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Introduction

On March 29 & 30, NASA hosted its first Open Source Summit at Ames Research Center in Mountain View, California. The event brought engineers and policy makers from across NASA together with well-respected members of the open source community together to discuss current challenges with NASA's open source policy framework, and propose modifications that would make it easier for NASA to develop, release, and use open source software.

Open source brings numerous benefits to NASA software projects, including increased software quality, reduced development costs, faster development cycles, and reduced barriers to public-private collaboration through new opportunities to commercialize NASA technology. This inherently transparent, participatory, and collaborative approach is revolutionizing the way software is created, improved, and used.

Although open source release has already provided some of the potential benefits to NASA, the full benefits of open source can only be realized if NASA is able to establish the processes, policies, and culture needed to encourage and support open source development. This will require expanding open source activities beyond releasing software only after completion and finding new ways to support two-way collaboration with an open development community throughout the entire software lifecycle.

This document provides a snapshot of the activities during the Open Source Summit and summarizes the major issues and recommendations received not only from the in-person attendees, but also through the various online venues utilized during the event.

Overview of event

The Open Source Summit was modeled after the popular OpenGov Community Summits that were co-hosted by the DOT, USDA, NASA, Treasury, EPA, and GSA throughout 2010. Called a Focus Forum, the format of the OSS was geared toward innovating new thinking and capturing solutions on a specific topic. Attendees were encouraged to engage in conversation and share ideas as well as participate digitally in various online venues.

Attendees heard from a variety of stakeholders in the Open Source community, including the DoD-affiliated Institute for Defense Analyses' David Wheeler, IBM's Bob Sutor, Google's Chris DiBona, and GitHub's Chris Wanstrath. Additionally, a number of leaders of NASA's open source efforts presented their projects and shared their experiences working within the current software development constraints at the agency. Targeted breakout sessions occurred between speaker presentations that addressed a number of critical issues and gathered ideas for potential solutions.

A breakdown of the event's agenda and breakout session topics may be found in the appendix.

Analysis of input collected

Ideas and input were collected at the Open Source Summit through a variety of methods that included participation from both participants physically at the event and remote participants via online platforms. Five communication vehicles for discussion were used: Google Docs, Ustream, UserVoice, Twitter, and Maestro (a virtual teleconference platform). Each platform served a different purpose and audience, with many participants using multiple services simultaneously.

Google Docs

Google Docs was primarily used by participants as a tool to take notes and write down proposed solutions to the issues raised at the event and serves as the most substantial documentation of the event. Twenty-three different documents were created and shared with the public, each covering a separate topic. From these topics, 66 proposed solutions were offered, a full listing of which is offered in the **Major Issues and Recommendations** section.

Ustream

Ustream was used by remote participants to watch live video of keynote speakers during the event. Additionally, an extensive chatroom was formed where participants discussed many aspects of the event (see **Ustream Chat** in the Appendix). There were a combined total of 2,315 views on Ustream throughout the event.

UserVoice

UserVoice, an ideation tool, was used to record and vote on specific actions or ideas during the event. Forty-seven unique ideas were posted on UserVoice and attracted a total of 638 votes and 125 comments. A full record of UserVoice activity is located in the **UserVoice Submissions** section in the Appendix.

Twitter

Twitter was also used extensively by participants to communicate using the hashtag #NASAOSS. Over 1,250 tweets were recorded originating from the event, reaching over 3 million people.

Maestro

Maestro was used as a teleconference tool for remote participants who wished to take part in various breakout sessions. Sixty participants used Maestro at the event for a total of 2,578 minutes of call time.

A synthesis of the input collected through all the above tools is located in the **Major Issues and Recommendations** section.

Major Issues and Recommendations

Issue #1: Communication and Publicizing NASA's Open Source Efforts

In order for an Open Source policy to be successful, NASA must make an effort to encourage both internal and external parties to participate in open source development. What does the agency need to do in order to make NASA's open source efforts well known?

Proposed solutions:

1. Portal page for NASA workers to locate agency Open Source projects

Create an online portal with historical and existing open source projects within the agency. The portal should have wiki-style tools for projects to assist with collaboration and publicity. Perhaps expanding this to be an entire "forge" repository, similar to Forge.mil. This could be a platform to base an entire federal-wide code repository on.

2. More Contests

Utilize coding contests to draw people in to work on open source projects, similar to Google's Summer of Code. Rewards could include cash prizes, publicity, or simply the prospect of adoption.

3. Encourage Contractor Participation

NASA would benefit from increased contractor participation in open source activities, perhaps by requiring software developed under government contract to be released as open source software by default unless restricted by export regulations or other security restriction.

4. Define main user categories

NASA open source developers, general public, worldwide open source developer community, science community.

5. Attend additional Open Source conferences

OSCON was discussed as a venue for NASA presentations or participation.

6. Create monthly meetup groups

Monthly local meetups (perhaps with bi-monthly nation-wide phone tagups) would galvanize community interest.

7. Create a Community Manager position

Someone to ensure the community is healthy, research new initiatives, run top coder competitions, unconferences, and code-a-thons.

Issue #2: Licensing

The NASA Open Source Agreement license (NOSA) was originally developed in 2003 to enable NASA to provide software in source code form to the public, but software must already be considered complete

prior to public release. This precludes the ability to develop software iteratively with other agencies and the public. In order to participate in the open source developer community, NASA needs to be involved in the development process from the beginning.

There are two issues that need to be addressed:

- How does NASA license the code it develops internally? Should it use NOSA or drop it? Why does such code need to be licensed at all? Shouldn't it be public domain?
- What licenses are conducive to government agencies using non-government code? For those that aren't conducive, the government needs a model for using those licenses in a way that makes lawyers happy.

Proposed solutions:

1. Drop NOSA in favor of existing mainstream open source licenses

Although innovative when first developed over seven years ago, NOSA is not a well-received license in the Open Source community and the purpose for its development no longer exists. NASA software should be released under whatever mainstream open source license makes sense within the development environment it is being released within. Further, re-license software that was previously released under NOSA using one of the mainstream open source licenses.

2. Create a policy and licensing for unfinished or in-progress development

The NOSA was created for releasing software that is complete. NASA needs a policy that addresses licensing options for iterative software development with a community that includes non-NASA workforce.

3. Be aware of licensed software within other open source software covered by a different open source license

An open source software package often will list only the primary license but may include modules from other sources in its distribution that are covered under a different license. Source code files may reveal additional licenses, as well as original copyright holders.

4. Approve a subset of OSI-approved licenses for NASA use

Review and approve a set of mainstream open source licenses (BSD, MIT, GPL, Apache, etc.) that can be used to license publicly-released NASA software so that such a review does not have to be performed for each release of NASA software.

5. Provide a one stop shop for NASA guidance with regards to licensing open source software

Provide a comprehensive source of the current regulations and restrictions. Create a FAQ that can be used to explain how different licenses may impact the release software.

6. **Define NASA requirements for Contributor License Agreements (CLAs).**

Currently, in order to accept and use third-party contributions, a CLA is required. Yahoo! is currently using “Harmony CLA’s” which are broadly accepted. Others include Fedora CLA, GNU Contributor agreement, and DARPA F6.

Issue #3: Barriers to Involvement from the Open Source Community

As a government agency bound by significant regulation and bureaucracy, what are the limits of community contribution? For example, could a NASA-originated codebase ever be handed over to a non-NASA community member for long-term support and maintenance? Is this legal? If it were legal, would it be practical?

Things to consider:

- Open Source developers should not be considered free labor.
- You need to have a mutual benefit in order for people to have motivation to contribute.
- Project/mission needs must be balanced with community needs.
- License compatibility issues are a barrier to open contribution and distribution of code.
- If NASA has the NOSA, but project contributors take patches from the community without requiring copyright assignment paperwork, it short-circuits the intention of the NOSA. People are going to route around the problem of overly restrictive licenses in practice.
- People need to learn about the code base before they can contribute.
- Opening things up early and accepting contributions would be better than trying to open things up later.
- NASA as an agency has to come to terms with “letting go” of a project and turning it over to the community in order for the community to thrive.
- NASA has a slew of exciting projects, but is laden with bureaucratic processes and delays.

Potential Solutions:

1. **Have NASA engage openly with the OSS community**

Using and finding engagement in OSS communities is a great way of driving expertise inward. NASA teams are already using Drupal, Django, Plone, Zope, PostgreSQL, Apache, memcache, Trac, SVN and many others. However, there is a need to incentivize (or at least explicitly encourage) involvement with open source communities. How does NASA contribute without implying endorsement of a technology or product?

2. **Use existing open source development tools**

Using proprietary or internal tools in the development of open source software can limit the number of developers who can participate. Software tools need to encourage open source participation. For example, using Subversion to manage source control is a barrier to entry because an open source developer cannot commit to a Subversion repository without having commit access. Using a distributed version control system (DVCS) such as Git, Bazaar, or Mercurial allows developers to freely commit to his or her own copy of an open source project

and allows for NASA to more easily select which commits it wants to integrate into a version specialized for mission use.

3. Make mailing lists and internal communication public

A large part of the development of open source software is having access to communication related to its development. Use separate, public mailing lists for each open source project at NASA. Set up Wikis and document repositories to host design documents, requirement analyses. Or better, host NASA open source projects on public repositories such as SourceForge and GitHub.

4. Describe how developers can contribute (and follow through)

Each project should create a public facing webpage that describes the process of contributing changes to open source projects. Actively work with developers to get their contributions committed to the main repository and respond promptly to questions on mailing lists.

Issue #4: Barriers to Development Models and Ongoing Support

How do we ensure that “open-ness” does not conflict with rigor? How narrow should the definition of “development team” be?

Proposed Solutions:

1. Get folks with passion for a project involved, even if they’re not formally assigned to that project

Those motivated by passion tend to do fantastic work. Open forums for suggestions tend to get great ideas. At times, it makes sense to borrow or lend team members to contribute to other projects – the TEAM wins in the end.

2. “Bug Bounty” program

Some organizations pay developers to fix bugs in open source software, particularly bugs related to security. NASA could have a similar program to encourage developers to work on issues that are important to NASA.

Issue #5: Government Restrictions

How to we mesh open source software with decidedly un-open policies such as ITAR?

Proposed Solutions:

1. Clearly describe applicable legalities

To assist the public with understanding applicable government regulations and/or contractual obligations, each project can write a document that outlines the legal issues that affect the

project.

2. **Specify who owns what**

Trademarks, intellectual resources, copyrights, patents... Which organization or person owns which?

Issue #6: Limitations on Contributing to External Open Source Projects

What are the differences between contributing minimal, incremental improvements or bug fixes and new features (as per NPR 2210.01)? And, who makes this decision? What lessons learned / best practices can be drawn from current NASA open source development “pathfinder” projects (and can these be applied “generally”)? What should be the policy of NASA personnel contributing in their off-hours? How do you handle / treat situations where people work off-hours on things that derive directly, or are inspired, by what they worked on during duty hours?

Proposed Solutions:

1. **Clarify existing policy and/or restrictions on contributing to open source projects**

Given the issues stated in the description and a general sense of confusion, and a prevailing attitude of “asking forgiveness is easier than asking permission”, NASA needs to clarify what the existing policy means for software developers who want to contribute to open source software projects that may or may not also be used within NASA. Publish this information prominently online and make it widely available. Simple, unambiguous language without a lot of caveats is critical.

2. **Agency-wide blanket authorization covering contributions to external Open Source Software**

The agency could create a blanket agreement permitting contributions to open source projects. This would be greatly preferable to having one-off contributor agreements for individual projects/contributions. This may require an incremental implementation given current contract language, contractor agreements, etc.

Issue #7: How does Open Source governance look within NASA?

There currently is a lack of information and awareness towards licensing, legal issues, and activity in the open source software community at NASA. How does one receive guidance on open source contributions? What does the process look like?

Proposed Solutions:

1. **Create a single point of contact for open source information/governance**

There should exist one central point of contact and process to initiate an open source project at

NASA. Should be similar to 508 or ITAR reps. The process should be short, non-legalistic, and make sense.

2. Create an Open Source “Review Board” (community of practice)

Create a group of subject matter experts who are not responsible for reviewing every line of code, but who can act as resources for answering questions, recommending policy guidelines, etc. Should have technical, legal, and policy knowledge (IBM uses 1/3 attorneys, 1/3 technical, 1/3 management).

3. Limit approval time to 1 week (on average)

Develop a new structure to run with 5 pilot projects to walk through the new process and try it out. It doesn't have to be perfect.

Issue #8: How should Open Source Efforts Be Supported?

NASA needs to develop cooperative support into project structure

- Project Level - permitting code deemed outside the purview of ITAR/EAR to be open source
- Budget Level - allowing for hiring of floating talent as temporary staff augmentation
- Organization Level - designing organization to support habits and practices of open source development

Proposed Solutions:

1. Assist with ways to get financial support

Provide directory of possible resources, including:

- a. Consortium/ Forum membership
- b. Standards groups
- c. Identifying sponsors

2. Offer Non-Financial Resources

Provide various support mechanisms, including:

- a. Unit testing
- b. Documentation
- c. Bug fixes
- d. Security validation

3. Convene conversations with organization experts on the appropriate management and org structures for supporting open source approaches

To sustain open source policy and practices over the long run, we need to think through the organizational and institutional structures that support this type of cooperative interactions. Material exists on how to run a successful open source project and we are generally discussing

open source policy. But projects and policy exist within an organizational framework and open source projects within government must happen within the agency's' legacy organizational structures.

Issue #9: How does NASA open source *everything?*

Proposed Solutions:

1. Implement a "Default Open Source" duration on code

There is a growing incentive to open source everything. Is this the right path to take? How does this fit into ITAR issues? Moving to data-driven approaches allows the software to be generic and exportable, and the quality of the data loaded into it determines whether it is ITAR. Open source projects are only useful where code can be generalized to solve many problems for many people.

Small-but-useful tools not developed in accordance to NPR 7150.2A are probably not available for any kind of public release. Should these be considered as well?

2. NASA Open Source Software Repositories

NASA could make use of two agency-wide source-code repositories (GitHub or something similar). Allow the "NASA-wide" open sourcing of projects, including potential ITAR/EAR ones, to be shared on this repository. The external (publicly accessible) repository would be a home for those projects that contain no ITAR/EAR issues. In conjunction with Proposed Solution #1, non ITAR/EAR NASA software could graduate to this location after its "Open Source Duration" is reached.

3. Establish requirements prior to start of project

Proposed software projects should describe the proposed functionality and requirements so that a preliminary ITAR review can occur. ITAR issues can be foreseen based on proposed functionality.

4. New projects should declare their license and get contributor agreements signed

When a new project starts, it should be declared something that can (or cannot) be shared openly; if not, proper justification for closing should be provided and documented, ideally with ways of how to make the project open-able (e.g., componentize into open and closed portions)

5. Acceptance of non-licensed community code

Much software is openly developed and freely shared by the scientific community. Unfortunately this software is often not released under any license. This requires NASA to obtain copyright releases from everyone involved in its development in order to redistribute it as part of a NASA project release. Determining who has touched this community code is often very difficult. If the community is freely distributing code without regard for copyright and licensing issues, then NASA should be allowed to follow suit.

Issue #10: How to close the feedback loop between policy makers, developers and end users?

How do we ensure that draft policies have enough eyes on them, particularly from the people who may be most affected or who have the most detailed knowledge of those areas, and who can thus best understand the implications? Policies should not put anyone in the position of performing the mission by violating the policy, or adhering to the policy and thereby reducing the effectiveness or inducing the failure of the mission. Many times, our policies derive (or are simply copied) from Federal law, regulation, guidance or, more commonly, from the policies of other agencies. Effective feedback provides opportunities to modify or adjust policy based on practical, realistic feedback. Are we taking advantage of these flexibilities?

Potential Solutions:

1. Experiment with open policy reviews online

Instead of performing relatively closed reviews of draft policy, place draft policies online where each individual paragraph of the draft policy can be commented on by anyone within NASA, and perhaps those outside of NASA. Those comments can then be responded to online and explanations given for why a particular comment was accepted, rejected or re-written. This would allow those for whom a policy will affect to provide accurate, more relevant and useful feedback on implications and issues with each portion of a draft policy before it becomes cast in stone.

2. Reverse the policy development process

Policy written at the agency level may often be written by those with little or no direct experience in the areas where the new policy will apply. Where possible, have communities that will be affected develop the policy, and have the Agency organizations that would normally write the policy serve as reviewers of it. This may not work for all policies, but for some would it be possible to provide the purpose of a new policy, the laws and regulations that constrain the scope or reach of the new policy, and allow the community to develop the new policy to meet those requirements? Doing so would likely reduce bad policies that create unnecessary obstacles and waste time and resources in working around them. Things we would need to determine first:

- Who writes current policies within NASA for IT and other areas?
- What is the process for reviewing draft policies before they are implemented?
- Who reviews draft policies, and are they versed in the area the policy applies to?
- How does someone get access to the comments that are fed back during the review process?
- How do we know that draft policies are receiving thorough reviews given that everyone seems oversubscribed already?
- Is there a mechanism for anyone within NASA to provide feedback to draft policies?
- How does someone who provides feedback know that the feedback is being looked at?
- Are there cultural barriers to providing feedback?
- What are the organizational barriers to providing feedback?
- How to track that each section has been reviewed by appropriate stakeholders?

- How often are policies updated? What constitutes the need to update a policy (what is the policy for updating a policy)?

Issue #11: How to encourage cultural change in hiring practices?

How can NASA attract more open source-savvy people in a world where companies like Red Hat & Google offer careers that encourage such participation? NASA is competing against these companies for the same skills.

Potential Solutions:

1. Highlight NASA's Ongoing open source participation

Do a better job of marketing NASA's current OSS participation

- Make 'Heroes and Rockstars' out of NASA personnel working in OSS
- Get these people out on OSS speaking circuits (evangelists)

2. Streamline the Process to Participate in External OSS communities

Allow a 20% time for individuals to contribute to/participate in OSS communities on NASA's behalf

3. Proposed Solution #3: Allow for remote/distributed work

Don't limit your search for OSS talent to just locations/centers that NASA has a physical presence in. Tap into university programs and other academic institutions, etc.

Issue #12: How to Package Open Source Software to be More Accessible

Collaboration on open source software is dependent on others who find the software useful. The barrier for adoption of OSS must be kept low. This also prevents the project dying on the vine. Is there a way we can package OSS to make it easy for others to try and adapt to their needs?

Proposed Solutions:

1. Develop generic APIs

2. Market the software such that it addresses a "general" need. For example, "commodity services" - a wiki, an email system, a content management system

Marketing of the OSS should not be strictly through the perspective of the specific application. Present scenarios for wider application. May want to look at dividing up existing software packages into useful tools. E.g. break down something like World Wind into its modules and then combine modules into logically separate projects. Encourage reuse and visibility by cataloging existing projects such as <http://ti.arc.nasa.gov/opensource/projects/>.

3. Leverage cloud computing and VM images

Create "turnkey" systems that demo OSS in a way that will speak to larger community needs. Include extra support material targeted to needs of the Federal Government such as security documentation for FISMA conformance. Add security features that would make these work both inside and outside the NASA environment.

- 4. Package so software can be distributed by a 3rd party that has a reputation**
Standardization improves trust in the product. Providing packaging specification (such as RPM spec files) would also help.
- 5. Distribute software binary executables compatible with a specific software stack**
Packaging binaries compatible with a specific software stack could increase adoption, however still having a reliable path to build from source code in a repeatable process is needed.
- 6. Provide simple, accessible documentation on the software and its use**
Good open source software systems have a common set of basic documentation that includes some features:
 - system requirements and constraints
 - installation instructions
 - tutorial introduction
 - a way to download the source code

Issue #13: Combining open source software development standards with Office of the Chief Engineer Policies

NPR 7150.2A applies to all software development by and for NASA. In many cases, the mapping of NPR 7150.2A requirement to the open source development processes is apparent. However the mapping is not always obvious.

Proposed Solutions:

- 1. Ensure there is a dialog between Open Source Community and OCE regarding mapping NPR 7150.2A to open source development process.**

Unanswered Issues:

The following questions were topics considered at the Open Source Summit that did not receive meaningful discussion or responses:

1. How do we offer project managers guidance regarding the best open source models for their projects?
2. What are the obstacles to Two-Way Sharing of Information?
3. How to untangle licensing regulations?
4. Different applications of open source licensing (i.e. research vs. ops)?
5. Open data: how to release more data and make it part of how we do business

Appendix

Registered Participant List

Registered In-Person Attendees

| Name | | Title | Organization |
|---------|---------------------------|--|--|
| Arash | Aghevli | | |
| Avinash | Agrawal | Director, Open Innovation | Seti Institute |
| Andrew | Aitken | Gm & Svp | Olliance Group, A Black Duck Company |
| Jesse | Andrews | | NASA Ames - Dell |
| Javier | Barreiro | Software Engineer | NASA Ames - Sgt Inc. |
| Greg | Barrett | Geospatial Specialist | Independent Consultant |
| David | Bell | Director, Usra Research Institute For Advanced Com | NASA Ames - Sgt Inc. |
| Genesis | Berlanga | Nlsi Intern | NASA Ames Research Center |
| Ross | Beyeer | Research Scientist | Sagan Center (SETI) And NASA Ames Research Center |
| Zaheda | Bhorat | | |
| Gary | Borda | Agency Counsel For Intellectual Property, Ogc | NASA HQ |
| Chris | Boshuizen | Space Mission Architect | NASA Ames |
| Fred | Bourgeois | | Team Frednet |
| Deborah | Bryant | Public Sector Communities Manager | Oregon State University Open Source Lab |
| Richard | Bullington-McGuire | Director, Technology | Three Pillar Global, Inc. |
| Bob | Burbach | Founder, Open Source Developer | Critical Juncture, LLC |
| Heather | Burke | Program Manager | Space And Naval Warfare Systems Center Atlantic (Ssc Lant) |
| Matthew | Burton | Technical Architect | Consumer Financial Protection Bureau |
| Steven | Carmine | Federal Account Rep. | Red Hat |
| Edward | Chan | Task Area Manager, NASA Soc | NASA Ames Dell Services, Federal Government |
| Soo | Choi | | NASA Ames - Dell/Anso Labs, LLC |

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|-------------|------------------------|-------------------------------------|-----------------------------------|
| Op | Choudhary | President | Opal Soft |
| Cyrus | Chow | | |
| Kim | Chrestenson | Ames Software Release Coordinator | Deltha/Critique |
| Bob | Ciotti | Supercomputing Systems Lead | NASA Ames Tne |
| Yvonne | Clearwater | New Media Innovation Leader | NASA/Ames/Nmit |
| Keith | Cowing | | Spaceref Interactive |
| Diana | Cox | Patent Attorney | NASA Ames |
| Jason | Crusan | | NASA HQ |
| Linda | Cureton | Chief Information Officer | NASA |
| Joshua | Davis | Manager, Open Technology & Outreach | Georgia Tech Research Institute |
| Martha | Del Alto | Software Release | NASA |
| Bosco | Dias | Software Engineer | SAIC |
| Christopher | Dibona | Open Source Programs Manager | Google |
| Estelle | Dodson | | NASA Ames - Lm |
| Aaron | Duley | | NASA |
| Casey | Dunn | | Czwx LLC |
| Greg | Elin | | Federal Communications Commission |
| Stuart | Engelhardt | Software Developer | NASA JSC - Tietronix |
| James | Farmer | Director | Sigma Systems Inc. |
| Pascal | Finette | Director Of Mozilla Labs | Mozilla Corporation |
| Jane | Finette | Director Of Global User Engagement | Mozilla Corporation |
| Elizabeth | Foughty | It Project Coordinator | MCT Inc, NASA Arc |
| Jennifer | Fung | Principal Se | Sgi |
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| Bryan | Geurts | Chief Patent Counsel | NASA GSFC |
| Richard | Golding | | NASA Ames - Ktsi |
| Lester | Gong | | |

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| Lon | Gowen | Associate Director For Innovation | NASA GSFC |
| Justin | Gray | Aerospace Engineer | NASA Glenn Research Center |
| Saugata | Guha | Senior Software Engineer | Uarc/NASA |
| Guru | Guruswamy | Sr. Scientist | NASA Advanced Supercomputing Division |
| Matthew | Hancher | Senior Software Engineer, Special Projects | Google |
| Gunnar | Hellekson | Chief Technology Strategist For Us Public Sector G | Red Hat |
| Sarah | Hobart | Dep. Mission Systems Manager | NASA |
| Patrick | Hogan | World Wind Project Manager | NASA Ames |
| Julie | Holland | Partnership Development Manager | Dryden Ipp Office |
| Jamie | Hoover | | Yummly / Ninja Ui |
| Paula | Hunter | Executive Director | Outercurve Foundation |
| Phillip | Hyett | COO | GitHub |
| Jeetendra | Jagasia | Architect | Microsoft Corporation |
| Jean-Marie | Jean-Pierre | Code 750 End-User Services Manager | NASA GSFC |
| John | Kelly | Oce, Program Executive For Software Engineering | NASA HQ |
| Jim | Kerevala | Coo | Ubm |
| Taemin | Kim | NASA Postdoctoral Fellow | NASA Ames Research Center |
| Hyeongwoo | Kim | Visiting Researcher | NASA Ames Research Center |
| Christopher | Koenig | Software Engineer | Microsoft Corp. |
| Amanda | Koenig | Attorney-Advisor, Commercial And IP Law | NASA HQ |
| Paul | Kolano | Software Engineer, Advanced Supercomputing Divisio | NASA Ames - Computer Sciences Corporation |
| Eric | Kutner | Consultant | Erdg |
| Rick | Kwan | Computer Scientist | American Academy Of Aeronautics |
| Tsengdar | Lee | (Acting) CTO for IT | NASA |
| David | Lees | Senior Project Scientist | NASA Ames/Cmu Silicon Valley |

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| Martin | Levy | Director, Ipv6 Strategy | Hurricane Electric |
| Brian | Lewis | | NASA Ames |
| Aaron | Lippold | | |
| Ali | Llewellyn | NASA Open Government Initiative | NASA JSC - Valador |
| Remy | Loubradou | Student Computer Science | Supinfo |
| Mike | Lundy | | NASA Ames - Sgt Inc. |
| Mike | Lundy | | |
| Rachel | Lunsford | Special Assistant To The Chief Technology Officer | Department Of Veterans Affairs |
| Jeff | Luszcz | Founder | Palamida, Inc. |
| Will | Marshall | NASA Ames - Affiliate | |
| Guy | Martin | Community Manager At Forge.Mil | Collabnet, Inc. |
| Chris | Mattmann | | NASA JPL - Affiliate |
| Paul | Mcmillan | Cto | Zero Coordinate |
| Alfred | Mecum | Technology Manager | GSFC Ippo |
| Cristina | Milesi | Research Scientist | Csumb/NASA Ames |
| Eugene | Miya | | NASA Ames |
| Patrick | Moran | Computer Scientist, Advanced Supercomputing Divisi | NASA Ames |
| Scott | Murman | Code Tnf | NASA Ames |
| Gwyn | Murray | Founder And Principal | Matau Legal Group |
| James | Neushul | Amphibious Communication Officer | Us Third Fleet |
| Ray | O'Brien | CTO for IT | NASA Ames |
| Ryan | Ozimek | President | Joomla (Open Source Matters) |
| Muni | P | Technical Architect | Opal Soft |
| Rob Padilla | Padilla | Chief Patent Counsel | NASA Ames |
| Steve | Parker | V.P. Technology Research And Projects | Energy Sector Security Consortium, Inc. (Energysec) |

| | | | |
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| Alfredo Jimenez | Ronssin | | |
| Ellis | Rubio | | Ellis Engineering Solutions Ltd. |
| Lamont | Ruley | Supervisory Computer Engineer | NASA/GSFC |
| Kyle | Ryan | Electrical Engineer | Orbital Sciences/ Nsroc Ii |
| Stephen | Ryan | | |
| Padma | S | | |
| Alvaro | Salamanca | Sales Rep | Nexsys Latinoamerica |
| John | Samson | | Honeywell Aerospace, Defense & Space |
| Anthony | Santopietro | Software Integration Team Lead | Chugach Federal Solutions, Inc / NASA CASI |
| Virat | Sarin | | |
| Kayla | Sather | Environmental Intern | Jq |
| Godfrey | Sauti | Research Scientist | National Institute Of Aerospace |
| Craig | Sayler | Sr. Unix-Linux, High Performance Cluster Engineer | Dfrc NASA Dryden Fligh Research Center |
| Edward | Scharff | Research Engineer | Sgt |
| John | Schipper | Principle Systems Engineer | L-3 -NASA Ivv Facility |
| Weston | Schmidt | Software / Hardware Architect | Open Roadster |

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|---------|-------------------|-----------------------------------|---|
| Otto | Schnarr | Embedded Systems Developer | NASA Dryden |
| John | Schnase | Senior Computer Scientist | NASA Goddard Space Flight Center |
| Bruce | Schubert | | Emxsys |
| Kathryn | Scoggin | | NASA |
| Peter | Scott | Analyst | JPL |
| Dave | Scott | Computer Engineer | MSFC / Eo50 - Hosc Ground Systems Development & Integration |
| Anthony | Sellers | | |
| Chad | Sells | I.T. System Analyst | Laane |
| Timothy | Sesow | Chief Technical Officer | Open Source Storage, Inc. |
| Aarshey | Shah | Student | Cept University |
| Ehsan | Shahrokhi | IT | |
| Warren | Shearer | Senior Network Administrator | Dfrc |
| Salman | Sheikh | Ee | NASA/GSFC |
| Jack | Sheldon | Sr. Systems Engineer | Arcata Associates |
| Chris | Shenton | Consultant, Agent Provocateur | NASA HQ |
| Sandeep | Shetye | Information Architect | NASA |
| Fu-Tai | Shih | Software Engineer | Sgt/Ti |
| David | Siedband | CEO | Zentraal, Inc. |
| Jacob | Silvia | Software Configuration Management | J&P Technologies |
| Luca | Simoncelli | | |
| M. | Simos | | |
| Amalie | Sinclair | Organiser | Space For Progress |
| Jerome | Slangen | | |
| Laura | Sleasman | Project Manager | Dell Inc. |
| Ifan | Slv | | |
| Michael | Smith | Consultant | Booz Allen Hamilton |
| Joe | Smith | Enterprise Architect | Information Dynamics |

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|----------|-------------------|---------------------------------------|---|
| Tristan | Smith | Program Lead | Mission Critical Technologies, Inc. |
| Jeffrey | Smith | Optical Engineer | NASA Goddard Space Flight Ctr. |
| Dan | Smith | Software Division - New Business Lead | NASA/GSFC |
| Kelly | Smith | Aerospace Engineer | NASA/Jsc |
| Ernest | Smith | Project Integration Manager | Usra/Ames/Ti |
| Kraig | Smith | It Manager | Washoe County Technical Services |
| Chaise | Smith | | |
| Paul | Snow | Rules Management Chief Architect | Sourcepulse |
| Sunil | Soprey | Ceo/Developer/Geek | Derigo Technology Inc |
| Jared | Sperli | Co-Founder | Itsoftware |
| John | Sprague | End User Services Exec | NASA\OCIO |
| Amy | Stapleton | Neacc Management - It Supv | NASA / Msfc |
| Gerald | Steeaman | It Specialist For Cm | NASA Sti Program Office |
| Sheila | Steffenson | | Esri |
| Haley | Stephenson | Writer | Valador/ NASA Appel |
| Joseph | Steurer | Student | Missouri University Of Science And Technology |
| Martin | Still | Kepler Guest Observer Office Director | NASA Ames |
| Ted | Stodgell | Engineer | NASA |
| Kim | Stroeger | Scrum Master | Nokia |
| Lynnette | Stroeger | Developer | Trm |
| Bala | Sundarraaj | Chief Consultant | Podhigai Open Source Services |
| Patrick | Svenburg | Director, Platform Strategy | Microsoft |
| Thomas | Swanson | Server Administrator | Abacus Technology |
| Keith | Swanson | Computer Scientist | NASA Ames Research Center |
| Eric | Sweigard | Program Manager | Innovative Defense Technologies (Idt) |
| Alasdair | Swenson | Digital Creative | The Prototype Committee |

| | | | |
|-------------|------------------------|--|---|
| Brian | Takemoto | Senior Technology Systems Developer | Washoe County Technical Services |
| Eric | Tatara | Software Engineer | Argonne National Lab |
| Graeme | Taylor | Undergraduate Student | University Of Southampton |
| Harbles | Theskepticalcat | | |
| Peter | Thompson | Senior Systems Engineer | Sgt Inc/NASA NPP Msi&T |
| Grace B | Thomson | Owner/Ceo | Organic Software & Computers |
| Ed | Thomson | Software Engineer | Pratt & Whitney Rocketdyne |
| Marc | Tiar | Librarian li | Washoe County Library System |
| Beth | Todd | Technology Systems Developer li | Washoe County Technical Services |
| Igor | Toledo | | |
| Mark | Tomizawa | | Humankindx (An Mtv For Democracy Where The Audience Is The Star; In Beta) |
| Carlos | Torrez | Bussiness Manager | NASA |
| Joel | Tosi | | |
| Tom | Trainer | | Gluster |
| Daniel | Trebbien | | |
| Shui-Ay | Tseng | Database Engineer Lead | Computer Science Corp. |
| Tina | Tsui | Computer Engineer | NASA/GSFC |
| Christopher | Tucker | I.T. Director | Laane |
| Nathan | Uitenbroek | Orion Sw Architect | L3/NASA |
| Luigi | Usai | Hacker | |
| Andreea | Vaculisteanu | Event Coordinator | Unawe Romania |
| Clementine | Valayer | Senior Consultant | Trasys Sa (On A Contract For Esa) |
| Michele | Vallisneri | Research Scientist | JPL |
| Anoop | Valluthadam | Student | Vmkv |
| Michael | Van Chau | Director Of Cyber Strategy & Development | Mei Technologies, Inc. |
| Alexander | Van Dijk | Web Lead Flight Opportunities | Mct @ NASA Ames Research Center |

| | | Program | |
|----------|---------------------|------------------------------------|---------------------------|
| Jaap | Van Doorn | Consultant | Capgemini Nederland |
| Jay | Vasa | Cto | Applios, Inc. |
| Rishi | Verma | Software Engineer | NASA Jet Propulsion Lab |
| Jon | Verville | Engineering Collaboration Lead | NASA GSFC |
| Huy | Vo | Engineer | LMSSC @ Maf |
| Stephen | Voels | Sr. Engineer | SAIC |
| Mary | Volz-Peacock | Program Manager Open Government | Opm |
| Jerry | Wagner | ISS Trajectory Operations Officer | United Space Alliance |
| Eric | Wahl | | |
| Jeff | Walter | Deputy Project Manager - Technical | NASA GSFC |
| David | Walters | SSC CTO | |
| Andrea | Warmbier | Patent Attorney | NASA Langley |
| Keith | Watson | Research Engineer | Cerias, Purdue University |
| Phil | Webster | Chief | NASA GSFC Cisto |
| Lee | Wedgeworth | Engineer | Wyle/Sd24 |
| Jon | Welch | It Consultant | Ae Wood And Associates |
| Heather | Wellington | | Gluster |
| R | Wertenberg | | |
| Jason | Wickard | Manager, Software Development | |
| Michael | Williams | | |
| Samuel | Wong | | |
| Michael | Worsham | Systems Support Coordinator | Src/Spawar |
| Michael | Wright | Deputy Branch Chief | NASA/Msfc/Es12 |
| Aaron | Wright | G.I.S. Student | San Antonio College |
| Lawrence | Wu | | |
| Patti | Yamakido | Account Exec | Sgi |

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|----------|-------------------|-------------------------------|------------------|
| Masaki | Yamaya | Consultant | Just Skill, Inc. |
| Gil | Yehuda | Director Of Open Source | Yahoo! Inc. |
| Ku Chung | Ying | Computer Maintenance Engineer | |
| Hans | Zaunere | Managing Member | New York Php |
| William | Ziebell | Senior Software Engineer | Mct |
| Angela | Ziegenhorn | | |

Press

| Name | | Title | Organization |
|--------|----------------------|---|--|
| Luke | Fretwell | Founder, Media Correspondent | Govfresh |
| Debbie | Gage | Reporter | Dow Jones Venturewire |
| Sarah | Granger | Founder | Center For Technology, Media & Society |
| Alex | Howard | Government 2.0 Washington Correspondent | O'Reilly Media, Inc. |
| Cade | Metz | | |
| Chris | Preimesberger | Senior Writer | Eweek |
| Mike | Wall | Reporter | Space.Com |

Staff

| Name | | Title | Organization |
|----------|---------------|--------------------------------------|-----------------------------------|
| Wayne | Burke | Executive Director | Open Forum Foundation |
| Lucas | Cioffi | | Onlinetownhalls Inc. |
| Jessica | Culler | Public Affairs Officer | NASA Ames Deltha-Critique |
| Gretchen | Curtis | CTO-IT Communications Manager | NASA Ames Dell Federal Services |
| Pat | Elson | | NASA Ames Dell Federal Services |
| William | Eshagh | | |
| Terry | Fong | Director, Intelligent Robotics Group | NASA Ames |
| Rita | Galan | | NASA Ames Dell Federal Services |

| | | | |
|----------|-----------------------|--------------------------------------|-----------------------------------|
| Chris | Gerty | Open Government Analyst | NASA HQ |
| Scott | Goodwin | CIO For Space Operations | NASA HQ |
| Gabriel | Hurley-Ramstad | Senior Web Developer | NASA Ames Dell Federal Services |
| Cristina | LeClerc | CTO-IT Project Coordinator | NASA Ames Dell Federal Services |
| Kim | Lembo | Technology Partnership Manager | NASA Ames Lockheed Martin |
| Nick | Skytland | Director, Open Government Initiative | NASA HQ |

Agenda and Schedule

Day 1 - March 29, 2011

| | | |
|---------|---|---|
| 8:00am | Registration Opens | |
| | <i>Main Room</i> | <i>Breakout Rooms</i> |
| 9:00am | Dr. Tsengdar Lee, NASA Introduction and Framing | |
| 9:15am | Wayne Burke, Open Forum Foundation Overview, Goals, and Format of the Summit | |
| 9:30am | David Wheeler, Institute for Defense Analysis/DoD What is possible? Key differences between open source development inside and outside federal government | Breakout Session #1 |
| 10:00am | Terry Fong, NASA ARC Open Source at NASA | Breakout Session #2 |
| 10:30am | Patrick Hogan, NASA World Wind, Implementing an Open Source Project at NASA | Breakout Session #3 |
| 11:00am | | Breakout Session #4 |
| 12:00pm | Lunch | |
| 1:15pm | Wayne Burke, Open Forum Foundation Welcome back, afternoon goals. | |
| 1:30pm | Richard Bullington-McGuire & Guy Martin DoD's forge.mil: Collaborating on Software Development within DoD | Breakout Session #1 Develop solutions to Communication and publicizing NASA's open source efforts |
| 2:00pm | | Breakout Session #2 Licensing |
| 2:30pm | | Breakout Session #3 How deeply can the community be involved? |
| 3:00pm | Bob Sutor, IBM The Value of Open Source | Breakout Session #1 Development models & ongoing support |
| 3:30pm | Chris Mattmann, NASA JPL Open Source at NASA | Breakout Session #2 Government restrictions, e.g. ITAR |
| 4:00pm | | Breakout Session #3 Limitations on contributing to external open source projects |

4:35pm Wayne Burke, Open Forum Foundation
Summary of Day 1, Overview of Day 2

4:40pm Ray O'Brien, NASA
Moving Forward

Day 2 - March 30, 2011

| | <i>Main Room</i> | <i>Breakout Rooms</i> |
|---------|--|---|
| 9:00am | James Williams, NASA Welcome to Day Two | |
| 9:15am | Wayne Burke, Open Forum Foundation Overview, Goals, and Format of the Summit | |
| 9:30am | Group Discussion Review the Issue List, what's missing? | |
| 10:00am | Chris Wanstrath, GitHub GitHub | |
| 10:30am | Chris DiBona, Google Google, NASA, and Open Source | |
| 11:00am | | Breakout Session #1 |
| 12:00pm | Lunch | |
| 1:15pm | Wayne Burke, Open Forum Foundation Welcome back, afternoon goals. | |
| 1:30pm | Brian Stevens, RedHat | |
| 2:00pm | | Breakout Session #2 Open discussions that may revisit any topic from the rest of the event or cover entirely new topics that have been missed thus far. |
| 3:00pm | Pascal Finette The Mozilla example: What's happening with open source in industry? | |
| 3:30pm | Linda Cureton, NASA Thank you, Wrap up | |
| 3:40pm | | Breakout Session #3 |
| 4:30pm | Wayne Burke, Open Forum Foundation Conclusion | |

Keynote Presentations

Listed in Order of Appearance

David Wheeler, Institute for Defense Analysis/DoD

What is possible? Key differences between open source development inside and outside federal government

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-DavidWheeler-DOD.pdf>

Terry Fong, NASA ARC

Open Source at NASA

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-TerryFong-Ames.pdf>

Patrick Hogan, NASA World Wind

Implementing an Open Source Project at NASA

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-PatrickHogan-WorldWind.pdf>

Richard Bullington-McGuire & Guy Martin

DoD's forge.mil: Collaborating on Software Development within DoD

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-RichardBullingtonMcGuire-GuyMartin-ForgeMil.pdf>

Bob Sutor, IBM

The Value of Open Source

<http://open.NASA.gov/wp-content/uploads/2011/05/sutor-NASA-opensource-2011.pdf>

Chris Mattmann, NASA JPL

Open Source at NASA

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-ChrisMattmann-OpenSourceAtNASA.pdf>

Chris Wanstrath, GitHub

GitHub

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-ChrisWanstrath-GitHub.pdf>

Chris DiBona, Google

Google, NASA, and Open Source

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-ChrisDiBona-Google.pdf>

Brian Stevens, RedHat

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-BrianStevens-RedHat.pdf>

Pascal Finette

The Mozilla example: What's happening with open source in industry?

<http://open.NASA.gov/wp-content/uploads/2011/05/OSS-PascalFinette-Mozilla.pdf>

Excerpts from Ustream Chat

The follow is an excerpt of the Ustream chat from the Summit. Relevant sections of conversation have been included, while unrelated or logistical conversation has been removed.

Tuesday

| Time | Username | Comment |
|-------|----------|---|
| 11:51 | user16 | Does the phrase "works for hire" not apply to contractors making software for the government? |
| 11:51 | User10 | Correct, does NOT apply. |
| 11:52 | user17 | So the contractor firm 'owns' the software the Gov is paying for? |
| 11:52 | user30 | If only gnu had taken that advice prior to unleashing gpl3 |
| 11:52 | user24 | depends on the contracting agreement |
| 11:52 | user24 | They can go either way |
| 11:53 | user16 | Not only is license proliferation a problem, but satisfying all of the requirements of subcomponents. |
| 11:54 | user24 | Yeah. the license is pretty horrible. The lawyers who wrote it clearly didn't spend any time studying other similar types of licenses |
| 11:54 | user30 | wow, that's really bad |
| 11:54 | User10 | The government's "unlimited rights" specifically do NOT allow distribution to the public. Yes, the contractor generally can control the software. |
| 11:54 | user23 | Nice licence table here: http://fedoraproject.org/wiki/Licensing:Main#GPL_Compatibility_Matrix |
| 11:55 | User10 | For the contractor to not control the software, we generally need a deviation to the FAR. |
| 11:55 | user30 | @User10: so a contractor could be the "leader" of an OSS project, thereby absolving NASA of its crazy NOSA and liability requirements |
| 11:55 | User10 | No. |
| 11:55 | user30 | *absolving |
| 11:55 | user16 | Should that change? If I work as an independent contractor, then I automatically assign my rights to software that I produce to the company. |
| 11:56 | user16 | Actually, when I work as a bonified employee as well. |
| 11:56 | user24 | user16 it depends on your state, and your employment agreement. Usually. |
| 11:56 | User12 | bona fide? |
| 11:57 | user16 | *bona fide. Yes sorry. |
| 11:57 | user30 | If you want to retain ownership of your own code, or write OSS on the clock, make sure it is in your contract. |
| 11:57 | user24 | NASA doesn't effectively monetize it's patents |
| 11:57 | user24 | so that argument is bunk |
| 11:57 | User12 | bonified employees might be people who retired (and died) in place. :-} |
| 11:58 | user22 | hehe |
| 11:58 | user16 | Does NASA hold patents? |
| 11:58 | User10 | The default is US General Release so that taxpayers do have access to NASA software, but foreign persons do NIT get benefit paid for by US taxpayers except in certain situations. |

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| 11:58 | <i>user24</i> | he's absolutely right about all this. I hope it isn't news to msot of the people in this room |
| 11:58 | <i>user16</i> | I know that other branches do. |
| 11:58 | <i>user17</i> | NASA can make money off patents? I though we were not allowed by Congress to take in funds not allocated by Congress?? |
| 11:58 | <i>user24</i> | well, if a contractor produces something patentable, that patent probably goes to NASA |
| 11:59 | <i>user24</i> | (makes not sense to do anything else) |
| 11:59 | <i>User10</i> | BASA does get patent royalties and the developers can also get a split of the funds. The patent goes to the contractor. |
| 11:59 | <i>User4</i> | @user17, yes, our group has numerous patents. The individual doesn't make money, or even the group though. |
| 11:59 | <i>user17</i> | That is probably true but we cannot take money for it, I think? |
| 11:59 | <i>user24</i> | but then that patent is used as an excuse not to release patent encumbered software |
| 11:59 | <i>user26</i> | I believe patent-able products share the patent between NASA and the contractor (if appl) |
| 12:00 | <i>User10</i> | Shared roylaties is correct. |
| 12:00 | <i>User10</i> | There are very few NASA codes that have ever been patented so it is NOT used a tool to prevent release to others. |
| 12:01 | <i>user24</i> | But if the contractor has the patent, it's hard for NASA to release the code |
| 12:01 | <i>User10</i> | Correct, if others hold the patent NASA can only release for government purposes. |
| 12:02 | <i>user24</i> | which is why patents related to software developed for NASA should revert to NASA ownership |
| 12:02 | <i>user26</i> | if NASA and a contractor "share" a patent, can NASA "buy out" the contractors interest? |
| 12:03 | <i>user24</i> | you'd never be able to justify the funding |
| 12:03 | <i>user17</i> | Could he clarify how NASA can make money or take in funds for NASA patents? |
| 12:03 | <i>user22</i> | User1: What's the best way for Open Source projects to communicate with Government agencies? |
| 12:03 | <i>user16</i> | https://secure.wikimedia.org/wikipedia/en/wiki/Copyright_status_of_work_by_the_U.S._government |
| 12:04 | <i>User10</i> | Public Domain is a legal term and government works, while not copyrightable, are patentable so they are NOT automatically public domain. |
| 12:05 | <i>User11</i> | everything he mentioned is interesting- but wading through it requires a lawyer. NASA needs a a no-nonsense and easy-to-comprehend policy that invites developers to make the decision easy |
| 12:05 | <i>user17</i> | good idea! |
| 12:05 | <i>user21</i> | great question |
| 12:05 | <i>user24</i> | User11: hopefully that's what will come out of this |
| 12:05 | <i>user17</i> | here here User11! |
| 12:05 | <i>User11</i> | excellent |
| 12:06 | <i>user16</i> | Yes. It's useful when OSS licenses have FAQ pages. |

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| 12:06 | <i>user16</i> | A similar FAQ can be created for the legal issues involved with OSS at NASA. |
| 12:07 | <i>User8</i> | Development groups should not have to become legal experts to get the benefits of collaboration and more eyes on the code. |
| 12:08 | <i>user24</i> | I'd love to see software contracted for NASA released by default under BSD or GPL unless otherwise necessary |
| 12:08 | <i>user24</i> | make it part of the agreement |
| 12:08 | <i>User8</i> | @user24: +1 |
| 12:08 | <i>User10</i> | They don't need to become lawyers. Every Center has a Software Release Authority that answer any questions about this subject. |
| 12:09 | <i>user30-1</i> | man that would be wonderful. it's so frustrating to manage a proprietary SW project with multiple contractors... everybody has to sign NDA's etc |
| 12:09 | <i>user24</i> | yeah. Hell, have a requirement that it be released as it's developed. Solve that "never done" problem he was talking about |
| 12:10 | <i>user24</i> | also actually get an eye on what's really being done, as compared to what the contractor wants you to think is done |
| 12:10 | <i>user30-1</i> | then you have the problem of a contractor claiming copyright over some trivial piece of software, and then they turn around and sell their "secret" modification to the government at ridiculous prices |
| 12:10 | <i>User6</i> | And avoid the possibility that a software vendor can use it to milk the contract. |
| 12:10 | <i>user24</i> | woot! continious release process! |
| 12:10 | <i>user24</i> | that's what NASA needs as default |
| 12:11 | <i>user24</i> | ted: I'm sure NASAs clever lawyers could figure out how to discourage that. |
| 12:11 | <i>user21</i> | thats very true! |
| 12:13 | <i>user24</i> | This is neat software. I'll need to check it out |
| 12:13 | <i>user24</i> | but did it start as an OSS project? |
| 12:13 | <i>user24</i> | or a NASA project? |
| 12:14 | <i>user20</i> | This is the Software Release site for NASA Goddard: http://ipp.gsfc.nasa.gov/SRA/Release-process.htm |
| 12:14 | <i>User11</i> | put it on apps.gov |
| 12:15 | <i>user30-1</i> | speaking of software release sites... does anyone know what happened to CosmosCode? |
| 12:15 | <i>User10</i> | Do you mean COSMIC? |
| 12:15 | <i>user24</i> | saw the comment about that in the uservice stuff. |
| 12:15 | <i>user24</i> | I'm curious as well |
| 12:15 | <i>user30-1</i> | it was an ARC project. part of their Co-Lab |
| 12:15 | <i>user30-1</i> | sort of NASA's version of sourceforge |
| 12:16 | <i>User10</i> | The software was transferred to the National Technology Transfer Center in West Virginia. The codes are available. |
| 12:16 | <i>user30-1</i> | umm, they were using svn and drupal, etc. nothing real earth shattering |
| 12:16 | <i>User3</i> | @User10: can we use LGPL instead of NOSA? |
| 12:16 | <i>user24</i> | The codes aren't really relevant. It's the people working to make it happen |
| 12:16 | <i>user30-1</i> | the interesting part was that it was a NASA hosted service |

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| 12:17 | User10 | It depends on lawyer approval from your Center but we are currently looking at allowing other licenses. |
| 12:17 | user20 | @Stuart - is this IV&V facility? |
| 12:17 | user26 | isn't the use of and collaboration on open source initiatives covered under the Space Act Agreement? |
| 12:18 | user24 | <sigh> it's really unfortunate that robotics/flight code is generally not going to be released |
| 12:18 | User3 | @User10: I'm at LaRC. Can I use LGPL? How do I ask for approval? |
| 12:18 | user30-1 | basically, if your center won't let you host a project on BerliOS or GitHub, then CosmosCode at NASA/ARC would have been a very good "Safe" alternative |
| 12:22 | user24 | "software is never finished, so don't write policies that depend on that" seems to be a solid takeaway so far |
| 12:23 | user30-1 | at every bullet point i'm thinking "YES! YES!" |
| 12:23 | user24 | Clone this guy and have him as an internal open source missionary |
| 12:24 | User11 | ouch- a week for filling out forms? |
| 12:24 | User10 | No, not a week. Other people experienced less than hour. |
| 12:24 | user24 | so once it's approved for release, does this whole process have to happen every time they push a bugfix? |
| 12:25 | User10 | No, bugfixes are exempt from review. |
| 12:25 | user30-1 | releasing OSS requires lawyers? i didn't know it took a lawyer to type "svn commit" |
| 12:25 | user24 | what about minor feature improvements? |
| 12:25 | User7 | I like Terry's perspective on this - very helpful information to see 2-5 months or more for releases |
| 12:25 | user24 | I'm wondering about the issues related to having a public source repo for a NASA project (as opposed to NASA working with some other project) |
| 12:25 | user19 | user30-1: releasing/distributing s/w is when the licenses *kick in* |
| 12:25 | User10 | His week experience depends on whether one has complied with NPD7150 (OCE rules) during development. We release many codes in under a week total. |
| 12:26 | user30-1 | mathematically, there's no difference between a bugfix vs. any other change to software |
| 12:26 | user30-1 | therefore, ALL releases could be interpreted as "bugfixes" |
| 12:26 | User11 | @user24 i agree, clone him and have him evangelize. he is on point |
| 12:27 | User10 | Minor upgrades CAN be exempted depending on what it represents in the big picture. |
| 12:27 | user20 | CIO/OCE should give Terry the latitude to evangelize on these issues |
| 12:27 | user19 | not true.... licenses are all based on how the s/w is distributed. If using internally, you are not releasing the code as a external distribution |
| 12:27 | User10 | No, bugfixes are determined by the Software Release Authority to be exempt or not. Not the devlopers call because we know the game. |
| 12:27 | User6 | @ted: We're a long way from an information-theoretic basis for copyright. Mathematics are unlikely to be considered. |
| 12:27 | user30-1 | alas :p |
| 12:28 | user30-1 | if all initial releases were the empty set, then you'd only have to go |

| | | |
|-------|----------|---|
| | | through one trivial approval process, once, ever. |
| 12:28 | User6 | And everything would be a derived work of that set. |
| 12:29 | User1 | Questions for Fong? |
| 12:30 | user29 | They should do a Lean Six Sigma event to look at the open source process to get the software approved more quickly. |
| 12:31 | user19 | People need to recall that crowd sourcing != open source... the differences are subtle, but important |
| 12:33 | user26 | @User1: Can web developers use open APIs (e.g., GoogleMaps API, etc.) simply under the Space Act Agreement, or is additional approval required? |
| 12:34 | user30-1 | @user26: why would they be restricted in the first place? are developers restricted from using other open standards? |
| 12:34 | user26 | @User1: not sure, hence the question. |

Wednesday

| Time | Username | Comment |
|-------|----------|---|
| 11:41 | user16 | Open source by default. That's an interesting idea. |
| 11:41 | User2 | Is there any NASA lawyer attending or participating in this event? |
| 11:44 | user15 | We tried to have every affected group represented, and yes, the law component will be critical in any solutions we implement - so we need them involved in the discussion from the beginning. |
| 11:44 | User2 | Encouraging NASA scientists and engineers, and LAWYERS to participate in OSS development |
| 11:49 | user18 | and webmasters |
| 11:50 | user22 | User5: are you interested in using open source for your work? |
| 11:51 | User5 | @user22...unfortunately, that's a discussion that has to happen at a much higher level than where I sit. |
| 11:52 | User5 | We are constrained with the tools, gear, manpower and tasking given to us. |
| 11:52 | User2 | cute answer |
| 11:52 | User5 | At this time, the tools we are given work and are similar across the Agency. |
| 11:53 | User5 | Open Source would be a valuable tool, but one question is how to distribute across the Agency, spanning 11 Centers...and a country! |
| 11:58 | user22 | Basically I am working to get open source into broadcasting with 2 major networks in the US and lots in Europe |
| 12:00 | user22 | what's quite interesting is that they are interested in replacing mission critical parts of their broadcast infrastructure with open source, not just the backoffice stuff |
| 12:19 | user16 | Maybe Chris can talk about whether open source projects should use central VCS (like Subversion) or a distributed VCS (like git, Bazaar, Mercurial, ...) |
| 12:21 | User11 | need somebody to translate what was said on day 1 (legal stuff) w/ how NASA can use GitHub. exciting stuff |
| 12:21 | user28 | @User11 +1. I'd love to hear NASA Legal make a pronouncement on our |

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| | | ability to use GitHub et al |
| 12:24 | User11 | NASA needs to ask: how can we afford NOT to use this |
| 12:26 | user19 | Wonder how many of those contributions were *useful* |
| 12:27 | User11 | Gov't version? |
| 12:27 | user16 | Please ask Chris about centralized version control systems (VCSs) versus distributed VCSs. |
| 12:41 | user16 | *project |
| 12:41 | user19 | cool! |
| 12:42 | user19 | Looking forward to svn 1.7 ! |
| 12:42 | user16 | Yes! Me too. |
| 12:42 | user19 | It IS quite slow. git is fast |
| 12:42 | user16 | svnsync --source-prop-encoding |
| 12:42 | user16 | That's my little niche. |
| 12:42 | user19 | In fact, I use git-svn on most the the apache projects I hack |
| 12:42 | user16 | True. git-svn works pretty well. |
| 12:43 | user16 | I *love* that ASF has official git mirrors, btw! |
| 12:43 | user16 | https://github.com/apache |
| 12:43 | user19 | yep... we're trying to also see the feasibility of "real" git as well... |
| 12:43 | user16 | Oh, okay. |
| 12:45 | user16 | 900 projects. I wonder if that includes projects by Googlers. |
| 12:45 | user16 | not just official Google projects |
| 12:45 | user27 | yeah, don't they get like one day a week to work on private stuff or something? |
| 12:45 | user16 | in their 20% time |
| 12:52 | User9 | That's an interesting discussion, regarding OSS from government agencies |
| 12:53 | User9 | considering NASA is not empowered to copyright anything, can they actually enforce any sort of FOSS license? |
| 12:53 | User9 | Is there an appeal process regarding ITAR'ed information? |
| 12:54 | user19 | I wonder why NASA employee's can't copyright stuff done as part of their job, but they *can* patent it... |
| 12:55 | user16 | There was some dicussion about that on day 1. |
| 12:55 | user16 | David Wheeler discussed it. |
| 12:56 | User11 | c'mon |
| 12:57 | User1 | and there's a liveblog here: http://gov20.govfresh.com/2011-NASA-open-source-summit-convenes-innovators-and-technologists/ |
| 12:57 | user16 | Why does Google commonly use the Apache License? |
| 12:58 | user14 | @user16: he mentioned this earlier, along with others. BTW, was that cdibena@google.com? |
| 12:59 | user16 | Did he discuss dual-licensing? |
| 12:59 | User1 | discussing licensing now |
| 12:59 | user14 | @user16: nope. @AH: nope, thanks. |
| 12:59 | User5 | He also provided a link - http://code.google.com/opensource |
| 1:00 | User5 | It was on his final graphic |

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| 1:01 | User1 | asked Apache & ITAR question. thank you |
| 1:03 | user13 | have you looked at how long unmodified code can survive - since licenses may impacts contributions/updates |
| 1:04 | user13 | rate of code rot, how long before that 2B lines of code becomes useless or stops working |
| 1:05 | user16 | That was a great question from the audience. |
| 1:06 | user16 | Which open source license does Google prefer? |
| 1:06 | user14 | Apache2 |
| 1:07 | user14 | I had this question that I didn't get out in time: Can "useless/rotting/unattended" code be turned into open-source, by default? Something like the FOIA after a certain time? |
| 1:13 | user13 | Thats a good question for the lawyers. Code is really a living thing, if its sits around too long, it becomes useless or is replaced with something else. |
| 1:15 | user13 | Any value that the code had is often lost - and that is a bad thing, because the value returned to the taxpayer is diminished. |
| 1:16 | User10 | How does that diminish value to taxpayers? |
| 1:17 | User10 | The default release level for all NASA code without export/programmatic restriction is currently US General release which allows taxpayers to request the codes. |
| 1:21 | user13 | The assertion is that license type impacts community participation, and community participation determines how long and how much value certain code may have (not all). |
| 1:22 | user13 | there may also be code thats never officially released because of the level of effort to do so. |
| 1:23 | User10 | Bob, I do understand those points. |
| 1:24 | User10 | However, widely disseminated codes when adapted by Airbus or Embraer also serve to diminish taxpayer value because they aid foreign competition. |
| 1:27 | user13 | ITAR is an important but orthogonal issue. |
| 1:32 | user13 | Clearly - we don't want to run afoul of ITAR or sensitive engineering data. But there is a large class of code that can and should be pushed to anyone that can use it. |
| 1:33 | User10 | There is truth in that Bob. Agency policy limits us to releasing code that is for health, human safety, quality of life at this point. |
| 3:43 | user13 | FYI: The initial work for large SSI was done at NASA Ames. We currently have a 2048 CPU LINUX system. |
| 3:44 | User9 | <3 XFS |
| 3:51 | user16 | libguestfs? |
| 3:51 | user13 | question: clearly RH has benefited from OSS. How does RH view debranded derivatives like centos or oracle? positive/negative/neutral. |
| 3:52 | user19 | user16: http://libguestfs.org/ |
| 3:52 | user19 | v. cool tech |
| 3:52 | user16 | Nice |
| 3:54 | User1 | Any questions from the Internet for the RedHat CTO? |

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| 3:54 | user13 | question: clearly RH has benefited from OSS. How does RH view debranded derivatives like centos or oracle? positive/negative/neutral. |
| 3:54 | User1 | thanks, Bob. |
| 3:55 | user25 | Great answer. |
| 3:56 | user16 | What open source licenses does RedHat recommend for new projects? |
| 5:22 | User1 | Interesting to see the new parts, comparing to Lilly's preso from 3 years ago http://www.slideshare.net/johnolilly/7-lessons-from-mozilla-presentation |
| 5:23 | user16 | Some questions for Pascal: |
| 5:23 | user16 | In what ways does Mozilla need to improve, to increase the effectiveness of its open source development efforts? |
| 5:23 | user16 | Do you believe that Mozilla's focus on web technology helps Mozilla's efforts to maintain active open source projects? |
| 5:23 | user16 | Do you think that a single organization can maintain active communities of developers of software that cover a wider range of purposes? |
| 5:24 | user16 | https://github.com/mozilla |
| 5:26 | User1 | thx. asked |
| 5:27 | user16 | Being able to *build* a piece of software is crucial. That's a good answer. |

UserVoice Submissions

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| 85 Votes | Licensing |
| | This may include many issues, including the fact that NOSA (NASA Open Source Agreement) deters outsiders from using NASA produced software. |
| Comments: | |
| March 28, 2011 1:45 PM | Lot of votes here, and this is the key topic. But I'm curious what details of the NASA Open Source Agreement, http://www.opensource.org/licenses/NASA1.3 do outsiders find limiting? |
| March 28, 2011 1:59 PM | Agreed. the NOSA license is unnecessarily complicated. NASA doesn't even need its own vanity license when there are so many appropriate choices already. Per the National Aeronautics and Space Act of 1958, anything other than public domain is questionable. Where "fancy" licenses come in handy are twofold: 1) For respecting the IP created through joint projects between NASA and its private contractors. 2) For protecting the US Government's own authorship and copyright where appropriate, e.g. through a 2 clause BSD style license instead of plain old public domain. |
| March 28, 2011 | Also can have cases where NASA/center legal staff decide not to release software based on external open source if they have trouble deciding |

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| 8:07 PM | whether the external licenses are satisfied. |
| March 29, 2011 1:03 AM | I would agree with him here. If you have a new product which is a derivative work with components from a variety of different open source licenses, the legal review burden is substantial, and unfunded. So the cost-effective option is "don't release the work" since external release is rarely a requirement for the funding project. |
| March 29, 2011 1:30 PM | I am looking closely at NOSA 1.3 for the first time, and from the perspective of Recipient. The most worrisome part to me is clause 3.J. "...Recipient is hereby put on notice that export of any goods or technical data from the United States may require some form of export license from the U.S. Government. Failure to obtain necessary export licenses may result in criminal liability under U.S. laws.." This is not compatible with the Internet as it exists today, and puts a legal burden that many grass-roots open source projects cannot handle. These and perhaps many academic institutions would be wary of basing their open source efforts on top of it. Having this clause in the NOSA would very nearly doom a code base to being the same as closed source, i.e., the people who use open source and respect US law will stay away for fear of criminal prosecution. |
| March 29, 2011 1:57 PM | He has a valid concern, but I don't know that there is any way to get around the fact that NASA does stuff in space and technology, and it's in just such areas that export controls often apply. However, lots of academic and grass roots efforts manage to work within the export control rules. Sure, it's not the total carefree world of publish what you will. |
| March 29, 2011 3:04 PM | Unless the appropriate part of the source code is specifically marked as export controlled, then how is anyone supposed to meet this license? If something is not clearly marked as export controlled, then it should be fair game. |
| March 29, 2011 3:22 PM | Our project, OpenMDAO is currently released under NOSA. We have lots of outside interest from Academia and Industry. No one has yet expressed concern over the license. That being said, I see that there are some gotchas in the license. It would be nice to have other options, but in our case it was definitely better than nothing. |
| March 29, 2011 3:30 PM | IMHO (and IANAL)*, if every file is marked with NOSA v1.3 (as is often practice with GPLv2), then there is no way to know. Assuming that any release from NASA needs to go through NASA legal review, then it should be possible to catch export issues there. If there is no export issue, then that wording should not be applied. Granted, there still may be many cases of gray area, but I'm guessing that a lot of progress can be made if this option of a non-export/non-ITAR-encumbered license is made available to the NASA code originators by NASA legal. This, of course, may mean an alternative license, or the option to release under something like 3-clause BSD. (*IANAL is my humble opinion |

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| | *IANAL = I am not a lawyer) |
| March 29, 2011 4:07 PM | Other projects have deal with ITAR restrictions. OpenBSD, for instance, has cryptography that falls under ITAR. (see http://www.openbsd.org/cvsync.html and scroll down)."IMPORTANT NOTE: There are a few issues relating to cryptographic software that everyone should be aware of: * The OpenBSD sources are from Canada. As researched by a Canadian individual and as described in the Export Control list of Canada, it is legal to export crypto software from Canada to the world. * However, if you are outside the USA or Canada, you should not fetch the cryptographic sections of the OpenBSD sources from a CVSync server located in the USA. The files in question are [.....]Because of the USA ITAR munitions list, crypto software may only be exported to Canada from the USA."Another thing to consider might be dual licensing: release stuff under a dual NOSA / [something else] license. NASA and other government entities can employ the software under NOSA to keep their people happy. outside users could be free to hack and distribute the code under LGPL or something similarly aligned with the spirit of the NOSA license. |
| March 29, 2011 4:22 PM | I will never understand lawyer speak, but I always read that clause as a catchall. It sort of says, we give you this open source software, but that does not mean you can put ITAR/export controlled stuff in it and use the license as cover. If you put ITAR stuff into what we gave you and then distribute it, you're still liable. Again, it's not ideal. However, for our project it has not been a show stopper, yet! |
| March 29, 2011 4:23 PM | When a project really has ITAR issues, such as CVsync, then I think it is appropriate to have that additional statement. But that statement is outside the standard BSD license.If there *really* is an ITAR issue with a piece of source code, I personally would not apply LGPL to it to circumvent the issue. |
| March 29, 2011 4:28 PM | NASA needs to be able to make use of other OS licenses (e.g., Apache 2, GPL 3) in its work. NOSA is not sufficient.Perhaps the biggest problem with NOSA is that very few people really understand it, or are willing to take the effort to understand it. Although there are many OS licenses, the most successful (widely used, visible, etc.) projects make use of a small set of licenses (Apache 2, GPL 3, etc). Each of these "most popular" licenses has been extensively reviewed and "tested" by the community (developers, lawyers, etc.) and so their implications, constraints, etc are well understood... and thus are NOT a barrier to open source innovation. |

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| March 29, 2011 4:30 PM | it's not CVsync, it's the OpenBSD project as a whole. CVSync is just their version control system. Furthermore, they don't release anything under GNU licenses (they're BSD, for goodness sake!).The only "circumvention" going on is the fact th |
| March 29, 2011 4:32 PM | Federal agencies needs a fungible model for sharing GPL modifications. If one agency can find a way to do it that makes its lawyers happy, it would have a huge impact on OSS government-wide. |
| March 29, 2011 4:37 PM | The "disclaimer of warranty" and "limitation of liability" clauses in GPL3 (and similar language in other licenses) ought to CYA for any contributions from civil servants. It's pretty clear that contributors, the project leaders, and cont |
| March 29, 2011 4:43 PM | furthermore, contributions come from *individuals*, not federal agencies. All we have to do is empower civil servants to make contributions to OSS projects as individuals.If NASA wants to bless an official patch to an OSS project, then |
| March 29, 2011 4:50 PM | Amusing. NOSA Ver. 1.3 incompatible with all other OSS licenses! (according to speaker). FSF considers it non-free?! (Clause G) |
| March 29, 2011 4:53 PM | My roadblock has not been liability, but convincing lawyers that the GPL doesn't conflict with the public domain. Public domain, they say, must not be subjected to the GPL. In effect, their argument is that we *protect* the public domain mo |
| March 29, 2011 4:55 PM | Oh, great point! Not to start a flamewar here, or reveal my personal bias, but perhaps this is yet another reason to prefer BSD over GNU. ;) |
| March 29, 2011 5:03 PM | After listening to Mr W, see how problematic NOSA can be. As I have said previously, I am happy to have NOSA as apposed to nothing else. But perhaps future releases of OpenMDAO can be released under a different license, if we can figure out a way for that to happen at NASA. |
| March 29, 2011 5:33 PM | Public domain code is always public domain (in the US), even if it is embedded into a source code file that is otherwise covered under the GPL. In other words, I could extract the public domain portion from that source code file and use it however I please, without putting what I use it for under the GPL. |

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| <p>March 29, 2011 8:17 PM</p> | <p>The exception is where a public domain section of code has so many mods to it that you can't reasonable extract the untouched portions. Anyway, the problem is knowing that a portion of code is public domain if it's not marked as such in a GPL source code file.</p> |
| <p>March 29, 2011 8:17 PM</p> | <p>This is perhaps a refinement of the main issue, but something I've run into... I think it is worth talking to Silicon Valley companies that have made contributions to open source. Some are okay with GPL v2, but not GPL v3; others have a problem with MozillaPL. The issue is: they see GPL v3 or MPL as potentially compromising whatever patents they have. I want to see commercial enterprises pick up NASA code, build on it, sell products based on it, and contribute back. But uninformed selection of open source licenses would still hinder acceptance of the software.</p> |
| <p>March 29, 2011 8:48 PM</p> | <p>The central issue seems to be that users dislike NOSA for the following reasons: 1) Not one of the standard set of OSS licenses, so it should not be used2) Incompatible with other licenses3) Unnecessary, as some of the other standard OSS licenses should be sufficient for our needs. Other government agencies have not needed their own custom license, and neither should NASA4) Having a special NASA license is a barrier to collaboration</p> |
| <p>March 29, 2011 8:55 PM</p> | <p>Potential users are not aware of NOSA, due to it's lack of use. So NOSA ends up being a barrier to adoption.</p> |
| <p>March 29, 2011 8:56 PM</p> | <p>Education to the developers regarding the need for disclosure of code usage and their accompanying licenses. Developers should be taught that disclosures are just like citations in a research paper, they are required and necessary!</p> |
| <p>March 29, 2011 9:03 PM</p> | <p>If NASA still wants to use NOSA, it at the very least needs to be modified to be compatible with other licenses... but NOSA should not continue to be used.</p> |
| <p>March 29, 2011 9:06 PM</p> | <p>Educate developers on the basics of open source licensing and its implications</p> |
| <p>March 29, 2011 9:09 PM</p> | <p>I agree with [the] statement that open source release should be the default option as much as possible for software done at NASA.Having that default option streamlined, with the use of one of the most popular standard OSS licenses instead of NOSA would have great impact NASA and the outside world benefitting from OSS.</p> |
| <p>March 29, 2011 9:16 PM</p> | <p>The gaol should be to no longer user NOSA... because it is not a standard license!</p> |

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| March 29, 2011 9:19 PM | Google uses the apache 2 license for almost everything. Also more modern licenses like MPL, LGPL (for libraries). BSD and MIT are a little antiquated. |
| March 29, 2011 9:20 PM | NASA Nebula is licensed under Apache 2, so there is a precedent there. |
| March 30, 2011 12:24 AM | Perhaps NASA should consider a dual-licensing model, such as Apache License, Version 2, and GNU GPL? |
| March 30, 2011 2:54 AM | "Standard" licenses become so because of popularity. It doesn't necessarily mean they're the best choices. As an example, GPL v2 versus GPL v3: version 3 adds a ton of complexity with not much added value (GNU fans may disagree here). If you look at, say, the MPL and Apache licenses, they're also pretty complex, and are far less popular than GPL and BSD. Simple is good. Not just for the lawyers, but for the developers, managers, customers, and end users who need to figure out what the heck the license means. Dual licensing is an interesting anomaly. The examples I've seen are worded so that any end user can choose which license they wish to use. I've also seen this backfire where the two licenses have incompatible clauses and the copyright owners / authors get rubbed the wrong way by people running with the project under an "undesirable" license. Balancing freedom with liability protection: that's how I see software licenses. "Freedom" includes liberty to distribute and modify the code, as well as liberty to sell it for a profit and the liberty to make proprietary mods if that's what floats your boat (or pays your bills). |
| March 30, 2011 1:33 PM | What do NASA folks do when they contribute to a project they do NOT own? If I contribute (say) an RSA authentication module to Trac, I have to abide by the Trac project's license. If I contribute similar to Django, I have to abide by theirs. And these may be different. I may need to agree to BSD, GPL, Apache, or others. We need to ensure that this is permitted by NASA policy. |
| March 30, 2011 2:10 PM | AFAIK it's not forbidden by any policy. If we needed explicit orders to do anything, nothing would ever get done. |

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| 81 Votes | Communication and publicizing NASA's open source efforts |
| | Where do NASA employees go to find out about the process of releasing code under an open source license? Where does the public go to find out what NASA has released? Where do you go to find out how you get involved, contribute, etc.? Is this |

centralized or distributed? Let's figure out how to make NASA's open source efforts visible!

Comments:

- Marc
h 27,
2011
7:10
PM

Do we have a Wiki? More importantly, is there a shepherd who can manage it?
- Marc
h 29,
2011
4:26
PM

One central website that acts as a clearing house for all the open source projects and resources available (documents, code, etc.) would be essential. The list will probably be large, so everything will have to be sufficiently indexed and searchable.
- Marc
h 29,
2011
4:36
PM

There are two sides -- releasing NASA-developed code as open source, and the use of open source (developed outside of NASA) within NASA. NASA workers and the public need open communication about use, creation, re-use, and integration of open source software.
- Marc
h 29,
2011
5:44
PM

Most large organizations that use software engage a developers community. They treat it very seriously and put resources behind the development of the community. Check out:
<http://msdn.microsoft.com/http://code.google.com/http://developer.yahoo.com/http://developer.apple.com/>
- Marc
h 29,
2011
6:01
PM

I'm more of a consumer than a developer, at JSC. Under Constellation I finally had the opportunity to move around the agency and often asked about the tools people were using. It's really a labor-intensive to try to map out the open source applications and the communities who are using them. If I use MS Windows and MS Office I can call the help desk when I have a question. If I use open source, I'm out there by myself and no one will join me unless I'm looking successful... How can we get some institutional support, some power users who can field questions and investigate the source of problems?
- Marc
h 29,
2011
7:23
PM

Re: the publicizing of open source efforts to the NASA community - perhaps a service catalog of open source software that is being used within NASA would allow NASA users to be able to find software useful for their projects. Software support could even be available for a fee from the OCIO or some other entity - so some of the more popular open source packages not developed within NASA would be supported. NASA users could also grade the software so a NASA user could easily see what is most popular....
- Marc
h 29

The state of California has a very similar problem. Lots of local, county, state, and federal projects that overlap in functionality and yet there is little cross communication between the various "agencies". A wiki was deemed an important element of the solution, but developing a

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| 2011 8:24 PM | program with encouraged leadership and "rewarding" those that made significant contributions to CA's complex open source environment. |
| Marc h 29, 2011 9:39 PM | Enable sites to make use of facebook login, google account login to ease use by new users |
| Marc h 30, 2011 4:59 PM | Something like the (now-retired) http://www.bbc.co.uk/opensource/ would be interesting |

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| 52 Votes | How deeply can the community be involved? |
| | As a government agency bound by large amounts of regulation and bureaucracy, what are the boundaries of community contribution? For example, could a NASA-originated codebase ever be handed over to a non-NASA community member for long-term support and maintenance? Is this legal? If it is legal, would it be practical? |
| Comments: | |
| March 28, 2011 2:06 PM | Unless explicitly forbidden by the license, forking is legal. I see no problem with non-NASA entities doing their own thing or taking over as needed. |
| March 29, 2011 2:42 PM | I believe there would have to be an organization that can screen any potential code base for proprietary/protected information, but beyond that I would hope that there would be no restrictions. I can foresee problems with software written by contractors having licensing/ownership issues, but NASA should work towards having more open contracting models when it comes to software development & ownership. |
| March 29, 2011 4:29 PM | NASA will have to commit resources and staff to handle any contributions. Sifting through contributions will be a big task. I wonder is there is a way to quantify the resources needed to actually accept contributions. |
| March 29, 2011 4:38 PM | There is actually already precedent for this. NASA developed the Numerical Propulsion Systems Simulation software and, thought it's not open source, the code base has been handed over to the NPSS consortium to continue maintenance. The consortium is made up of a number of commercial entities such as GE, Pratt and Whitney, and Boeing. |

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| March 29, 2011 6:07 PM | I think [he] is right here. If bureaucracy is a major problem, why not have NASA contribute to forks instead of trying to lead the community? It's not a handover, it's following the locus of the community. |
| March 29, 2011 8:03 PM | Already has happened with OODT: http://oodt.apache.org/ |

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| 40 Votes | Government restrictions, eg ITAR |
| Comments: | |
| March 24, 2011 6:50 PM | I think there needs to be a whole session just on ITAR |
| March 28, 2011 1:28 PM | Wish I'd seen this earlier. I agree with what [he] has said: ITAR and Open Source are not intrinsically incompatible, but anyone working on FOSS who is privy to information covered by an ITAR restriction needs to be aware and careful about never violating the security of that information. |
| March 28, 2011 2:20 PM | Don't forget SBU! This particular "classification" is a real hindrance to open communication. |
| March 29, 2011 1:10 AM | The whole thing of dual-use, in particular, needs clarification and some guidelines. One might develop software of general applicability, but, because it will be used on a spacecraft, it might be considered a "defense article", and subject to export controls, even if there's nothing "peculiar" to the space application. I'm thinking here of things like network stacks, utility programs, and the like. Clearly, software that is aimed at Guidance, Navigation, and Control is going to have export control issues. However, OSS and Export control aren't mutually exclusive. The export control restrictions are independent of the Open-Source-ness, so it's more a matter of the mechanics of distribution. |
| March 29, 2011 5:36 PM | If we use OSS in an ITAR-covered application, and that fact becomes known, that then provides some visibility into that ITAR-covered application. I don't know if that in itself might become an ITAR issue, where we might be able to use OSS but be unable to reveal that fact (possibly even by participating "too heavily" in the particular OSS community). |
| March 30, 2011 | Speaker Patrick Hogan commented that releasing useful libraries as OSS pieces, rather than releasing an entire application, may avoid ITAR issues. |

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| 5:42 PM | That's an interesting idea. |
| March 29, 2011 6:16 PM | This sounds like it's part of a more general subject of improving the release process and speeding that up when/if possible, so it should be a good topic. |
| March 29, 2011 7:11 PM | NASA doesn't normally deal with "arms", much less their trafficking. Shouldn't this discussion primarily focus on EAR? |
| March 29, 2011 8:12 PM | Spacecraft, instruments on them, and support equipment for them fall under ITAR as "defense articles" from US Munitions List Category XV. Non-spacecraft "dual use" items would fall under EAR. So different centers may fall mostly in one category or the other. (I just finished my center's annual export compliance training, and I can show off my shiny refreshed knowledge :-) |
| March 30, 2011 12:07 AM | And given the "if you guess wrong, you go to jail" sort of penalties, there's an incentive to default to "export controlled". That is, you have to work hard to prove it's not export controlled, and if you're developing software to support some specific mission, it's unlikely the project wants to spend much money working that issue: it's not necessarily contributing to mission success. There would need to be overarching institutional support (as in charge numbers and people specifically assigned to the task) to run the gantlet. |

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| 37 Votes | legal office approval by default in, say, one week |
| | <p>The default mode for bureaucracies is to move slowly and avoid taking actions, especially risky ones. Potential solution: after a project fills out a web form declaring its intention to make its information (code, designs, data, etc) open, NASA legal (and export control) have one week to "disapprove", else the release is automatically approved. Here "disapproval" means providing brief, clear, exact, signed feedback describing the problem and suggested remedies. This procedure (inaction==approval) is generalizable to other bureaucratic processes.</p> <p>It can be argued, that in the case of the government, all software must be released open source as it is developed unless an explicit waiver is obtained in advance.</p> |
| Comments: | |
| March 29, 2011 6:17 PM | This sounds like it's part of a more general subject of improving the release process and speeding that up when/if possible, so it should be a good topic. I kind of doubt that the policy will be changed to default to open source, especially in such a short time, but it seems worth discussing. |
| | YES. And it the onus should be on them to make the case that it should not be |

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| March 29, 2011 6:23 PM | made open. They should have to give clear and legitimate reasons for it not to be approved! The onus should not be on the person seeking the release to make a case for its release. By default it should be released. |
| March 29, 2011 7:59 PM | Great idea. While I agree with the general idea of this suggestion, I agree with James that the shortness of the duration allowed to Legal will essentially shoot down this suggestion before it see's the light of day. To make this otherwise excellent suggestion acceptable, I propose we make the term "2-3 Weeks" instead of "1". |
| March 29, 2011 8:58 PM | There seems to be two main observations here:1) let's streamline the approval/review process for all open source activities ((a) either release, (b) converting an ongoing project to open development, and (c) starting a new project that will be openly developed).2) at the beginning of a project where the performer knows they want to develop it openly (case (c) above), there should be a very streamlined approval process.For this to be successful, the performer is going to have to do some work prior to it being approved. The current process right now isn't streamlined and there is considerable back-and-forth between the performer and the review process. This occurs partly because the performer doesn't do the upfront work necessary to make it a streamlined process.In summary, this is not *just* legal, and we can come up with a process which is streamlined. Nobody would admit that it is streamlined right now. |

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| 32 Votes | Development models & ongoing support |
| | Should there be a single standard for how software is developed, how releases are managed, etc.? What happens to a project that is released after the original authors leave? Who maintains that code? Who does code review? Who gets commit access going forward? What happens if no one steps up? |
| Comments: | |
| March 28, 2011 1:25 PM | NASA has standards for software development, code-review, and configuration control. They are not uniformly applied, but I think it's a different topic than software licensing. Releasing as open-source is primary a licensing issue. With respect to commit access and maintenance, once it's open the software can always be forked and a branch maintained by people outside of NASA. A key issue in that case would be trademarks, e.g. a forked branch should not be called "NASA Dynamic Flow Estimator" even if the original was. But that is an issue that can be made clear in the license terms. |
| March 30, 2011 1:29 PM | I think creating, documenting, and blessing some standardized approach*es* would help acceptance from management. But trying to force everyone into a one-size-fits-all won't work, prevents evolution, stifles innovation. The OSS community is evolving rapidly in the tools it uses, the techniques (test driven |

development, documentation driven development, continuous integration, continuous deployment). We don't want to be stuck with ill-conceived ideas like "waterfall" when there are demonstrably better options that have emerged.

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| 31 | Collaboration |
| Votes | Internal, external, and connecting the two. |
| Comments: | |

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| 26 | Appropriateness of open source release for different types of software produced by NASA. |
| Votes | |
| Comments: | |
| <p>March 28, 2011 3:25 AM</p> | <p>NASA researches military and non-military applications - and this represents a concern for many developers - as it is possible for NASA to release code to the community, have that code developed further by programmers and then have that code reacquired by NASA for use. It raises real ethical questions on any government (NASA, DoD, etc) use of civilian open source code to develop, for example, weapons used by the armed forces. Most definitely there should be a clear boundary for community contribution that prohibits open source coders from contributing to NASA programs geared toward any kind of explicit military application, as well as open source code used in any kind of military context.</p> |
| <p>March 28, 2011 1:42 PM</p> | <p>Open source software, and its derivative products, can be used for any purpose. If a software author wants to control the types of things that get done in derivative works, then a proprietary license would be more appropriate.</p> |
| <p>March 28, 2011 1:52 PM</p> | <p>on the contrary, publishing software as open source can protect its author from military restrictions. For instance, research code can get branded as "dual use" and end up becoming classified or branded with ITAR restrictions. Once classified,</p> |
| <p>March 29, 2011 2:58 PM</p> | <p>On the question of a "a boundary for community contribution that prohibits open source coders from contributing to NASA programs geared toward any kind of explicit military application". Anyone who releases software as open source has the flexibility to create their own open source license to restrict the software's use in military applications. I believe there are already certain</p> |

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| <p>March 30, 2011 2:44 AM</p> | <p>open source licenses that prohibit use by the government. I don't think there needs to be any additional "boundaries" put into place. If someone doesn't want their code to be used for military applications, they can put that right into the license, or choose not to contribute to certain projects.</p> <p>While I appreciate pacifist / anti-military sentiments, the fundamental spirit of open source is freedom. That necessarily includes military applications. My personal experiences haven't been with *avoiding* military applications per se, rather avoiding having a project declared ITAR or classified and as a result shutting down my academic work. CYA: I do not condone military secrets or circumventing ITAR, of course.</p> |
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| <p>25 Votes</p> | <p>Public access to NASA source code repositories</p> <p>How will NASA make available its open-source code repositories? Will there be a unified portal (like Sourceforge, Savannah, GitHub, etc.) that will host all NASA code, issue trackers, and forums related to NASA OSS projects? What SCM systems is NASA considering?</p> |
| <p>Comments:</p> | |
| <p>March 29, 2011 4:50 PM</p> | <p>Would love to talk about this in the context of a federal-wide SCM platform.</p> |
| <p>March 29, 2011 5:04 PM</p> | <p>LaRC CIO told me I should use external repositories (GitHub, e.g.) for SCM joint projects</p> |
| <p>March 29, 2011 5:34 PM</p> | <p>Many of the examples presented by Terry. Fong were hosted in GitHub. One in Sourceforge. I think the more difficult part is <u>finding</u> the projects and discovering the background requirements/goals.</p> |
| <p>March 29, 2011 5:36 PM</p> | <p>OpenMDAO, from NASA Glenn, uses Launchpad.net</p> |
| <p>March 29, 2011 5:48 PM</p> | <p>Both SourceForge.net and GitHub are on the APPS.gov storefront. IMHO, GitHub is miles above sourcefourge with continuously iterating their platform and incorporating a micro-community around each piece of software on GitHub.https://www.apps.gov/cloud/cloud/category_home.do?&c=SA</p> |
| <p>March 29, 2011 5:59 PM</p> | <p>I agree with casey about discovering and finding the projects.</p> |

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| March 29, 2011 6:32 PM | The Federal Communication Commission recently worked out Terms of Service with GitHub for government use. I'll get a hold of more information. And we have a process in place to move our ToS agreements to GSA. |
| March 29, 2011 9:11 PM | I believe that NASA has already signed a ToS agreement with GitHub. But to answer the original question, I believe that government agencies should embrace the following:(1) have their own app store that is the front-end of all software projects that are either available for licensing, download, and contribution. The app store should be there to help people search and discover software to use and projects to be part of. The app store should use an API from the code repositories to have it be the most up-to-date summary of the project, as it should be a one time form for the PM of the software to fill out. In general, you don't want duplication of information, as this is how it gets stoic and out of date. (2) Don't roll your own subversion or git repositories. You want to go to where the community is. NASA should have ToS signed with 3rd party vendors (GitHub, Sourceforge, etc.) that is based on the community they want to engage. On this list, projects should be able to abide by the ToS and not have to sign their own. |
| March 29, 2011 11:36 PM | It might be good to create a webpage on NASA.gov that lists all of the open source projects that NASA has started, uses, and/or contributes to. |

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| 25 Votes | What areas within NASA should be targeted as likely "early-adopters" of open source development? |
| | As we move forward with new policy for open source at NASA, some areas will likely benefit from using open source with less institutional resistance, and in so doing be very useful as trailblazers for verifying that the process as a whole is sound. Brainstorming which areas/projects could help in this way, and what specific issues they might face, may help us keep the "end-user" in mind while drafting policy. |
| Comments: | |
| March 28, 2011 2:17 PM | Here at MSFC, simulation software such as MAVERIC and ARTEMIS could probably benefit from being open source, but NASA has contracted with private 3rd parties who control close-source copyright over portions of the code. As these projects are jointly developed by civil service and private contractors, any efforts to unencumber the code would probably only be able to be done by the CS developers.I'd be interested to hear how JPL SPICE has fared, versus MSFC's proprietary software. Was SPICE developed from the very beginning as open source, or was there an effort to open it up after it had begun? |
| March 29, 2011 | At Glenn, we make large use of the NASA NRA process. In the last round of NRA's we placed a very heavy emphasis on the IP statements in proposals. We |

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| 4:00 PM | actually requested proposed that included open source IP statements. I think that the very first place to start with finding OpenSource projects is places where NASA contracts for software to be developed. If NASA pays for it, there is no reason the contracting agency should retain IP control over the Product. The NRA process is a great place to enforce this, as there is a lot of funding that heads that way from the Aeronautics program side of things. |
| March 29, 2011 8:28 PM | Code developed for research purposes (rather than operational or flight software) should, in theory, have less institutional resistance. |

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| 22 Votes | Limitations on contributing to external open source projects |
| Comments: | |
| March 29, 2011 2:47 PM | If NASA begins to more heavily leverage the open source community for certain types of software (non-safety critical, etc), then NASA's policies should certainly allow for contributions back to the community. For example, if a NASA project decides it is of value to utilize an open source 3D graphics library, then there should be no restrictions on NASA employees contributing bug fixes and/or enhancements to that library so that the community benefits from NASA's use. |
| March 29, 2011 5:55 PM | I've already found -- and fixed -- bugs in numerous OSS projects we use. I do send patches back, or if I have commit rights, just commit 'em. Is there a policy that forbids fixing bugs, and publishing the fixes? |

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| 20 Votes | How to tie into existing NASA Policy from the Office of the Chief Engineer (OCE)? |
| NASA already has policy that anyone funded by the agency developing software has to follow. This policy is from the Office of Chief Engineer and the document is NPR 7150.2A, which is the NASA Procedural Requirement which guides the development of all NASA software. Link here: http://nodis3.GSFC.NASA.gov/displayDir.cfm?t=NPR&c=7150&s=2 Open source software is only mentioned very briefly in this document, in Section 1.3.2 and 2.3.1. Needless to say, this policy document does not mention much about open source. | |
| Comments: | |
| March 29, 2011 5:47 PM | Also, for software release, http://nodis3.GSFC.NASA.gov/displayDir.cfm?t=NPR&c=2210&s=1C |

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| <p>March 29, 2011 5:58 PM</p> | <p>Also mentioned in section 3.2.2 (for software release): http://nodis3.GSFC.NASA.gov/displayDir.cfm?Internal_ID=N_PR_2210_001C_&page_name=Chapter3</p> |
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| <p>20 Votes</p> | <p>Identifying current roadblocks</p> <p>What are the impediments to releasing open source code today? What are the pain points for people working on this right now? We can't move forward on improving the process if we don't have a concrete grasp of what's wrong and communicate that list back out to the public and to NASA's leadership.</p> |
| <p>Comments:</p> | |

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| <p>20 Votes</p> | <p>There is no release process to support brand new projects that have no code base yet.</p> |
| <p>Comments:</p> | |
| <p>March 29, 2011 5:13 PM</p> | <p>can you get a release decision based on the software requirements specification? It seems like the list of requirements the code can meet should be sufficient to determine what type of license and/or export control issues should apply to it. In particular, the SRS would let you decide the line between the software and what it can do vs. the models that would be analyzed with the software which likely would have export control issues.</p> |
| <p>March 29, 2011 8:30 PM</p> | <p>This type of process would be of tremendous help, both speeding up the initial process and allowing for future development without repeatedly cycling through the entire release process again.</p> |

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| <p>13 Votes</p> | <p>The low-hanging fruit</p> <p>As an outsider from the open source community, but with experience in the US federal government, I'm interested in talking about the low-hanging fruit. Actionable, small steps. Keeping it simple, and chalking up a wide variety of small victories. Agile development applied to project ideas. What are the small ideas that NASA can work on today using OSS that can potentially grow big in the future?</p> |
| <p>Comments:</p> | |
| <p>March 29, 2011 5:54 PM</p> | <p>One thing that helped kickstart at NASA HQ was deploying SVN and Trac for code repos and issue trackers. It's now a Center-supported resource for our AppDev and even Graphic Design groups. I don't think anyone cares</p> |

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| <p>March 29, 2011 6:41 PM</p> | <p>particularly that it's open source software -- it just works for them. But we can point to it as a successful OSS tool they already use, a camel's nose under the tent. I think Agile tools and techniques can extend the example even further.</p> |
| | <p>This brings to mind Vivek Kundra's idea of IT efficiency through use of "commodity services" in his "25-Point Plan Implementation Plan to Reform Federal IT" and the idea of generic API in Patrick Hogan's talk. If the software can be adapted to provide "commodity services" (well, as close to "commodity" as possible) then more will see the benefits of leveraging this past work. So an idea is when creating the marketing story for the software try to present it as a possible commodity service.</p> |

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| <p>12 Votes</p> | <p>How can NASA Open Source everything it develops?</p> |
| | <p>How can it and why wouldn't it? How can this happen baring classified and export controlled technologies?</p> |
| <p>Comments:</p> | |
| <p>March 29, 2011 5:05 PM</p> | <p>Add "What are the risks in doing this and NOT doing this?"</p> |
| <p>March 29, 2011 6:48 PM</p> | <p>I agree that this is probably worth discussing. Export control and such are reasons to avoid open source, as you noted, but in my understanding, NASA will also avoid open sourcing software that they think may be patentable or can sell. Things like copyrights or license restrictions could limit the release options, too. As the talk noted, moving to open source as a default does have advantages, but might be a difficult move for NASA to make since it basically reverses the current process. At least the discussion could try to figure out how to make it easier to get open source releases approved.</p> |

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| <p>11 Votes</p> | <p>Default Open Source. You should have to get approval to restrict something, not vice versa.</p> |
| | <p>All code should be open source by default. If you want to release it then you just fill out the web form mentioned in the 'level approval in one week...' idea. The onus should be on the part of anyone (export, IP/copyright lawyers etc) to explain why it should not be released. Else it is default open within a week. The key point is that anyone not wanting it to be released has to make that case, not as per the system at present, the people wanting to release it having to make the case that it should be released.</p> |
| <p>Comments:</p> | |

March 30, 2011
1:38 PM

I love this: "default allow" vs the more firewall-style "default deny". It makes so much sense and is so easy to understand... that it'll never be accepted. :(But I'm with you on it, it's a great idea.

9

Software Development Standards

Votes

Internal vs. external and the complexities of aligning the two.

Comments:

9

Barriers to facilitating real two-way open source

Votes

There are just too many, and the world will move on ahead without NASA

Comments:

8

Incorporating legacy software into a NASA project

Votes

How does NASA incorporate legacy software into a project and then release it as open source?

For example, how does NASA incorporate scientific models that have been openly developed and openly passed around the scientific community into a NASA project and then release that project as open source when it is not possible to identify all potential copyright holders and therefore acquire all necessary copyright assignment.

The scientific community is not concerned about such issues and move forward with its research and development, but these issues hold NASA projects back and make it difficult to release and collaborate with others.

Comments:

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Reducing the scope of the software release process so that it is project-size appropriate

Votes

The SRA is too onerous for small projects.

Comments:

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| 7 Votes | Governance |
| | Comments: |
| March 29, 2011 4:24 PM | Do you mean governance of individual projects, or policies within NASA to cover all NASA-originated projects? |
| March 29, 2011 8:00 PM | Governance of individual projects would (IMHO) be particularly cumbersome. There should be an over-arching governance policy specifically for OSS projects. |

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| 5 Votes | How does the maintenance, packaging, and upkeep of the OSS get funded? |
| | While providing public access to an Open Source revision control is fairly simple, a good Open Source project needs continual upkeep. Integrating public submissions, bug tracking, web site maintenance, publicity, etc, all take dedicated efforts. Who sponsors this work? How does it get funded? |
| Comments: | |

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| 5 Votes | Established path for OSS Projects created in govt labs to move to better governance groups |
| | Although more government labs are beginning to release their code as OSS, they are generally poorly situated to run major OSS projects due to their missions, funding limitations (both quantity and types), and temperament. Many projects begun in labs, such as SimDIS, BRL-CAD, Delta3D are ready for such a transition and would benefit by such. There should be an easy and straightforward way to transition an OSS project from a lab to a body more suited for long-term governance. |
| Comments: | |

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| 5 Votes | Whatever happened to Cosmocode? |
| | Wasn't it supposed to be NASA's own version of sourceforge / berlios / GitHub? It seems to have vanished without explanation, and now some spammer is squatting cosmocode.org. |

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| Comments: | |
| March 29, 2011 6:40 PM | My understanding of CosmoCode was to create a community of developers for open development of NASA software. The initiative realized that the internal policies weren't in place yet to utilize the development of this community. Moreover, as we are hearing here today regarding rolling an entirely new system, I wouldn't be an advocate for NASA to create its own version of GitHub. NASA should create the policy to allow open development of software then allow the performers to host it where ever they see fit (based on the community they are engaging, and appropriate approval). I am a fan, however, of a NASA app store where people can see all the software under development. |

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| 5 Votes | Sharing software |
| | Including what technologies can be used |
| Comments: | |
| March 24, 2011 4:51 PM | Can you be more specific about this topic? Are we talking about how we publicize open-sourced projects? What platforms (GitHub, etc.) we use to make open sourced code available? Need more info... |
| March 29, 2011 5:42 PM | Maybe we can frame this to be about how the open source software can be packaged such that people that are interested in the product can try it with very little effort. For example, the idea of setting up server environments, writing security plans, adapting interfaces can be daunting and make the investigation of open source solutions a non-starter. I think use of the cloud, published virtual machine images, and templates for required documentation (e.g. for FISMA compliance) would be beneficial here. |

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| 5 Votes | Is the NASA culture ready to OSS? |
| | Cultures are complicated, with systems in place to maintain the status quo. What indicators reveals that the culture is ready? How do you promote, use, develop, etc. OSS within the current culture? What is does the future culture at NASA look like that will continue to adopt/use/dev OSS? Bottom line - is the culture REALLY ready? |
| Comments: | |
| March 29, 2011 7:47 PM | I feel that NASA culture is slowly but surely transitioning to one of "openess". Consider its current use of open technologies, like social media. We now are federally mandated to collaborate on human spaceflight ventures with commercial entities. That said, NASA is more than ever quite accepting of open collaboration on thoughts, ideas, and activities, so the groundwork for collaborative software development has been laid. |

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| March 30, 2011 1:37 PM | It starts small, but I imagine that as NASA brings on younger software developers, they will have grown up with public code repos, open source licenses, and all the rest. And they'll expect and demand to use those approaches, as they may well find close-source tools and methods to be huge barriers. If you deter your brightest, most motivated developers, they'll move on. The bureaucracy required to even deploy a project has caused a number of excellent developers I know to leave the NASA mothership, and that's a loss to the Agency; we used to be a place that attracted the best developers. |
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| 4 Votes | Imagination: great data but where are the ideas |
| Hold an open ideas competition: the NASA Data Challenge, and award prizes to projects that use NASA data / open source code in ways that are able to excite and mobilize the open source community. Use a crowd sourcing model (for the early stages), and a peer reviewed model for the latter stages of the competition. Offer various categories of award to attract a wide range of participants and reward bold and imaginative projects. | |
| Comments: | |
| March 29, 2011 7:24 PM | Take a look at JSC's Inclusion and Innovation Initiative. JSC has been doing this type of thing for the past 4 years or so. |
| March 29, 2011 10:18 PM | Any good links? http://www.NASAhackspace.org/johnson_space_center/Not found anything where, for example, a great app or game came out of a competition? |

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| 4 Votes | NASA use of public source code repositories |
| What, if any, impediments are there to the use of public repositories? | |
| Comments: | |
| March 29, 2011 7:57 PM | Code validation is an issue. Attackers are beginning to "post" malicious code in repositories, "app stores", and various other resources. It would be advantageous for NASA to develop a shared (but trusted) repository for source code, utilizing AAA and a code review process. Or, if the use of a public repository has been properly vetted, NASA could host a mirror of that repo. |
| March 29, 2011 8:15 PM | To clarify ... AAA - authentication, authorization and accounting. |
| March 30, 2011 1:44 PM | One could use a public repo like GitHub, with a "NASA" organization. The org would accept contributors who had direct commit access. If external contributors cannot (by policy) be trusted (AAA, whatever) then code can be |

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| | pulled from them and vetted by the NASA project maintainers. I don't think it's a technical problem but a political one. |
| March 30, 2011 4:28 PM | Good point! What do you think about mirror sites at NASA? |

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| 4 Votes | USG employees as part of their official duties cannot be copyrighted in the US. |
| | If USG employees work is solely public domain, how does that work with OSS licenses? Is it a non-issue? |
| Comments: | |
| March 29, 2011 5:38 PM | (1) Much of the USG SW development is done by contractors and not public servants (as per the info given in W's talk), and as such isn't subject to automatic entry into the PD.(2) I would imagine that the incorporation of PD code software wouldn't be an issue with many of the standard OSS licenses. |

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| 4 Votes | Determination of risk (for software use) |
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| Comments: | |
| March 29, 2011 8:13 PM | S.T.R.I.D.E. |

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| 4 Votes | Community Development |
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| Comments: | |

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| 3 Votes | security of software |
| | How does NASA prevent viruses and trojan horses from being downloaded and installed, transmitted by piggyback on open source? E.g., build and test open source standard loads that are swept for viruses (as we do for proprietary loads before pushing updates)? As a Windows user downloading open source to evaluate it, I don't attempt to review or even recompile the code before installing it. Again, the solution seems to be institutionalizing |

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| support for open source. | |
| Comments: | |
| March 29, 2011 6:32 PM | On the contract I work, all OSS software is security scanned prior to being put on any environment that is not considered "destructible." Most mission-critical platforms have not easy way to pull external source (e.g., from the internet) without yards of paperwork and time tables and whatnot. But for the regular production environments, I would imagine that the software has been security/virus scanned as part of its integration into the environments. |
| March 29, 2011 7:08 PM | We have to use a risk-based approach ... Security should be integrated into each level of the development life cycle. That includes code pulled from external sources. Code review should occur at multiple levels, and applications should be "staged" and scanned prior to being placed into production. |
| March 30, 2011 1:41 PM | How does NASA prevent virii, trojans, et al from being downloaded in closed source? At the risk of beating the "given enough eyeballs, all bugs are shallow" mantra to death, I find security issues get fixed much quicker in open source than closed. OSS seems to be going thru a very healthy change to heavily depend on automated build and test tools. There's no reason security auditing software can't be made part of that, just as you would with Section 508 conformance testing. And with the source, you have a chance to find insecure code -- something not possible with closed source. |

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| 3 Votes | Limitations on the use of open source for mission, flight, human rated systems |
| | Although this seems like an easy question, the current use of proprietary COTS in these areas is well established. Should that be extended to non-proprietary as well, so that the source code is available, or at lease the unmodified source code? Open source communications stacks are currently used and there are efforts to use full stack advanced protocols to extend the internet to orbital space craft. Should those be Open Source? |
| Comments: | |

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| 2 Votes | Patents |
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| Comments: | |
| March 28, 2011 1:30 PM | In our current environment, software patents for open source projects seem somewhat hypocritical at first glance, but acquiring a patent for an open source innovation may protect it from being unethically appropriated and patented by |

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| | another. I'm no patent lawyer, though, and may be naive in my assessment (and somewhat paranoid). |
| March 28, 2011 2:28 PM | Patents and open source are not mutually exclusive. Not at all. |
| March 29, 2011 7:17 PM | It's generally accepted that one would patent an "idea" - a [somewhat] unique concept ... Whereas, the software itself is copyrighted to prevent its unauthorized or unlawful use (or copying) by others. This has been an ongoing debate (See https://secure.wikimedia.org/wikipedia/en/wiki/Software_patent_debate). |

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| 2 Votes | What's the HASHTAG? |
| | Can someone please post the Twitter HASHTag |
| Comments: | |
| March 29, 2011 4:22 PM | Community, I can't log into the chat site? Signup right there doesn't seem to work either. Someone? |
| March 29, 2011 4:26 PM | We're using #NASAoss |

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| 2 Votes | Culture change & hiring practices: open source participation as an explicit desirable on resumes? |
| | Organizational culture is partly about the attitudes & habits people bring in with them. Could experience participating in open source projects be a checkbox NASA routinely looks for when hiring software engineers? Not necessarily decisive, just worth N out of M points or something like that. |
| Comments: | |
| March 29, 2011 6:42 PM | Realization: this is even more important when hiring *managers*. |
| March 30, 2011 1:50 PM | Great point-- especially on hiring managers. We've sought out folks who've contributed to OSS projects when hiring developers. People who do this code because they enjoy it, and happy coders are more productive (and I expect, "better") than galley-slaves who only code for the paycheck. |

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| 1 Votes | Identification of open source possibilities |
| | There are capabilities that are useful across NASA centers that would likely also have potential for uses outside NASA. However, currently it is difficult to determine ownership and reuse potential. How can projects identify potential open source candidates (at a scope below the list of the entire project) |
| Comments: | |

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| 1 Votes | What are the real-time standards issues for mission-critical projects? |
| | Submitted on behalf of a physical participant at #NASAoss concerned about realistically addressing the mission ops environment. |
| Comments: | |

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| 1 Votes | Engagement of Remote Participants: Wish you were here? |
| | Remote (virtual) participation is evolving every day, as new tools and techniques hit the market and people become more comfortable with exchanging ideas via cyberspace and telecon. We'd love to know what really worked during the OSS. What could have been better? We're looking for constructive criticism from the end-users so that engagement can be brought to a new level every time we extend the community beyond the walls of the physical meeting. Since we won't have time to bring this up during the sessions at OSS, let's start the conversation below in the comments. |
| Comments: | |
| March 29, 2011 8:44 PM | To save time on introductions, how about having ALL participants (local and remote) provide a head shot, contact info, and a brief bio/resume - info could probably be copied from existing profiles on various Social Networking Services. Brainstorming primarily by voice seemed tedious. Suggest using an environment like Group Systems' ThinkTank, which can support simultaneous idea generation, commenting, and multiple types of voting/ranking. |

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| 1 Votes | Artificial gravity and extended sleep time |
| | Note: This idea was proposed by one of the participants in the NASA Open Source Summit Suggestions to this off-topic area. Please feel free to discuss it here. |
| Comments: | |

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| 1 Votes | Technical choices that facilitate the use of open source software |
| | How can technology decisions be made that lend themselves to use and creation of open source software? |
| Comments: | |

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| 1 Votes | software quality process |
| | How do we "buy off" or "certify" open source, or can we just preach about many eyes looking at it... we can run a few tests on a release, but nothing compared to all the users who are working with open source. What do I tell a manager who wants to know how I manage software quality when I compose from open source? |
| Comments: | |

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| 1 Votes | Encouraging NASA scientists and engineers to participate in OSS development |
| | NASA scientists and engineers should be encouraged to participate in the development of open source software. If a NASA employee fixes a bug in a project, he or she should be thinking about sending a patch to the project's mailing list. Even non-programmers can participate by opening bug reports, answering questions on mailing lists, and writing documentation. |
| Comments: | |

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| 1 Votes | Automatic sharing of all code within 6 months. Take a lesson from the scientists. |
| | We should take a lesson from the PDS. All science data from NASA missions is mandated to be online within 6 months. The same could be true of all NASA developed Code. |
| Comments: | |

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| 1 Votes | Profit Motive |
| | While NASA may have an interest in keeping its software open to the public, is profit motive among its contractors a significant obstacle in keeping their software development closed? |
| Comments: | |

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| 1 Votes | How do you integrate a continuous review cycle with a continuous release cycle? |
| | This was raised during the second breakout session regarding section 508 compliance. Restrictions and compliance must be managed by review for inclusion in a main branch of development. A parallel branch of development is for development free from compliance and restriction processes. How would we balance and integrate these cycles: software release and software review? |

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| Comments: | |
| March 29, 2011 7:46 PM | Yes, why not? |
| March 29, 2011 8:12 PM | Of course the process would have to be tailored to software development, but we should emulate the FISMA Continuous Monitoring processes for information and information systems. Classify the software (purpose, use, ...), select and implement controls (repeatable peer review procedures), assess those controls, then authorize SW release (via a governance board).Something like that ... ;-) |
| March 30, 2011 1:47 PM | We've used Continuous Integration systems to check out our code on every commit, build it, run tests, check code coverage, etc (with H, no J). If you can automate testing of things like 508, just build it in. CI systems can be configured to build your main branch targetted for deployment, as well as any more developmenty branches. Quick notification of problems with the code allow developers to fix issues quickly, as the code changes are fresh in their mind. |

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| 1 Votes | who funds operations efficiency initiatives? |
| | Has anyone else found that there is no "customer" at NASA for efficiency initiatives, short of the usual amputation approach? That is, the initiatives that also elevate quality? It feels like swimming upstream. |

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| Comments: |
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| 1 Votes | Use of appropriate toolsets to enable open source collaboration for scientists / engineers |
| | Engineers and scientists writing code that may lend itself well to open source are often not |

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| | familiar with toolsets that would enable their work. Establishing best practices on proper toolsets or providing feedback from IT savvy developers would help. Knowledge on toolsets for integrating diverse code-types. For example a current project has components written in SQL, Matlab, Excel, and Visual Basic for Applications. Finding toolsets to help manage development from open source collaborators would be extremely helpful. |
| Comments: | |

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| 1 Votes | How would NASA start a software project as open source from the very start? |
| | If there is no code to review because none has been written yet, how would NASA create a software project from scratch with the community? |
| Comments: | |
| March 30, 2011 1:52 PM | Just host the code repo on a public repo like GitHub from the get-go. Instead of a private repo inside a Center or Agency walled garden. Assuming we could get a policy pronouncement that this is OK. Who you allow to contribute to your project is still up to you. It just becomes available for others to review, contribute to, leverage in their own projects, etc. |

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| 0 Votes | derivative works require review by Office of General Counsel of all component licenses |
| | Certain common scenarios (e.g. GNU tool chain, use of GCC and various libraries) can have "canned reviews" and policies for what form of license is appropriate. |
| Comments: | |

Communication/Press Summary

News Media Attendees

- Alex Howard, O'Reilly Media
- Chris Preimesberger, eWeek
- Mike Wall, space.com
- Sean Gallagher, FedTech
- Cade Metz, The Register
- Florian Vieru, PC World France

Top News Media Coverage

- "NASA hosts its first Open Source Summit"
<http://www.eweek.com/c/a/Government-IT/NASA-Hosts-Its-First-Open-Source-Summit-326695/>
- "NASA concludes first Open Source Summit, aims to make openness the default"
<http://opensource.com/life/11/3/NASA-concludes-first-open-source-summit-aims-make-openness-default>
- "NASA Open Source Summit"
<http://NASAwatch.com/archives/2011/03/NASA-open-sourc.html>
- "2011 NASA Open Source Summit convenes innovators and technologists"
<http://gov20.govfresh.com/2011-NASA-open-source-summit-convenes-innovators-and-technologists/>
- "Space 2.0: NASA's Open Source Summit"
<http://shareable.net/blog/space-20-NASAs-open-source-summit>
- "NASA's Inaugural Open Source Summit"
<http://harishpillay.wordpress.com/2011/03/31/NASAs-inaugural-open-source-summit/>
- "NASA set to host open source summit"
<http://www.webpronews.com/open-source-NASA-2011-03>

Snapshot

Press Release: issued Friday, March 11 ~2:30pm EST

Media Links on Google (as of 3/31): ~106,000

Tweets & Re-Tweets (as of 3/14): ~1,255

Top Twitter Users:

- @NASAWatch

- @digiphile
- @opensourceway
- @FOSSwiki
- @RedHatGov
- @govfresh