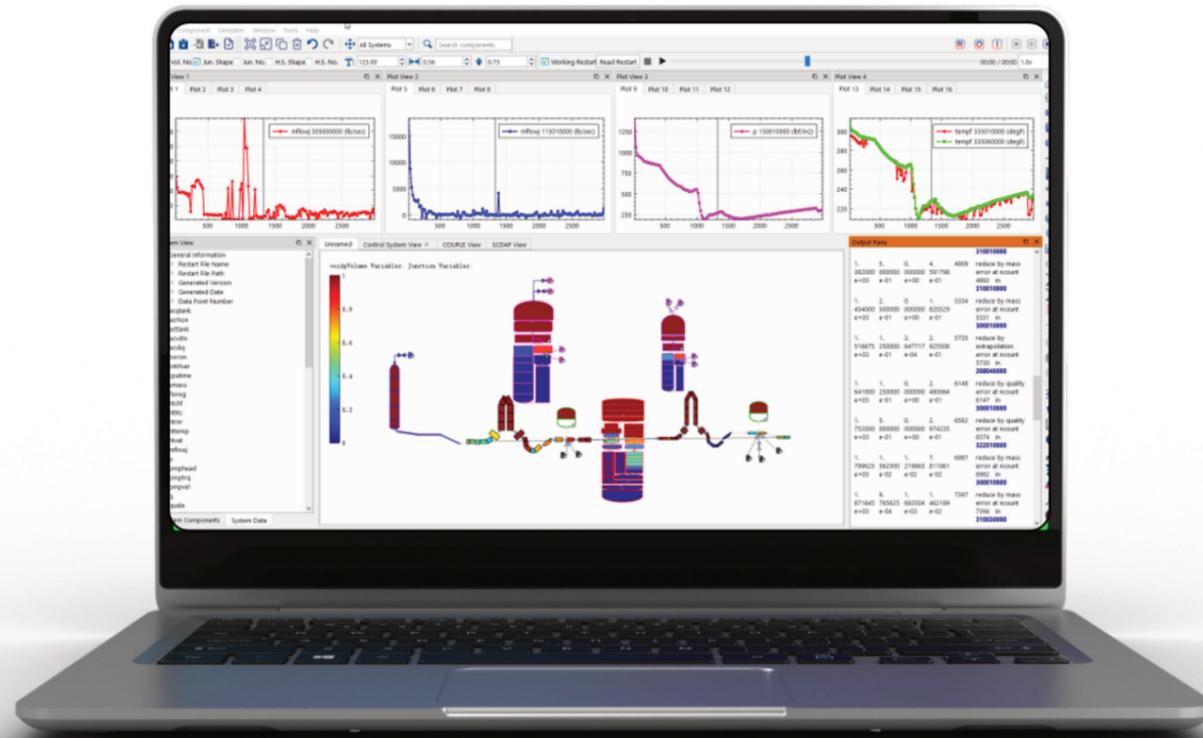


Link with MATLAB

RHYS - REPLAY

Simulation results replay

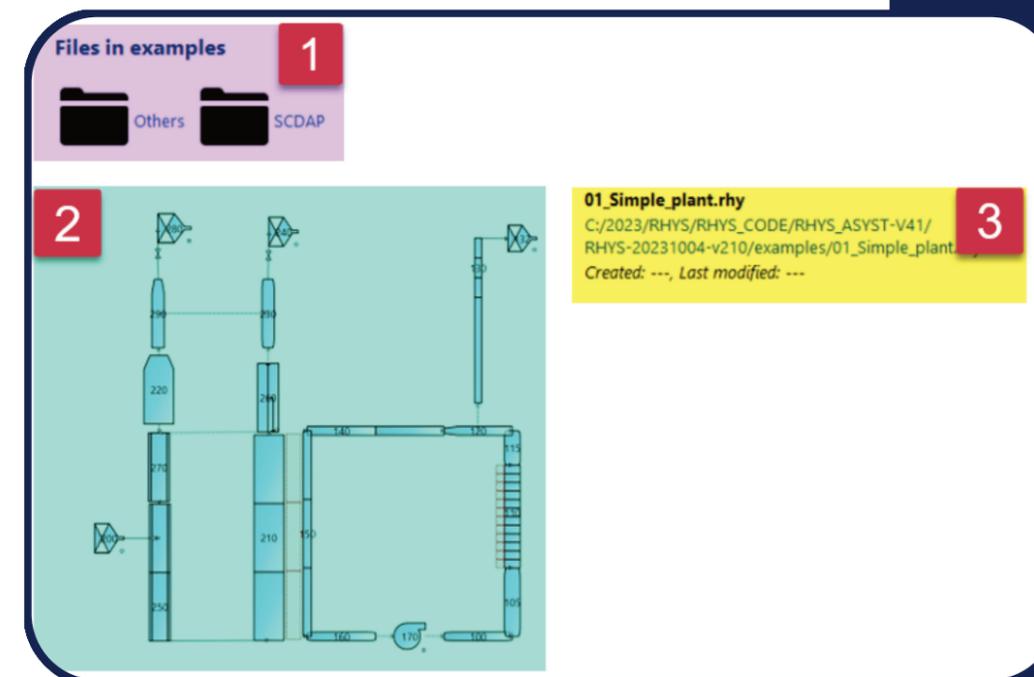
Dive deeper into simulation result analysis with RHYS's replay simulations, featuring interactive canvas visualization, which greatly saves rerun time.



RHYS - Model Organizer

Organize and quick access models

Organize and manage your models with ease on the RHYS welcome page. This dedicated section allows for efficient sorting into folders, complete with descriptive labels and thumbnail previews, ensuring quick access and optimal workflow organization.



Features



Replay and Review Simulation Results



Interactive Canvas for Visualization



Eliminate the Need for Re-runs



Build sub-folders and sorting different project files into different folders.



RHYS Project file corresponding input model node view helps quick finding which project file you want.



Show RHYS project file name *.rhy, save path, created user and last modified date.



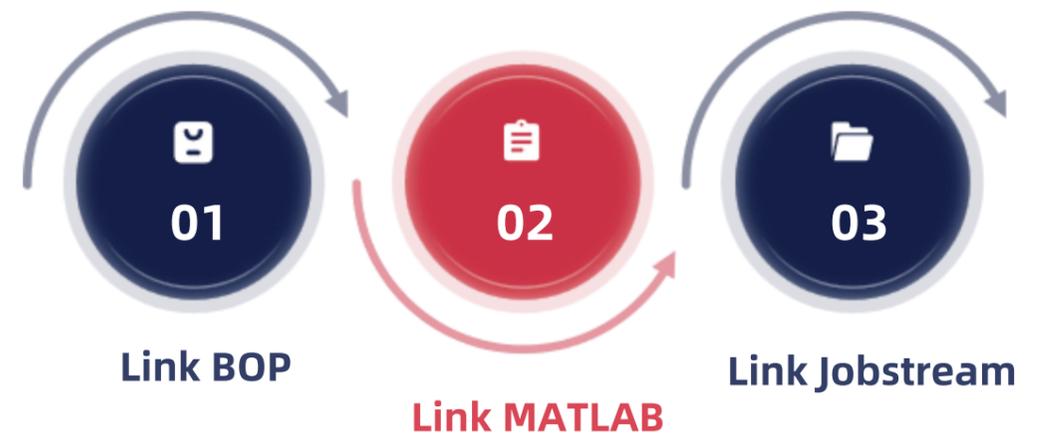
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**MAKE SYSTEM CODE EASY
to USE WITH RHYS**

- Future RHYS

Expand RHYS' capabilities with user-developed plugins through our comprehensive plugin interface. Our commitment to fostering an open-source community means that existing plugin codes are accessible to members, encouraging innovation and collaboration. Enhancements include the restart management plugin, batch processing, specialized view tools (SCDAP, COUPLE), and paint brushes, among others, offering endless possibilities for customization and extended functionality. Join our community to unlock RHYS's full potential and contribute to the ever-growing repository of tools and plugins.

RHYS - EXTENSION Examples



10+ Years System code Experience

Simplifying systems code, empowering users.



USER MAP



RHYS linked with different versions of SYSTEM CODE

RHYS Capability		System code	
		ISS version	Other version
Node viewer		√	
Input builder		√	√
Simulation	Run	√	√
	Pause/stop	√	
	Interactive	√	
	Real-time display curve	√	
	Real-time display contour	√	
Postprocessing		√	√
Replay		√	

ISS: Innovative Systems Software, LLC

ISS version system code: RELAP/SCDAPSIM and ASYST

Distributors

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We are dedicated to ongoing development RHYS and welcome you to try our software. Your feedback is invaluable in helping us improve and deliver better solutions. Thanks!



INNOVATION



EFFICIENCY



RELIABILITY