

**Name:** Prism-MW

**Presenter(s):** Sam Malek and Chiyoung Seo

**Objective:** Prism-MW is an extensible architectural middleware, which provides a set of classes for implementing a distributed system in terms of its architectural constructs (e.g., components, connectors, events, and so on).

**Rationale:** For software architectural models to be truly useful in a development setting, they must be accompanied by support for their implementation. This is particularly important in the context of embedded and mobile systems: they are often complex, highly distributed, decentralized, heterogeneous, mobile, and long-lived, increasing the risk of architectural drift unless there is a clear relationship between the architecture and its implementation. This suggests that state-of-the-art middleware solutions (e.g., CORBA Orbix, TAO) that lack the implementation-level facilities for key elements of software architecture (e.g., explicit support for software connectors or architectural styles) are not necessarily the best candidates for architecture-based software development. Therefore, the motivation behind the development of Prism-MW has been to provide a middleware solution that supports architecture-based software development paradigm.

**Target Users:** This tool is designed for software architects and developers.

**Scope:** Software Architecture, Architecture-Based Software Development

**Project Type:** Multi-year USC-CSE research project sponsored by various industrial partners, such as Bosch Research and Technology Center, JPL, and US Army.

**Runs On:**

- Prism-MW is available in both Java and C++
- Java version is OS and hardware platform Independent
- The C++ version has been tested and supported on several types of OS (e.g., Windows, and Linux) and hardware platforms (e.g., Intel-based, Arm-based)

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**Technical Approach:** For more technical details and to download the middleware refer to <http://sunset.usc.edu/~softarch/Prism/>

**Developers:**

Principal Investigator: Prof. Nenad Medvidovic

Tool Development: Sam Malek, and Chiyoung Seo

**Future Directions:** We are currently in the process of applying and evaluating Prism-MW with our industrial partners. As a result, a number of future enhancements are in the works: support for service discovery, fault tolerance, quality of service, and so on.