

## Methodics - Architected for Multi-Site Collaboration

### Problem

With the continued consolidation of the design activities more and more projects are being worked on across multiple geographic locations. This brings challenges in the form of language barriers, time-zone alignment, data-set alignment, planning and others. The “24 hour shop” concept is good in principal but often involves both sets of engineers staying up late to overlap and resolve data issues, design handoffs etc. What is needed is a real collaborative platform for multi-site design efforts, something that communicates the current state of the design, planned changes, history of previous changes and way to deliver the design assets to each location quickly with minimal user intervention.

### Solution

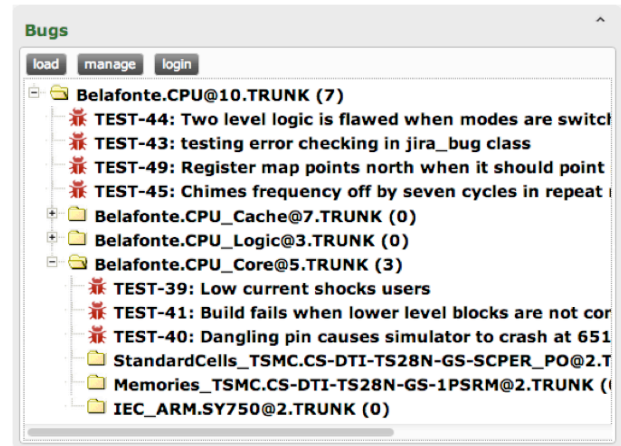
Methodics first released the ProjectIC IP Management platform in 2010 and has been steadily refining its multi-site capability since then. Today's solution includes innovations in a number of areas to facilitate this

#### 1. Centrally Defined Configuration Management

Having a central definition of the current project IP versions, the quality of these IP's. ProjectIC addresses this with its “PiServer” corporate database of IP and project metadata including the hierarchical resource tree (including the subsystem IP versions) for each project, meta-data collected from user workspaces to identify IP quality for each version released and others

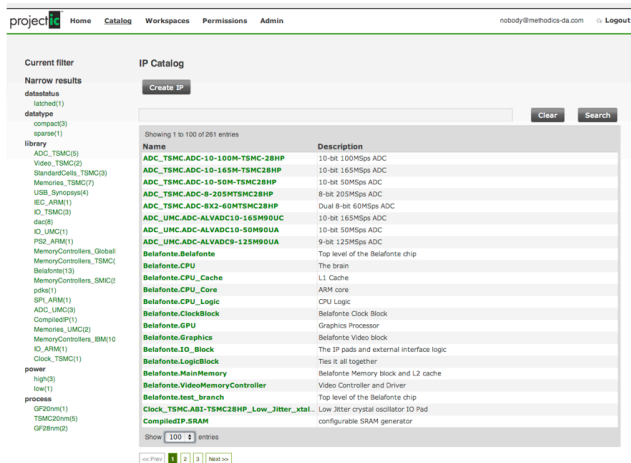
#### 2. IP Centric Bug-tracking

Off the shelf bug tracking tools like Jira and Bugzilla do not work well in an IP context. Typical SoC's include IP's from disparate sources in the company, each of which is usually considered a separate project from a bug-tracking perspective. ProjectIC will query the bug database for bugs associated with each IP version used in the system, and present a consolidated hierarchical view of bugs for the SoC



#### 3. Centralized IP catalog

We need a centrally defined database to discover the existing IP in the company, including its quality, the location of the files in the data management system, all the available versions of the IP, which versions are recommended for use by the IP owner, which projects are using these versions so that we can quickly inform any at-risk parties. The ProjectIC “PiWeb” catalog has an easy to query searchable database with multiple levels of metadata for organizing IP's including labels, custom properties, project based etc. This catalog is auto-updating and self-regulating so that when IP's and IP versions are introduced to the system from within a project they are automatically added to the catalog. This is important to keep the IP catalog current, manual maintenance of the catalog is very difficult to do over a large multi-site organization and usually means the database becomes stale and unusable



configuration and ProjectIC will manage the reference automatically. In many cases users only need write-access to a subset of the IP's in their workspace so an IP cache can represent significant disk space and IO bandwidth savings

#### 4. Multi-Site Data Replication

DM Proxies, local commits, meta-data replication. Once we've centralized the IP metadata the next step is manage the data management repositories in a way to reduce the time taken to deliver files to user workspaces. One great system we support is the **Perforce** Edge and Replica servers. These will maintain a complete copy of the central repository at the local sites so that meta-data queries, commits and syncs can happen locally without the need for WAN activity. These replica servers are kept up to date in real time with no user intervention required

#### 5. De-centralized Data Management

Another method for reducing multi-site data latencies is to maintain the master Subversion or Perforce repository at the remote site if that is where the majority of the development activity is taking place. ProjectIC allows the repository location to be defined on an IP basis so that workspace creation will query the local server and reduce WAN delays

#### 6. Multi-site IP caches

Any important part of the Methodics multi-site solution is the use of IP Caches to maintain local read-only versions of popular IP's for consumption at remote sites. These are updated and propagated automatically as part of the Methodics IP release process and mean that users that only need read access to a particular IP can set that IP to "refer" in their workspace



#### 7. Large Data-set Block-Level Replication

A slightly different technique for reducing multi-site delays is to maintain master versions of the important project workspaces (releases) and deliver changes multi-site between these masters incrementally at the file-system block level, as new releases are made. This reduces the need for large DM checkouts into a workspace since the user workspaces can use lightweight clones using these replicated masters. This technique requires use of the [WarpStor™ technology](#) introduced by Methodics [earlier this year](#)