

Debate on Software Reuse Libraries

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Panel Overview

High levels of reuse depend on a source of software to reuse. To meet this need many organizations have based their reuse programs on a centrally managed reusable software library (RSL). However, although the library metaphor has guided early work in classification, retrieval, and other areas of reuse technology, experiences vary on whether a centrally-managed RSL or domain-specific RSL provides the best focus for a reuse program. While library-based reuse has worked with stable and well understood application areas, experiences differ where the diversity of business makes it difficult to share all but the most general-purpose, low-level functions [1], [2]. This panel will debate points surrounding:

Do Reuse Libraries Provide the Key to a Successful Reuse Program?

Panel members will defend positions on each debate point with experiences, theory, and anecdotes that both inform and involve the audience. The panel will consist of:

- Charles W. Lillie, SAIC, Deputy Director of the Asset Source for Software Engineering Technology (ASSET).
- Jim Moore, The Mitre Corporation, Chairman of Reuse Library Interoperability Group (RIG).
- Jim Solderitsch, Unisys Corporation, co-designer of the Reuse Library Framework (RLF) and technical advisor to the US Army STARS Demonstration Project.
- Kevin Wentzel, Hewlett-Packard Laboratories, Project Manager for Software Reuse Technology.

The panel will debate:

1. *Does a single, general-purpose RSL or a domain-specific RSL provide the best method to leverage knowledge and assets across a large organization?* Do centrally-managed RSLs or RSLs that focus on specific application areas (domain-specific libraries) yield the greatest benefit? Which approach has the highest expected economic value? Which has the greatest impact on cycle time, productivity, and quality?

2. *Can RSLs effectively interoperate across organizations?* Many RSLs exist today but use unique methods to manage assets and interact with reusers; economic and technical issues arise as we try to find the best way for these RSLs to work together. How would a distributed network of RSLs function? Must RSLs make the domain model of the application area they support a visible part of their interface so as to help reusers locate and fully understand assets? Should RSLs facilitate economic benefits and incite reuse by providing a decentralized electronic marketplace for assets?

3. *Does a RSL require a formal classification for components stored in the library?* A RSL uses a classification and retrieval mechanism to help reusers locate reusable software. Does the benefit to the reuser justify the cost associated with defining and maintaining a formal classification mechanism? Does the training required to effectively use the classification offset the power it provides during the search for components [3]?

4. *Must a RSL provide specialized reuse support, such as user registration, version control, and problem notification?* How do different customer sets, uses, and roles played by RSLs affect the type of support provided by the RSL? For example, how does an “archival” RSL differ from an RSL that actively seeks to sell copies of its holdings? What RSL features return the most benefit?

References

- [1] Griss, M., “Software Reuse: From Library to Factory,” *IBM Systems Journal*, Vol. 32, No. 4, 1993, pp. 548-566.
- [2] Lubars, M.D. and N. Iscoe, “Frameworks Versus Libraries: A Dichotomy of Reuse Strategies,” *Proc. 6th Annual Workshop on Software Reuse*, 2-4 Nov. 1993, Owego, NY.
- [3] Poulin, J.S., and K.P. Yglesias, “Experiences with a Faceted Classification Scheme in a Large Reusable Software Library (RSL),” *17th Int. Computer Software and Applications Conference*, Phoenix, AZ, 3-5 Nov. 1993, pp. 90-99.