Development and Operation of a Modern Information Portal for the ISS Medical Groups

V. Damann, H. Johnson, A. Sargsyan, P.V. McDonald, C. Armstrong, M. Scheer, JM Duncan

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Presentation Overview

• Presentation Goals
• Presentation Outline
  – The ISS Medical Management Structure
  – Data Exchange and Coordination Challenges
  – Solution: Secure Workspace for non-real-time collaboration
  – Implementation Challenges and Highlights
  – Post Implementation Use and Performance
  – Conclusions
ISS is a Major International Endeavor
ISS Medical Management Structure

[Diagram showing the structure of ISS Medical Management, including the Multilateral Medical Policy Board, Multilateral Space Medicine Board, Multilateral Medical Operations Panel, and Working Groups such as Countermeasures, Environmental Health, Radiation Health, etc.]
Joint ISS Operations:

- Multilateral consideration of Partner-initiated input into ISS medical operations
- Development of multilateral consensus medical position on programmatic issues (e.g., on planning of missions > 180 days)
- Development of multilateral inputs into ISS medical or medically relevant documentation, and multilateral document control
- Provision of medical input into the ISS Program on a regular basis
International Program Challenges

- Expected to operate by consensus
- Expected to be efficient with only limited real-time interactions
- Different medical cultures and standards of care
- Diverse medical backgrounds, training, and experience
- Different expectations about the ISS medical system
- Different management structures
- Variable funding levels
ISS Medical Organizations

- Mobile Users
- Time
- Language and Terminology
- Units of measure
- Operating schedules and timelines

Δ 07:00
Δ 06:00
Δ 13:00 15:00
Δ 21:00

Mobile Users

06:00 07:00
Portal Purpose

To promote efficient collaboration in the area of ISS crew health and medical matters by enabling:

- information exchange
- document sharing, review, processing, electronic approval / signature
- event planning and preparation
- electronic archival
- electronic reference database
- other collaborative activities pertaining to the medical support of the ISS Program
Implementation

- Technical management and maintenance is done by the ESA and contractor personnel in Cologne, Germany.
- Content management is the responsibility of the international program support personnel in Houston, TX.
- Only MMOP members and administrative have capabilities to modify the website.
- MMOP working group sites are established by the server administrators but managed by the WG.
- Alert Functions are used increasingly to reduce email traffic and optimize distribution of information.
• All MMOP relevant documentation (in progress)
• All Medical Operations documentation (in planning)
• All MedOps Training Documentation (in planning)
• Space Medicine Reference Documentation (in planning)
Alert Functions

- Email alerts can be sent when items have been modified or added to the website
  - Real-time alerts immediately following changes
  - Daily alert summary
  - Weekly alert summary

- Alerts must be set up by each individual and are not automatically set up by the administrator of the website
  - Each individual/user may choose which items generate alerts (i.e. MMOP agenda, MMOP action tracker, etc.)
  - Alerts can be changed at any time for any section of the website by the user
Accessibility

- All Participants
- View posted material from the MMOP workspace
- Browse through the MMOP portal

- MMOP Support Capabilities (+ above accessibility)
  - Add and edit postings
  - Add/edit information regarding personal information

- MMOP Administrative Capabilities (+ above accessibility)
  - Delete postings

- MMOP Member Capabilities (+ above accessibility)
  - Approve/reject postings
Collaborative Tools (1)

- **Document Work-Spaces**
  - Ground Rules & Constraints (operational)
  - MED, MORD, JMOIP (in preparation)
- **Meeting Work-Spaces**
  - MMOP Meetings and Telecons (operational)
  - WG sites (operational)
Collaborative Tools (3)

- Meeting Work-Spaces
- MMOP Action Tracker (operational)
- Archives, Document Libraries (in preparation)
Collaborative Tools (4)

- **Working Groups**
  - WG and MMOP members access and browse the workspace
  - Limited access to posting material on workspace
  - Contain agenda, minutes, splinter topics, presentations, calendar

- **SMOT**
  - Limited access to portal
  - Limited access to posting material
  - Will contain agenda, minutes, readiness review reminders, and presentations
Security Overview
Security Details

- Physical Security of Servers
  - all Servers are in restricted Mission Operations Area
  - restricted access control (electronic key-card)
- Firewall of DLR (German Aerospace Research Facility)
  - global port filtering
- ISA Server (Microsoft Internet Security and Acceleration Server)
  - more restricted port- and source- filtering
  - URL filtering
  - user authentication
  - disabled remote access
  - virus scan of all incoming and outgoing traffic
Security Details-2

- **User Authentication**
  - No Anonymous Login Allowed
  - Individual User IDs and Passwords
  - Centrally administrated
  - User-level access rights
- **Secure Internet Protocol**
  - https 128-bit SSL-encryption (with Root Certificate)
  - no unencrypted access possible (redirect to https)
- **SharePoint Security Features**
  - Site User Groups
  - Item-Level Permissions
  - Moderated Upload/Modifications
Current Capability

- Repository of all MMOP relevant information
- Limited Document Management System
- Approval/Disapproval of minutes via website
- Change Request (CR) processing via website
- Reduced email traffic
- Similar approach for MSMB, MMPB
Future Possibilities

- Enhanced scheduling via Exchange Server
- Full Document Management System
- Links/Embedding to/of external websites
- FTP capability (under evaluation)
Thank you!

E-mail your questions and suggestions to: