Knowledge Management Newsletter

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"Open Access" Goes Live!

By David Oberhettinger

Do you have access to the information you need to do your job?

JPLers need to be able to find answers to their technical problems, and find them quickly. In the Spring 2015 issue, we reported on our efforts to remove arbitrary restrictions upon universal JPL access to DocuShare® project library content.

The Open Access Initiative has gained traction in opening the project libraries to "read" access across the Lab. After demonstrating to the Project & Engineering Management Committee (PEMC) the ability to screen out sensitive material, the PEMC ruled in favor of "managed transparency." This means releasing most documents in the project libraries' Controlled Data & Records (CD&R) collections for unrestricted access by U.S. Persons at JPL. CD&R collections are subject to configuration control; they have been pre-screened by a curator to remove unofficial content such as outdated versions of documents.

Open access is now provided to 37,000 controlled documents in six project libraries— Dawn, GRACE-FO, Jason-3, LDSD, MSL, and SMAP. This content has been pre-filtered to prevent release of sensitive documents such as Space Asset Protection data or documents marked "JPL Business Discreet." Access to additional project libraries, formerly closed to non-project staff, will be rolled out over the coming months following completion of librarian training on such topics as file marking. For those project libraries that lack formal configuration control, improved screening tools may be needed before open access can be granted.

KM Champion's Corner

MSL Mentoring Program

By Jennifer Trosper and Mary-Ellen Derro

Ops mentoring. Planning the next sol's movement of the five degrees-of-freedom Mars Science Laboratory (MSL) Robotic Arm is extremely complicated compared to previous Mars rovers. The training needed to perform MSL operations functions cannot be captured in users manuals. In October 2014, MSL began a 10-month mentoring program in which 17 mentors with deep project experience in surface ops mentored 58 MSL Ops Team members.

In addition to daily interactions and bi-weekly mentor/group meetings, the participants met with MSL management each quarter to provide feedback and lessons learned. Early in the program, the participants met with Dr. Elachi to discuss mentoring at JPL and his own experiences as both a mentee and mentor.

Rover on a plane! The Mars Program Office also sponsored a rover design engineering mentoring program similar to the JPL Phaeton early career hire (ECH) development program, Six ECHs were mentored by their group supervisors and other experienced personnel. They built three flight-like rovers, and they were guided through the entire design process from initial design reviews to delivery. One rover with autonomous navigation had recently been completed and was visiting Las Vegas when the White House requested it for a STEM event. On January 13, 2016 it was put on a plane to D.C. Having not yet tested the custom carrying case as airline baggage, the rover was placed on a United Airlines seat with Molly Bittner and Christine Fuller.

Christine , Molly, and rover pose with United Airlines flight crew.

"Fits great in a seat! 4 wheels on the bottom, two on the seat back."

Mentoring is one of the more effective means of sharing key knowledge that is *tacit*— i.e., that cannot really be written down. Mars 2020 plans to use the lessons learned from the MSL mentoring program.

Simplified Search of Archived Records

By Mary Behshid

The Records Management Group has announced a simplified Web interface for searching its centralized registry of "D documents." The Electronic Document Information Management System (EDIMS) holds JPL internal documents and publications from the 1950s to the present. In addition, project repository custodians needing "D" numbers assigned, or needing other record identifiers, can request number assignments by submitting a request through the interface.

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When signed onto the JPL intranet, access to the initial set of 37,000 documents may be obtained via the search window at JPL Space. After entering the search string, the search results can be limited to this DocuShare set by clicking the Search Tools tab and selecting "Source" and then "DocuShare."

The *Open Access Initiative* is supported by the Office of the Chief Engineer and the Office of the Chief Information Officer.

For Your Consideration

"*The challenge for the future is not that we will have a problem with how to store information. The challenge is that we will not know what we have.*"   - Jehoshua "Shuki" Bruck, Caltech

Lessons Learned

By David Oberhettinger

Errors may be inevitable given the JPL emphasis on undertaking high risk missions; but it is less justifiable when we ignore what we have learned by repeating known errors. Use of formal lessons learned may prove an effective countermeasure against avoidable risk.

> "*Why - I learnt what one ought not to do, and that is always something.*"   - The Duke of Wellington describing the failed Dutch campaign of 1794.

The JPL Lessons Learned Committee (LLC) has met weekly since 1984, incudes representatives from the major 3X and 5X technical divisions, and has published hundreds of lessons learned in the NASA Lesson Learned Information System (LLIS). The JPL lessons focus on the major events, both mishaps and successes, that have occurred on JPL flight projects and with JPL facilities. Each lesson learned avoids vague advice by providing recommendations that are clearly "implementable."

Recently published lessons learned include:

- Fidelity of the Dawn Thrust Gimbal Assembly Life Testing
- Battery Fire at the Madrid DSN Facility
- Fabrication of Propulsion Tubing for the MSL Descent Stage
- MSL Actuator Design Process Escape
- Deep Impact Deadly Embrace: Beware of Register Overflow Conditions
- Poor Coordination of Routine Maintenance Spoiled an Important Test

Lessons learned are infused into JPL procedures by cross-referencing them to specific paragraphs in the JPL Design Principles and in the JPL Flight Project Practices. JPLers are encouraged to suggest lesson learned topics to the LLC Chair.

"My Best Mistake"

Sometimes an error that you might prefer to forget proves over time to be especially instructive. NASA engineers and managers have posted a collection of short stories about their Best Mistake. See http://km.nasa.gov/tag/my-best-mistake/.

Hackathon Aids in Making Data Searchable

By David Oberhettinger

The inability to easily share data may limit knowledge sharing and collaboration. JPL held its first Search Hackathon in the 167 Café on September 30, 2015. The purpose was to teach participants how to establish and test a "search connector" that would make their database available throughout the Lab via JSearch. As explained in the Fall 2015 issue, JSearch provides quicker access to JPL intranet sites by allowing the user to perform searches that span across hundreds of internal domains, including unauthenticated JPL websites and wikis.
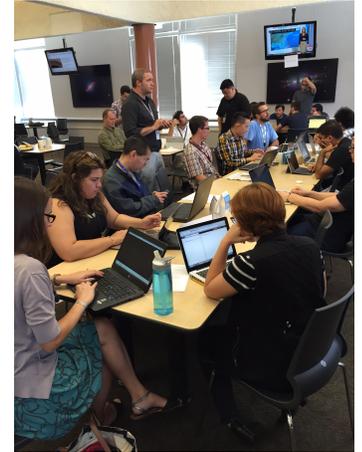
The 40 participants were assisted by search technologists from the OCIO. Three search connectors were produced in the café during the hackathon. (A search connector is an application that loads streaming data into a search engine cluster for indexing.) For example, Mark Powell (397F) was able to open a thermal engineering database to Lab-wide access, allowing hardware developers and data visualization specialsts to perform data mining of component metadata. A brief survey of participants elicited opinions suggesting that the hackathon format was an excellent informal environment for facilitating crowdsourcing of data.

OCIO has provided an instruction sheet detailing how to create connectors for JSearch, and they have established a Hackathons Community site for sharing information on JPL hackathons.

The Knowledge Management Newsletter box.

The **JPL Knowledge Management Newsletter** is intended to promote the capture, retention, and sharing of JPL intellectual capital. Please alert us to any ongoing knowledge activities:

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