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Message from the CIO

By Linda Cureton

I have never been fond of looking backwards. It is contrary to the Chief Information Officer (CIO) DNA that by nature makes us “futurists.” We work to become aware of technological trends and then look at ways we can lead the NASA information technology (IT) enterprise towards a “to-be” state. It is the only way to keep NASA competitive in a mobile, technologically savvy world where the life cycle of IT products is now less than 9 months.

In the past year, 10 individual Center CIOs, their staff, and a host of competent contractors have grappled with real-time issues while trying to build a proposed enterprise IT environment that will meet or exceed budget and performance expectations. It is kind of like trying to paint an airplane in flight. You have to build while never missing a stride in your ongoing IT service commitment. At times during this past year, I thought it was going poorly. However, each time I had doubts, our talented CIO leadership and staff outdid themselves. The biggest reward for all of us over the past year has been seeing these strong individual technology leaders work together to climb this steep grade and accomplish so much. This multitalented and diverse group of CIOs made talking about IT change, charting the tasks, working out the details, and overcoming differences of opinion all seem easy. If the path forward is more of the same, we will be very successful in building a successful future IT model for NASA. Just keep one thought in mind: “The future is not what it used to be!” However, thanks to our CIOs, it should be better. 

Leading the Future of Government IT

The American Council for Technology (ACT)–Industry Advisory Council (IAC) has selected NASA management and program analyst Travis Totten for its 2012 Voyagers Program. Totten works in the Office of Chief Information Officer (OCIO) at NASA Headquarters. He is one of 24 people selected for the program.

The Voyagers Program is a highly competitive leadership development program for mid-level professionals that pairs Government and industry professionals over a 9-month program, preparing them for their future leadership roles in Government and industry. “Government and industry Voyagers work together in pairs called ‘copilots’ and are also given a mentor within the Fellows Program, the alumni program for the professional development programs,” said Tom Howder, 2012 Voyagers Program Government Chair and a former Partners Program participant. “Government and industry go through the program together, gaining insight into one another’s industry and the challenges they face in order to foster collaboration between the two entities.”

Applicants were nominated by their respective agency or company as future leaders in the Government information technology (IT) market based on their past leadership acumen and future leadership aspirations. A panel of Government and industry senior executives reviewed and scored each applicant prior to selecting the final Voyagers, making the Voyagers Program participants the best of the best in Government IT.

Upon graduation in May 2012, graduates become members of the distinguished ACT-IAC Fellows Program (alumni of both the Voyagers and Partners Programs). ACT-IAC Fellows, representing some of the brightest minds within the Government IT market, are committed to lifelong leadership development, trusted collaboration, and working together to solve Government’s biggest challenges. Other notable OCIO ACT-IAC alumni include ACES Service Executive John Sprague and NICS Service Executive Tom Miglin.

For more information on the Voyagers and Partners Programs, please visit http://www.actppv.org/EDUCATION/VOYAGERS/Pages/default.aspx.
NEW SERVICES BEGAN FOR I3P NOVEMBER 1, 2011

NASA Enterprise Service Desk (ESD)

The way you order or request assistance for your IT equipment and services at NASA has changed. The new Enterprise Service Desk (ESD), located at the NASA Shared Services Center (NSSC), began operation on Tuesday, November 1, 2011. For Wave 1 Centers (HQ, GSFC, DFRC, and KSC), ESD replaced the current ODIN Enterprise Service Desk under the Outsourcing Desktop Initiative for NASA (ODIN) contract. Wave 2 and 3 Centers will still call ODIN for computing and mobile devices until they transition to ACES.

The ESD provides support for services such as computing and mobile phone seats, network printers and multi-function devices (MFDs), e-mail and calendaring, Web services and technologies, end-user services, data center services, network services, telecommunication services, and more.

The ESD will provide consolidated help desk services and will function as the interface between end-users and the Infrastructure Integration Program (I3P) service providers.

- 24/7 help desk
- First call resolution
- Service request system
- Product catalog orders
- Online status of inquiries and tickets
- Self-service tools (Web-based FAQs and knowledge articles)
- Notification subscription system
- System status feature

ODIN Help desk calls will be automatically forwarded to the 24/7 Enterprise Service Desk (ESD) at 1-877-677-2123; FAX: 1-866-779-6772, or TTY: 1-800-229-5746. However, users can continue to call their local help desk number too.

(Note: At this time, support for Enterprise applications will continue to be provided by the NASA Information Support Center (NISC) Help Desk: 1-866-427-4367 or https://arsweb.msfc.nasa.gov/ISRSUser.asp)

ACES End-User Services

Also on November 1, the NASA Agency Consolidated End-User Services (ACES) contract began. Hewlett Packard Enterprise Services (HP ES), the ACES service provider, assumed responsibility for Agency e-mail, calendaring, instant messaging, WebEx Services, and directory services. HP ES took over all existing ODIN assets for computing and mobile devices for Wave 1 Centers (HQ, GSFC, DFRC, and KSC). This transition will occur at the remaining Centers based on the Wave implementation date. This new strategy will allow the transition to proceed more efficiently and effectively, and will then facilitate a smooth deployment of new equipment. A revised plan for refreshing devices at many of the NASA Centers is currently underway. Transition should be transparent to users. While aspects of the underlying infrastructure are changing, there will not be a break in services currently provided under the ODIN contract. In addition:

- Many ODIN personnel will transition to the ACES contract and continue to provide support for all equipment and services.
- As mentioned previously, the ODIN Enterprise Service Desk has been replaced by the new NASA Enterprise Service Desk (ESD).
- In the future, training opportunities will be available for both Windows and Macintosh operating systems, along with productivity Suites (Microsoft Office) and other software provided by ACES.

A quick reference guide for ACES training can be found at:

To learn more about NASA ACES go to: http://insidenasa.nasa.gov/ocio/i3p/ACES, the ESD Web site can be found at: https://esd.nssc.nasa.gov.

For questions specific to your Center, please contact your Center Integration Lead (CIL):

- ARC: Susan Levine
- DFRC: Russell Leonardo
- GRC: Michael Heryak
- GSFC: Esmond Marvray
- KSC: Jeanne O’Bryan
- LARC: Sue Lemon
- MSFC: Linda Rawlins
- SSC: Teenia Perry
- NSSC: Tracy Patman
Ames’ I3P Expo Showcases the Next Generation of NASA IT

By Penny Hubbard, CIO Communications, NASA Ames Research Center

The Ames Code I Directorate and I3P Transition team hosted the Ames’ I3P Expo October 20, 2011. More than 300 people attended the event which included special guest, NASA CIO Linda Cureton.

Center Residents learned about I3P and the next generation of NASA IT. Participants received hands-on experience with End-User (ACES) products, learned about Communications (NICS) features and teleconferencing systems, saw demos of the new Enterprise Service Desk (ESD), and heard updates on Enterprise Applications (EAST) at Ames.

I3P Exhibitors answered dozens of questions throughout the day. Code I Teams presented information-stations including IT Security, Special Projects’ Network King and SCA& games, the Cyber-Security Operations Center (SOC), Ames’ Customer Advocacy and SharePoint services.

I3P Town Hall Meeting

October 14, 2011 the I3P Project Management Office hosted an Agency Town Hall meeting at NASA Headquarters. The event brought service executives and vendors together in one location to answer questions including the transition schedule, what I3P means for the technical community, changes at each Center, and general I3P concerns from end users. This high-profile, Agency-wide initiative affects every employee who uses IT services.

If you missed the live broadcast, The Agency Town Hall meeting hosted at HQ on October 14 is available for viewing online on the [http://insidenasa.nasa.gov/ocio/i3p/index.html](http://insidenasa.nasa.gov/ocio/i3p/index.html). In addition to the presentation video, the PowerPoint slides and notes from the Q&A session have also been posted.
2011: Year in Review

As 2011 draws to a close, it is an opportune time to reflect upon our past-year performance and success! There are many ways for an organization to measure success. The Office of the Chief Information Officer (OCIO) streamlined internal processes, eliminated redundancies, and reached several strategic initiatives.

We started by debuting a new design and magazine format for IT Talk. It shined a light on all the good things our NASA Centers are doing in the Information Technology (IT) world.

Infrastructure Integration Program (I3P). I3P is transforming NASA's IT service delivery from Center-based to Agency-based, resulting in IT service consistency and management, as well as enhanced IT security for our customers.

I3P consists of the following:
- ACES—Agency Consolidated End-user Services
- EAST—Enterprise Applications Services and Technologies
- NICS—NASA Integrated Communications Services
- ESD—Enterprise Service Desk at the NASA Shared Services Center (NSSC)

The year brought some pretty hefty IT challenges, including a transition to NASA's IT Infrastructure Integration Program (I3P). The OCIO and its contracting partners are committed to working together as a team to ensure a smooth transition to these services for users.

Beyond I3P, we also continued to see how technological innovation is more important than ever. Things are changing at a fast pace, everything is connected, and standards are slow to emerge. We saw how new tablets are hot on the list of technological innovations. And cloud-delivered content is giving consumers the ability to get to data independently of a device. Many of our NASA Chief Information Officers (CIOs) are exploring ways to manage content in the cloud.

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Social networking technology became an even bigger part of our lives this year. Web 2.0 and social networking provide amazing technology innovations
that empower the end user and give us the ability to make quantum leaps in IT. Take Twitter for example; with the sustained explosive growth in the use of Twitter, it seems it cannot be viewed as a fad that will pass soon. Twitter provides a powerful way of adding richness to conversations and interactions.

There are many leadership challenges that surround the use of social media in organizations. This year, we explored how social media have evolved at NASA and how employees at the NASA Centers are using the various types of social media.

And, finally, the grand finale in 2011: We held our second annual IT Summit, August 15–17, in San Francisco, CA. More than 1,500 people attended the event. Conference-goers learned about a wonderful array of topics that included cloud computing, IT security and privacy, infrastructure, NASA mission support, and the IT workforce of the future. The Summit was picked up on Twitter and Facebook and blogs—at times, the event was the most popular Twitter topic in both Washington, DC, and San Francisco. And thousands of people who could not be there in person saw the Summit live-streamed on video and the Web. It was a critical step in strengthening our IT operations and achieving NASA CIO Linda Cureton’s vision to have the best IT organization in the Federal Government.

We have certainly had a terrific year in the world of information technology. And an even better year is on tap for 2012. ✥
Identity, Credential & Access Management (ICAM) Update

In fiscal year 2011, we worked to improve Identity, Credential, and Access Management (ICAM) services. Here is a brief overview:

**Faster Onboarding**
With the implementation of “Identity Framework 2.0” and the integration with the Office of Education’s One Stop Shopping Initiative, ICAM has helped customers be productive on day one of their affiliation with NASA. We reduced the time it takes for a new employee or partner to access IT systems by 76 percent—from an average of 49 days in October 2010 to an average of 12 days in August 2011. Contact your ICAM Center Business Process Leads if you have questions about your Center’s on-boarding metrics. ICAM CBPLs are listed here: https://inwiki.nasa.gov/cm/wiki/?id=7227

**Simplified Login**
Over 800 applications now use Simplified Login, nearly double the number that leveraged it last year. In October, NASA will pilot the use of Personal Identity Verification (PIV) smartcards with Employee Express, the benefits management system for NASA civil servants. (Users can continue to use a separate user ID and password to access Employee Express.) FedTraveller will be enabled for Simplified Login beginning on October 11.

**Is Your Browser Configured for Simplified Login?**
If you perform desktop login to the NASA Consolidated Active Directory (NCAD), you should never be prompted for your Launchpad password when accessing applications like WebEx, SATERN, and SharePoint. In order for Simplified Login to work, the NASA Client Trust Reference (NCTR) must be configured in your browser. Internet Explorer (Windows) is configured for the NASA Client Trust Reference through the NCTR Group Policy. For Firefox (Windows or Mac), the ICAM Engineering Team has created the NASA Firefox Client Extension (NFCE). The NFCE gives users a simple installer to configure Firefox for Simplified Login. Visit this link to install it: https://etads.nasa.gov/Firefox/. Contact your desktop service provider for additional assistance.

**Credential Registration Pilot**
Credential registration allows NASA to accept a trusted smartcard issued by another agency or company and register it for use in NASA systems such as NCAD, Launchpad, and the Enterprise Physical Access Control System (EPACS). We just finished our initial credential registration pilot and are assessing the results. Look for an announcement soon about NASA’s acceptance of PIV smartcards from other agencies. After we make progress with federally issued PIV smartcards, we will begin piloting the registration of PIV-Interoperable (PIV-I) cards, such as those issued by our aerospace contractors.

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Internal Mobile Apps @ NASA Have a Home

We’ve all used them—mobile apps on our iPhone, BlackBerry or Android smartphone, or tablet devices. We’ve grown accustomed to shopping for apps in the Apple App Store, the Android Market, or BlackBerry’s App World. Now there’s a place to go if you’re looking for apps that were designed specifically with the NASA civil servant or NASA contractor in mind. These are apps that give you convenient, anywhere access to critical NASA systems and tools that help you do your job. The new home for internal mobile apps at NASA is apps@NASA. You can find apps@NASA at https://apps.nasa.gov.

Apps@NASA is operated and managed by the Center for Internal Mobile Applications (CIMA), which is affiliated with the NASA Enterprise Applications Competency Center (NEACC) and supported by the Enterprise Application Services and Technologies (EAST) contract. Apart from the apps@NASA app store and its hosting service, CIMA offers other services to internal mobile app developers and users. A few examples of planned CIMA service offerings are user and developer forums, reusable code libraries, standard authentication architecture, and a secure mobile access point (SMAP) for accessing NASA data.

Apps@NASA is ready to host any app intended for a NASA audience, no matter who created the app or where it’s intended to be used. Current apps available on apps@NASA include the popular WebTADs Mobile app and NASA Contacts. You can reach the NASA internal app store by going to the URL from your mobile device or from a desktop browser. Once you’re at apps@NASA, you can choose the apps you’d like to download, including the apps@NASA app, and also get any required provisioning profiles.

Visit apps@NASA and explore what we’ve got to offer. If you have a mobile app for an internal NASA audience, use the support forum available at apps@NASA to let us hear from you. We’d love to host your app! Inquiries about mobile apps can be sent to MSFC-CIMA@mail.nasa.gov.
Using The Power Of Many To Explore

By Christopher E. Gerty, Open Government Initiative, Office of the Chief Technology Officer for IT

For a week in October, NASA sent six astronauts, researchers and habitat technicians to an underwater habitat to live and work, at NASA Extreme Environment Mission Operations (NEEMO)-15. The mission took place 43 feet underwater at Aquarius, an asset of the National Oceanic and Atmospheric Administration (NOAA), three miles off the coast of Key Largo. The goal of the NEEMO 15 mission was to understand more about how NASA could one day explore and operate on asteroids, using techniques that are orders of magnitude more capable and efficient than methods we use today. To achieve this goal, the NEEMO mission team performed a simulated exploration mission in the underwater environment. The knowledge generated from this simulation will help inform cost-effective designs of future space exploration assets.

This experiment was not staged entirely underwater. There’s a huge amount to learn about operations, communication and data analysis techniques for missions to deep space destinations. Not only because of the extreme distances, but the extreme and ever-increasing volume of data as well, due to exponential advances in information technology each year. This was the focus of the “Mission Control” component of NEEMO-15.

NEEMO leverages the field of marine science to test out new science operational methods with future applicability to space exploration. Marine biology science data is collected from the coral reefs near Aquarius – a data collection process that is analogous to how data will be collected during the exploration of an asteroid surface. NASA science teams learn from the different data collection and sampling techniques and use this information to develop future concepts during an asteroid mission.

Analyzing the vast amount of data that NASA brings back from its missions is an enormous task. In order to improve collaboration internally, as well as engage citizens in NASA’s mission, the Open Government team enlisted the help of NASA partners Zooniverse and Vizzuality (pioneers in the field of crowdsourcing) to engage citizen scientists in the NEEMO-15 mission. NEEMO-Zooniverse (http://neemo.zooniverse.org) is a platform which takes a square kilometer of ocean-bottom imagery, and allows the interested public to help find scientifically relevant items, and outline them for a broad representation of the reef. Then, traverse planning scientists can then use this aggregated data to target, or confirm the items for further study. The approach was to create a tool that was simple to use, accurate and detailed in its presentation, and appealed to a community who was interested in concretely helping NASA achieve its goals.

In just over a week of active beta testing, over 300 citizen scientists discovered over 12,000 features, and confirmed (or disputed) each other’s observations over 22,000 times.

Almost immediately after launch of the beta site, the emerging community of virtual aquanauts began bringing ideas forward to better the interface, improve data flow, and even take better images of the reef. While the community around NEEMO-Zooniverse was building, results of this data were shown to planners and NASA engineers. Engineers and geologists who photographed the images had a great exchange on photography techniques, including how to resolve exact locations under the ocean. Exchanging many of the location-based data sets in Google Earth-compatible .kml files made visualization easy and straightforward on multiple platforms. Since many of the components used in this project were developed under an open source license, future versions of this tool will benefit from the contributions of a vibrant developer community as well.

The project leads are beginning to discuss the next steps in earnest, including the applicability of this type of crowdsourcing technique to other space exploration analogs around the world, as well as deep space precursor missions themselves.

National Cyber Security Awareness Month

October 2011 marked the eighth annual National Cyber Security Awareness Month (NCAM) sponsored by the Department of Homeland Security (DHS). The purpose of the NCAM is to raise awareness about Cyber security to the public, federal employees, contractors, and grantees. All employees must understand the role we play in ensuring NASA information is secure while providing day-to-day business operation in meeting our mission goals.

The NASA message, which recognized DHS’s NCAM theme, reminds everyone to:

✧ STOP: Before you use the Internet, take time to understand the risks and learn how to spot potential problems.
✧ Think: Take a moment to be certain the path ahead is clear. Watch for warning signs and consider how your actions online could impact your safety, or your family’s.
✧ Connect: Enjoy the Internet with greater confidence, knowing you’ve taken the right steps to safeguard yourself and your computer.

NASA Centers held various activities to celebrate NCAM and shared ideas across all Centers to promote greater awareness of best practices and lessons learned. At the beginning of the month, Employees received a kick-off message from NASA Administrator, Charlie Bolden highlighting the importance of Cyber security Awareness. And every day Centers shared Cyber security tips with employees. Some of the NASA facilities even created unique poster campaigns using popular topics such as phishing and password strength to spread the message about Cyber Security Awareness.

For additional Cybersecurity tips, please visit the IT Security Awareness and Training Center website at: http://www.grc.nasa.gov/WWW/CIO/ec_itsat/index.htm

To sign up to receive the monthly Security Focus newsletter, visit: https://lists.nasa.gov/mailman/listinfo/nasa-infosec-newsletter
Personnel in the Jet Propulsion Laboratory’s (JPL’s) Office of the CIO (OCIO) have been working with Mars Science Laboratory (MSL) project personnel in a partnership to ensure the project has the services and software applications it needs for a successful launch, cruise, landing and mission. The OCIO has expanded and improved services to support MSL’s IT requirements, including hosting (and storage), directory, high-performance computing, as well as some application support such as problem reporting and image capture. This article will discuss some of these services.

Hosting Services
The OCIO’s legacy Application Hosting, (Oracle) Database, and MySQL Services have been combined into the new Hosting Service, which also includes JPL Storage. The Hosting Service provides MSL with MySQL database hosting, DBA, and database architecture consulting services. The Hosting Service also provides HP Blades to ground data system developers.

The databases support development, Integration and Test (I&T) and production flight for MSL’s ground data system. There are currently 14 primary MySQL databases utilizing over 26 TB of storage. In addition, there are replicas of each primary MSL MySQL database on separate infrastructure in another data center to insure high availability and quick recovery in case of a disaster.

In addition to the database hosting, the OCIO provides mission storage infrastructure to MSL and recently updated the existing storage with a new high-availability NetApp cluster. The high-availability pair provides fault tolerance and the ability to perform non-disruptive upgrades and maintenance—a necessity during MSL’s cruise, entry, descent, and landing (EDL) and prime mission. This highly available pair is comprised of two resilient and redundant cluster nodes. If one node fails or becomes impaired, a takeover occurs and the partner node continues to serve the failed node’s data.

Directory and Authentication
JPL’s Directory and Authentication service has provided Authentication and Authorization services for MSL applications and workstations. A cluster of LDAP and Kerberos servers has been configured on the JPL Network for general mission support as well as backup replicas for the MSL Testbed and ATLO facilities. The ATLO replicas have followed the spacecraft to KSC and are servicing ATLO functions locally.

MSL applications make use of the JPL Directory services for authentication and authorization using identities created through the NASA Identity, Credential & Access Management (ICAM) services. A set of LDAP branches managed by the MSL system administrators have been populated for workstation authentication and authorization as a replacement for NIS tables. These branches include institutional identities that are authorized to log into MSL workstations, POSIX groups, Netgroups, and Network mounts.

High-Performance Computing
JPL Supercomputing is preparing to provide two identically-configured supercomputing clusters to MSL to run Entry, Descent, and Landing (EDL) simulations and navigation simulations. These clusters will serve as failover to each other. Additionally, they will be set up to copy working storage from each cluster to the other. At this time the JPL Supercomputing team is developing the build image on a test cluster, and MSL is satisfied with the progress to date. The team is making provisions to continue providing service to JPL’s science community while these clusters are in dedicated mode.

Capturing MSL’s Photos and Videos
JPL’s Capture system is being used to collect, organize and preserve photo and video of flight and test hardware for MSL. Capture promotes consistency of photo and video records across projects, encourages ample photo and video documentation of installations, facilitates access and retrieval to project
JPL's OCIO in Partnership with the Mars Science Laboratory (MSL)
Mona Postma, Dana Runge, Alan Stepakoff, and Richard Van Why, who are all members of JPL's OCIO.

JPL Capture allows MSL personnel to upload, search, preview, and download multiple photos and videos, and simplifies management and preservation of project photos and videos. MSL personnel use a web browser interface to upload, search, preview, and download multiple photos and videos, batch-edit metadata, and create and share image collections.

Problem Reporting
The JPL Problem Reporting System (PRS) is a web-based application that supports’ resolution of flight project anomalies discovered during build, test, and operations phases using a proven lifecycle approach. MSL has been capturing and tracking anomalies in PRS since early 2006 and thus far has resolved and closed nearly 6000 anomalies in the system. To address and support MSL’s specific needs and complex architecture, OCIO has implemented and released several PRS upgrades including: a customized MSL system and subsystem hierarchy tree, an Excel data report, and customized MSL roles and signature conditions. In addition, OCIO developers have been upgrading reports from classic ASP to .NET and leveraging MS SQL Server and Microsoft ReportViewer to provide better performance, better user interface, better reporting capabilities, and faster turnaround on requested custom reports.

The NetApp cluster provides MSL with 110TB of usable SAS storage and 50 TB of usable SATA storage, with a maximum capacity of 4,320 TB.

JPL Capture allows MSL personnel to upload, search, preview, and download multiple photos and videos.

NASA OCIO IT Talk November/December 2011 11
E-mail is everywhere at NASA—it’s like the air we breathe. That’s why the NASA Operational Messaging and Directory Service (NOMAD) Customer Advisory Council (CAC) has launched an e-mail etiquette campaign to help us use this essential medium more cleverly, more efficiently, and more courteously.

The Advisory Council chooses a different topic to focus on each year—last year it was calendaring, and this year it’s e-mail.

According to Linda McMillen, an information technology (IT) specialist at Glenn Research Center who until recently chaired the CAC, the topic of e-mail etiquette has gotten an enthusiastic welcome from NASA employees. “These are things that are really bugging people,” McMillen said.

Everyone has gripes about e-mail—the sheer quantity of it, the confusing subject lines, the attachments you can’t open, or, everyone’s favorite, the spam. Fortunately, spam isn’t much of a problem at NASA because of effective spam filters, but all the other problems do occur here.

While e-mail etiquette is an Agency-wide campaign, each NASA Center is implementing the campaign in its own way—for example, by using posters or through “lunch and learn” meetings. At Headquarters, Tuesday

Dodson and Mary Shouse in the Headquarters Information Technology and Communications Division (ITCD) are leading the charge.

“A lot of our focus is on attachments,” Dodson said. If people send large documents, or photos and graphics, those attachments will fill up your mailbox. Pretty soon you’ll see the dreaded “Your mailbox is almost full” notice, which forces you to stop what you’re doing and clean out your mailbox. You have a limit of just 400 megabytes.

There are several ways to avoid this problem, Dodson said. One way is to avoid sending big files as attachments. Instead, put the files on SharePoint or on some other shared application.

Another good approach is to store your bulkiest e-mail under personal folders on your desktop—that way, the content will reside on your own physical hard drive rather than on servers. But, Dodson warned, “you have to be extremely disciplined to check your personal folders, or you can miss some information.” You’ll also find that e-mail stored on your computer is not available on Webmail.

In addition, McMillen said, the campaign asks people to avoid “the reply-all storm.” That’s when people hit Reply All instead of simply replying to the one sender who needs to get their response. Similarly, if you’re e-mailing lots of recipients, put their names on the BCC line so they won’t get every reply everyone sends.

Another important tip, McMillen said, is to use clear subject lines for your e-mails. “Tell people what you want from them. Is this an action item, a meeting, or just an FYI?”

The e-mail etiquette campaign has dozens more useful hints—not only regarding efficiency, but also covering courtesy, confidentiality, and appropriateness. Check out http://nomadinternal.nasa.gov/nomad/EmailEtiquette.pdf to get the full presentation.