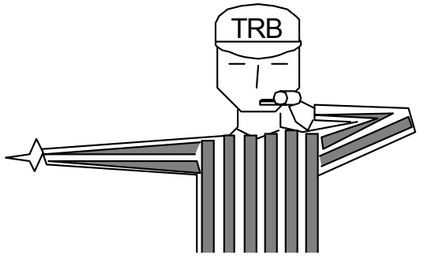
Overseeing IT (Information Technology)

In the previous issue of this newsletter, the Technical Review Board (TRB) was introduced. The TRB was put together to oversee our technology architecture and facilitate the Technical Reference Model (TRM) as it is being revised. The Information Technology Investment Board (ITIB) chartered the TRB (you can find the charter at http://web.blm.gov/bea/technology.htm) as a board that has access to security experts, system engineers, system administrators, etc. to resolve conflicting technical architecture issues. In the complex world of technology it is easy to have information gaps between senior management and technologists; TRB serves as a liaison between them. The TRB will delegate a lot of its actual work to subject-matter experts who do the technical analysis and report on it. For instance, the TRB will be using these subject-matter experts (also known as Technical Advisory Groups, or TAGs) to contribute to the TRM. The TAG will analyze the issues surrounding a particular technical question and make recommendations; the TRM is the documentation of those decisions.



The TRB referees questions about Bureau architecture, using the TRM as the rulebook.

The TRB held its introductory meeting on January 16th. In that meeting, the board decided to:

- Approve the TRM restructuring
- Use Technical Advisory Groups (TAGs) to support the BLM TRM and DOI Architecture schedules
- Evaluate the board's membership

For now, the board is scheduled to meet monthly by teleconference. At each meeting, the board will discuss the subjects to be discussed at the ITIB meeting the following month.

The TRB is co-chaired by Bureau Architect Colleen Coggins and Arizona CIO Council member Chris North, so as to ensure representation from the Field and Washington offices.

TRB members include:

Colleen Coggins—Bureau Architect

Chris North—CIO Council (Arizona)

David Shearer—Deputy CIO

Mike Garratt—NIRMC System Engineering

Ron Strong—National Telecommunications Manager

Rob Cervantes—CIO Council (California)

Wayne Elvin—CIO Council (Oregon)

Paulette Little—National Configuration Manager

Jim Rolfes—WO-600 CIO Council Representative

Pam Chesla—Acting National Security Manager

John Foster—Chief, System Coordination Office

Jerry Sempek—WO-200 Acting CIO Council Representative

Mike Candelaria—CIO Council (Idaho)

To Be Determined—GIS Specialist

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E-GIS Status Report

The E-GIS (Enterprise Geographic Information System) project has contracted with ESRI to help in developing a geospatial system architecture. The goals of the architecture study are as follows:

- Identify the Bureau's geospatial users
- Define geospatial user requirements
- Develop a "target" enterprise geospatial system design
- Ensure integration with NILS, LUP (Land-use Planning), and EAI (Enterprise Architecture Infrastructure) project initiatives.

The E-GIS project is managed by Jim Turner and the spatial technology coordinator is Jim Scrivner.

Mike Garratt, Chief of System Engineering is also providing support to the E-GIS core team to ensure their success in integrating with the overall Bureau IT direction.

What Is Your Question?

What would you like to see explained in this newsletter? What do you find interesting about the BEA? Do you have a correction or comment?
Send any questions, comments, notes, suggestions for future articles, or BEA-related pictures to Karen Dahlby at Karen_Dahlby@blm.gov.

BLM Enterprise Architecture (BEA)

Component-Based Architecture Is Under Way in the BLM

A component in a system is like a brick in a wall. Bricks have some standard qualities, such as a standard length and width, so that you can count on every brick fitting the same way into the wall. To appreciate the time this saves in designing a system, try building a wall out of a pile of rocks! Not only will you spend more time trying to get a little rock to fit right between two big ones, you'll use a lot more mortar to hold things together. What's true of bricks is also true of systems. If you can have well-defined components that always act the same in the same situations, you can save a lot of time and code in designing how these components fit together. This is called component-based architecture.

RAS Success Story

An outstanding example of component-based architecture is the RAS (Rangeland Administration System) application, a web-based system that processes grazing applications, issues grazing permits and leases, and generates bills for grazing. Deployed in October 2001, it has been a hit with users. It has several advantages over the old system, including web access and centralized data. Another advantage is speed—one report that used to take three weeks of gathering data from 120

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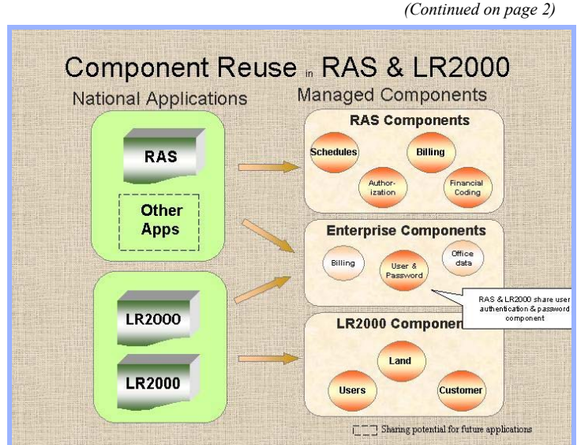
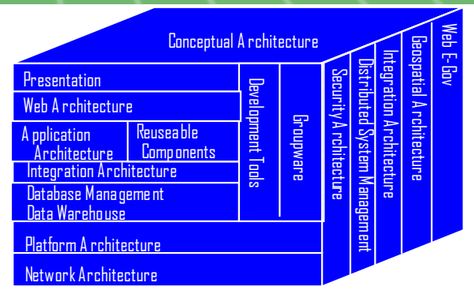




BLM TRM Helps the DOI

What *is* the TRM? The TRM is our Technical Reference Model. What's a Technical Reference Model? It's the single place to look for the Bureau's technology and product standards.

The TRM is reviewed every six months and updated every year to ensure that it matches business needs and incorporates state-of-the-art technology. The reviewers compare the current business needs and the latest changes in the national configuration management (CM) baseline with the existing TRM. If a new technology or product proves itself through research and testing, and is required to fulfill a BLM business need, it is accepted into the BLM realm.

An exciting new development is that we are now helping with the first departmental TRM! As the first major bureau with a TRM already in use, the lessons we've learned are very valuable to the department. The close involvement also helps us; we get to participate in the selection of DOI standards, and when we update the BLM TRM we can make sure it fits DOI standards.

The DOI TRM won't duplicate ours, because DOI standards will have to address requirements for the entire department and therefore may be much broader in product and standard selection. The DOI has to balance the advantages of standardization with the danger of interfering with what the bureaus already do well. Our TRM will continue to be the detailed product and technology standard for the BLM.

Component-Based Architecture Is Under Way in the BLM (continued)

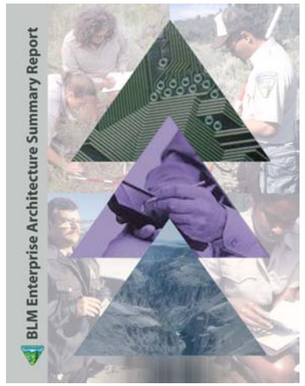
(Continued from page 1)

sources now takes about 30 seconds! RAS also works within our enterprise architecture by using the same development tools (Brio, Prolifics) that the Bureau used in developing other systems.

But beyond all this, RAS has been a pioneer in component re-use. The L&RPO (Land & Resource Project Office) development team that created RAS knew they would need a strong password module. Realizing that LR2000 had already implemented strong passwords on the client, the L&RPO team re-used the original code and created a user/password business component that was now independent of the client. When the rules for strong passwords changed in January, L&RPO made the needed changes in the component and now can make that available to other applications by storing it in an enterprise component server. This approach minimizes the overall cost of ownership by accelerating future software implementation and reducing maintenance costs. BLM completed a post-deployed cost analysis that showed a 1.1 cost-benefit ratio.

Summary Report

Our conceptual target architecture promotes component-based architecture. Benefits of this design include having components that are interoperable, scalable, flexible, and transparent to the user. For more information about the BLM's move to component-based architecture, see the BEA's Version 2.0 Summary Report at http://web.blm.gov/bea/BEA_reports.htm.



BLM Bureau Architecture (Version 2.0) Summary Report, November 2001

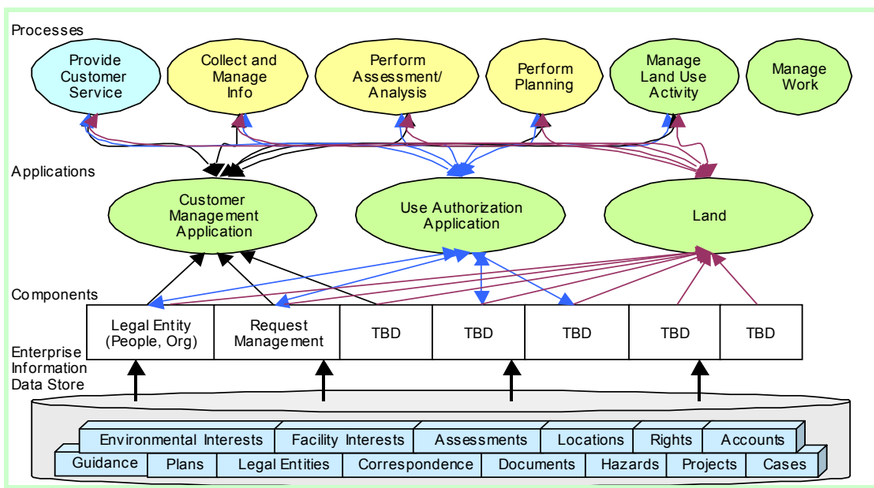
The graphic at the bottom of this page from the Summary Report shows a conceptual diagram of how components may be used at the BLM enterprise level to support our business processes. Processes are automated by applications which use the components stored in enterprise information data stores.

Components Government-Wide

In working towards component-based architecture, the BLM is following the trend of the federal government, which has decided that the National Institute of Health, for instance, should be able to share an online grants program with the Education Department. To encourage this kind of re-use across federal agencies, the government is promoting a component-based architecture that makes it possible for one agency to use technology that has proved successful in another agency, according to Mark Forman, OMB's associate director of information technology and e-government. In a March 15 interview with *Federal Computer Week*, Forman called the new system "a much more flexible format. Modernization moves much faster, and we get price performance at the same time." Government-wide, component-based architecture will make it easier to keep systems updated, because it is cheaper and easier to swap out outdated components than whole systems.

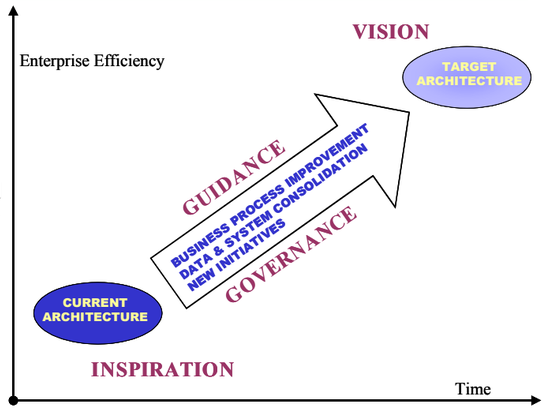
Effect on BLM

How much will component-based architecture affect the BLM? Read the Summary Report to learn how it will impact and be impacted by future application development, current architecture, and time to market. The report also mentions success stories and lessons learned by other organizations such as NASA's Jet Propulsion Laboratory, the Air Force, Motorola, and Honeywell, that are using component-based architectures. The conclusion is that component-based architecture is good for the BLM. We can look forward to a day when all our components (bricks) will be right there, ready to be used in any system we need!



What will the BEA do for the BLM?

The purpose of the BEA is to provide **vision**, **inspiration**, **guidance**, and **governance** to help the BLM make the best investments of its technology and improvements in its business processes and data management.



The BEA helps the BLM improve by providing Vision, Inspiration, Guidance, and Governance.

Provide a Vision. Our current business processes were modeled through facilitated subject matter expert team meetings over the course of the last two years. These models were analyzed and will continually be reviewed for potential process improvements. The underlying goal is to move BLM's current way of doing business towards optimized target architecture processes, which guided process improvement, increased data sharing, and reduction of redundant data. The Version 2.0 of the BEA Summary Report, published in November 2001, provides the BLM's conceptual target architecture. The target architecture will continually evolve as the BLM's processes are improved and reengineered.

Inspire Progress. The BEA inspires continuing evolution toward the Vision by reporting progress in reaching the target architecture and the benefits of that progress and continually identifying new opportunities for orderly improvements.

Guide the Transition. The BEA also guides our course to the Vision by providing and explaining a blueprint for the components and connections that make up the target architecture and helping BLM business programs use and benefit from the blueprint.

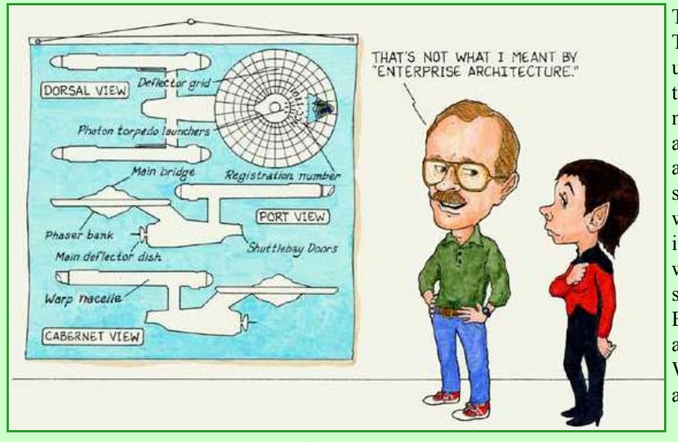
Govern Change. Finally, the BEA identifies risks to IT project managers of making decisions that stray from the Vision. Sometimes, after careful review, modifications in the architecture may be warranted. More often, project proponents will be asked to modify their proposals to better align with the Vision.

Key BEA Strategies

1. Continually evolve and maintain the Vision (the target architecture).
2. Help the BLM business programs adopt and benefit from the target architecture. This will include direct support for business process improvement efforts, data standards development efforts, automation projects, and business case creation.
3. Help the SCO (System Coordination Office), TRB, and ITIB (Information Technology Investment Board) to *select*, *control*, and *evaluate* information resources projects according to the target architecture.
4. Recommend steps (with the best return on investment) to transition from the current architecture to the target architecture.
5. Ensure the BEA is responsive and aligned with the strategic direction of BLM.

Recent Developments

- An investigation paper on document management efforts within the BLM was delivered February 1, and is available on the BEA web site.
- The February BEA meeting was held in Denver on February 20-21. The meeting notes have been distributed to the BEA team.
- John Broderick accepted the Desired Business Process Architecture (DBPA) models on April 4th, and will be meeting with several BEA members and BLM SMEs during the second half of April to explain and validate the models. The models at the next level of detail (third level) are under revision to align with the recent conceptual changes.

BEA Team Notes

- The BEA team has reached agreement to support the development/adoption of a Trails data standard. This standard will be used not only within the BLM, but across many government agencies. The team is also looking at other standards efforts within the BLM that it can support. There will be a BEA discussion panel and several BEA-related sessions at the upcoming GIS Workshop in Phoenix at the end of April.