

# **Development and Operation of a Modern Informal Portal for the ISS Medical Groups**

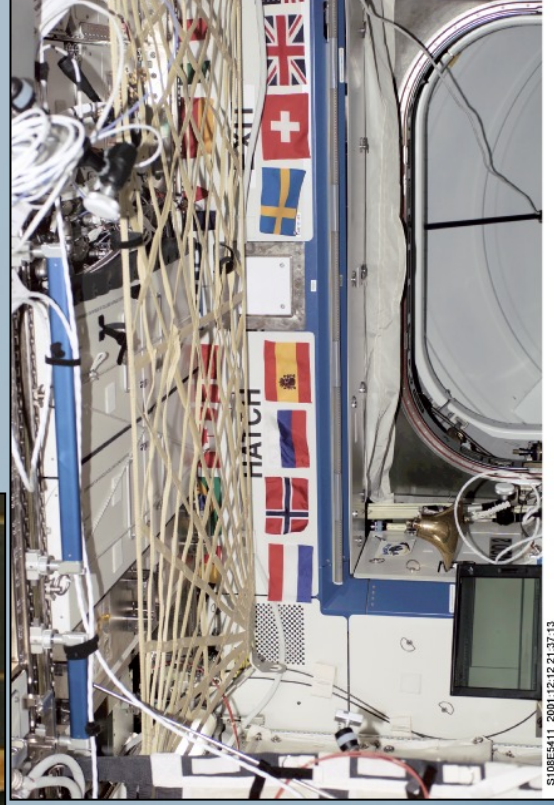
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Duncan

**ASMA- 2007 , New Orleans, USA**

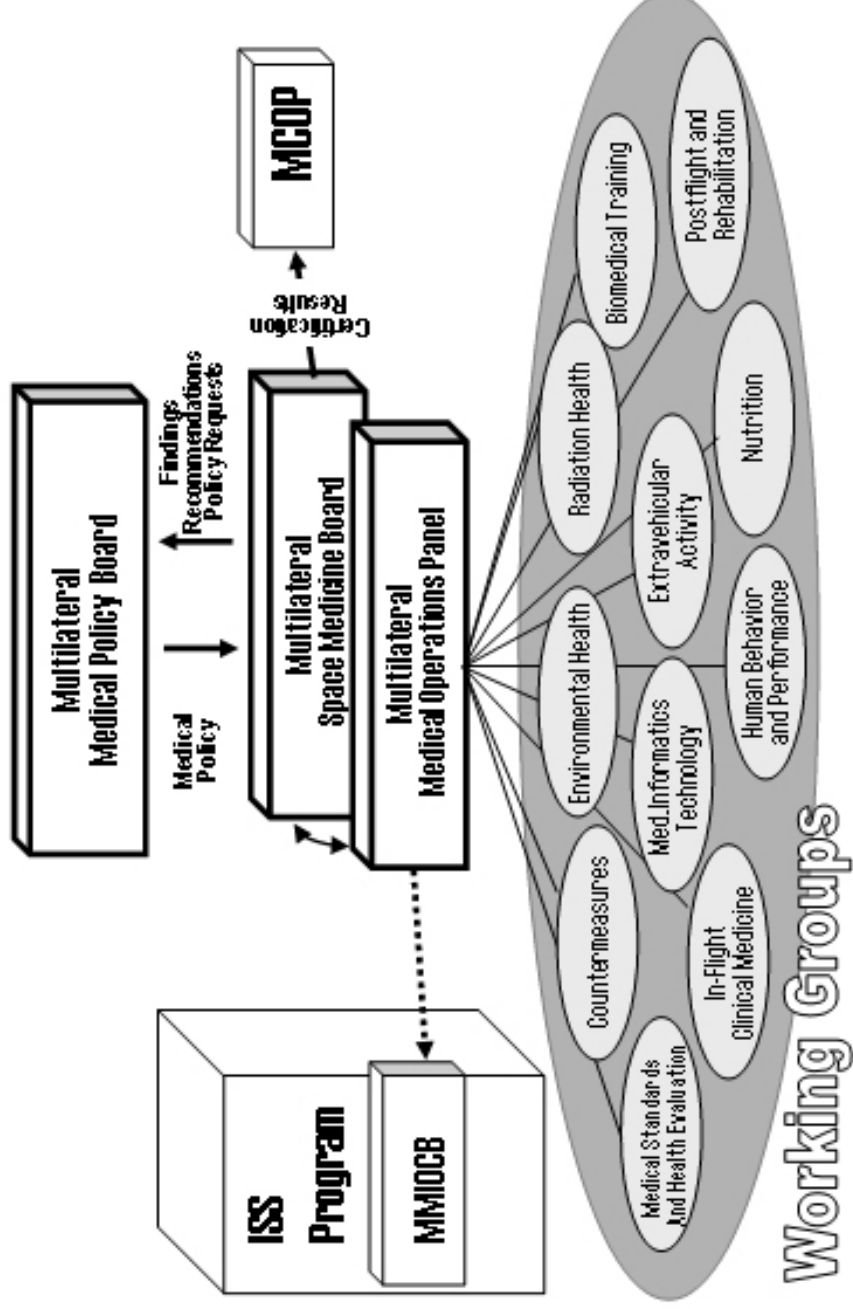
# Presentation Overview

- **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



# 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

– Time  $\Delta$

– Language and Terminology  $\Delta$

– Units of measure  $\Delta$

– Operating schedules and timelines  $\Delta$

**Mobile Users**



13:00



15:00



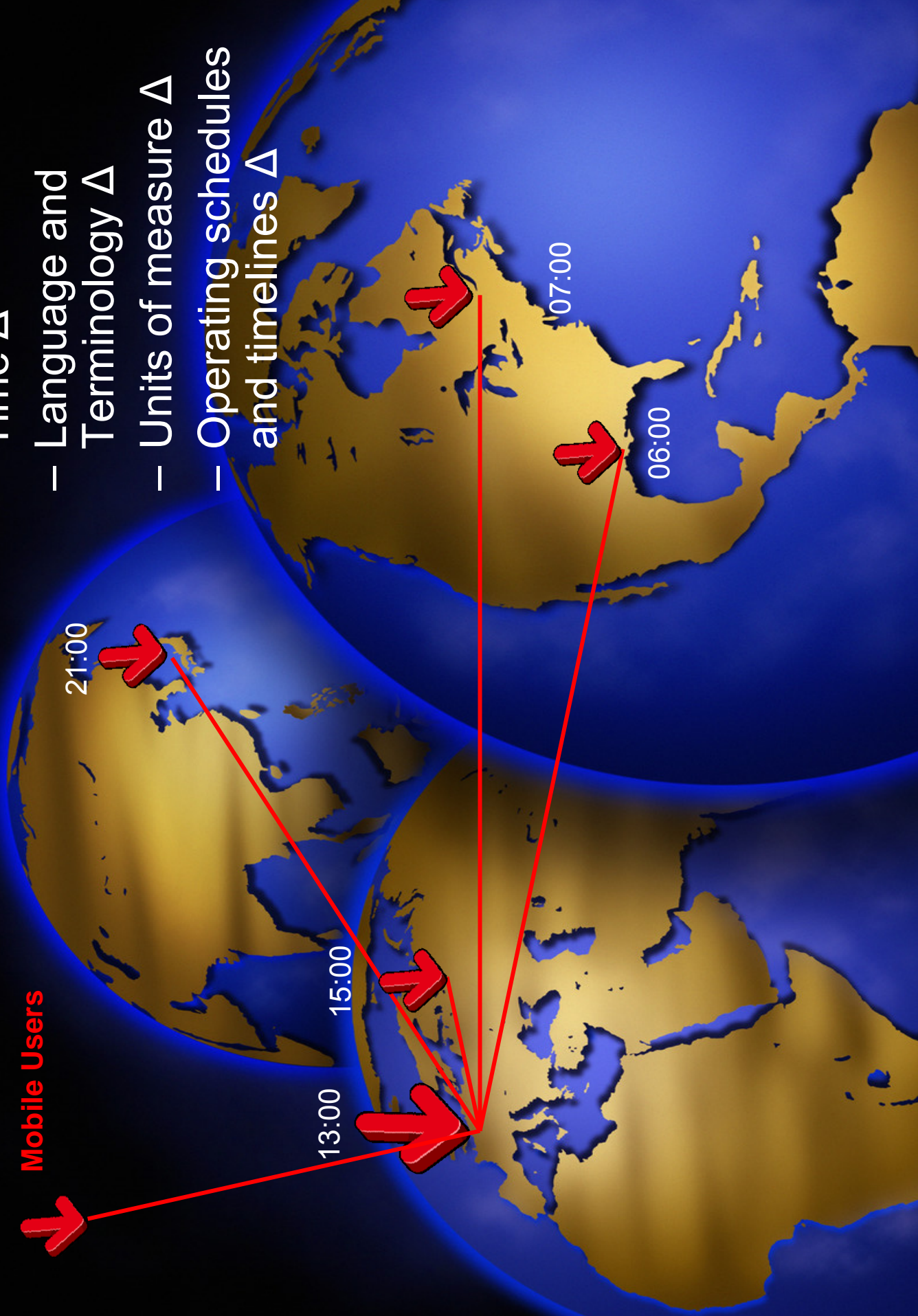
21:00



07:00



06:00



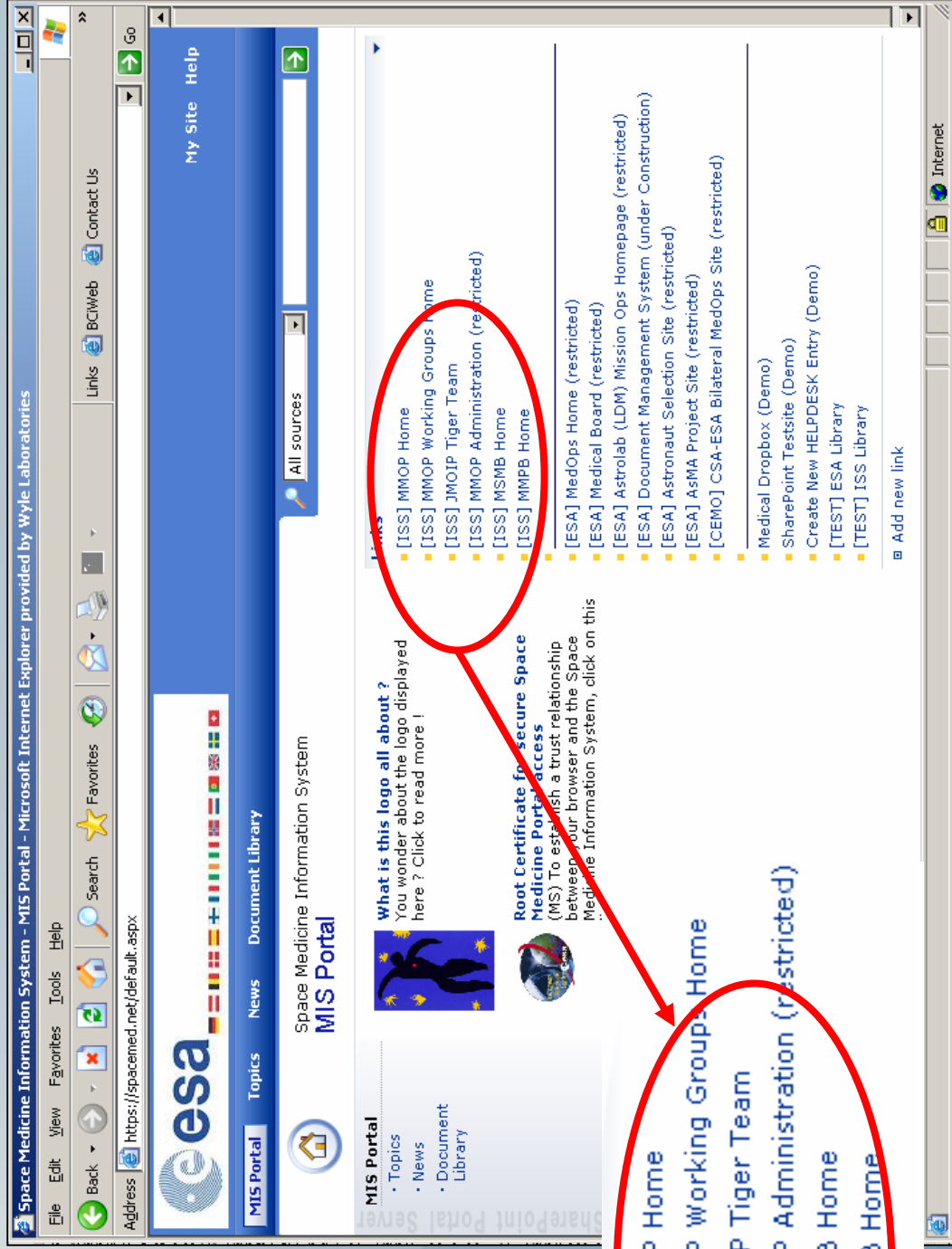
# Portal Purpose

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



# ISS Medical Portal Snapshot





# 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

# Document Library

Up to Space Medicine Information System

Home Documents and Lists Create Site Settings Help

MMOP Shared Documents

Select a View  
 All Documents  
 Explorer View  
 Approve/reject Items  
 My submissions

Actions  
 Add to My Links  
 Alert me  
 Export to spreadsheet  
 Modify settings and columns

document with the team by adding it to this document library.

New Document | Upload Document | New Folder | Filter | Edit in Datasheet

Type	Name	Checked Out To
Folder	Documents in Work	
Folder	MMOP Top Level Documents	
Folder	Presentations	
Folder	Related Documentation	
Folder	Working Group Documents	

- 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

MMOP

## My Alerts on this Site

Use this page to manage the list of libraries, files, lists, and items for which you receive alerts. Click the name of an alert to edit its settings. [More information on alerts.](#)

[Add Alert](#) | [X Delete Selected Alerts](#)

Name of List: Item	Send Alerts About
<b>Frequency: Immediate</b>	
<input type="checkbox"/> SMOT Minutes: All items	Added items
<input type="checkbox"/> Events Planner: All items	All changes

- 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

Use this page to add new users, remove users from all site groups, or assign users to site groups. The following users have been added to the list.

[Add Users](#) | [Remove Selected Users](#) | [Edit Site Groups of Selected Users](#)

<input type="checkbox"/>	<b>Select All</b>			
		Users	User Name	Site Groups
<input type="checkbox"/>		Ashot Sargsyan	MIS\ashot_sargsyan	MMOP Support
<input type="checkbox"/>		Barbara Ackles	MIS\barbara_ackles	MMOP Support
<input type="checkbox"/>		Beate Fischer	MIS\beate_fischer	MMOP Support
<input type="checkbox"/>		Casey Pruett	MIS\casey_pruett	MMOP Support
<input type="checkbox"/>		Cheri Armstrong	MIS\cheri_armstrong	MMOP Support
<input type="checkbox"/>		Chris Smith	MIS\chris_smith	MMOP Support
<input type="checkbox"/>		Deihiem Afchine	MIS\deihiem_afchine	MMOP Support
<input type="checkbox"/>		Filippo Castrucci	MIS\filippo_castrucci	MMOP Members
<input type="checkbox"/>		Frits de Jong	MIS\frits_de_jong	MMOP GSRC Admin, MMOP Support
<input type="checkbox"/>		Gary Gray	MIS\gary_gray	MMOP Members
<input type="checkbox"/>		Genie Bopp	MIS\genie_bopp	Contributor
<input type="checkbox"/>		Jean Marc Comtois	MIS\jean_marc_comtois	MMOP Members
<input type="checkbox"/>		Jeannette Darcy	MIS\jeannette_darcy	MMOP Working Groups
<input type="checkbox"/>		Kathy Holmes	MIS\kathy_holmes	MMOP Support
<input type="checkbox"/>		Kathy Johnson	MIS\kathy_johnson	MMOP Working Groups

- **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)

Up to MMOP

Home Help

Change Request Processing for Generic Ground Rules & Constraints

Home GGRC Documents Modify This Workspace

**Information**

Information - Use this list to insert custom text into your meeting.

**Dear MMOP Members,**

Please see below the current CRs, that were sent to us by the ExPCP for review and disposition. Please review them and provide your **Agency disposition** and, where appropriate, add notes. Due date is **August 17, 2004**, for discussion during the next MMOP Videoconference. Thank you,

*Frits de Jong*

[Edit text](#)

**List and Status of Change Requests**

[New Item](#) | [Filter](#)

CR ID	Doc Reference	MASA Disposition	FSA Disposition	JAXA Disposition	ESA Disposition	CSA Disposition
<b>MMOP Disposition : No Disposition (3)</b>						
#W22	Chapter 3.7.6	No Disposition	No Disposition	No Disposition	APPROVED	No Disposition
#W24	Chapter 3.8.2	No Disposition	No Disposition	No Disposition	No Disposition	No Disposition
#W25	Chapter 3.8.2	No Disposition	No Disposition	No Disposition	No Disposition	No Disposition

Aug. 5, 2004

- **Document Work-Spaces**
  - Ground Rules & Constraints (operational)
  - MED, MORD, JMOIP (in preparation)

# Collaborative Tools (2)

The screenshot displays the 'MMOP Meeting Workspace' interface. At the top, it shows the meeting title 'MMOP Meeting Workspace' and details: 'Subject: MMOP #59', 'Date: 07.06.2004 (01:00) - 10.06.2004 (10:00)', and 'Location: Houston, USRA building'. Navigation tabs include 'Home', 'Action Tracker', and 'Pictures'. The main content area is divided into several sections:

- Objectives:** A list of three items: '1. Final MORD rev C, vers. 5 review', '2. Visiting Vehicle Scheduling Constraints', and '3. Extended Mission Duration'. There is an 'Add new item' button.
- Attendees:** A table with columns for 'Name' and 'Edit Response'. The name 'Volker Damann' is listed with a 'None' response.
- Agenda:** A table with columns for 'Subject', 'Owner', and 'Time'. The subject 'Final Agenda MMOP #59 face-to-face' is listed.
- Document Library:** A table with columns for 'Type Name', 'Modified By', and 'Status'. It lists 'Day 1' through 'Day 4' and 'Minutes, Motions, Actions', all modified by 'Volker Damann'.
- Decisions / Minutes:** A table with columns for 'Decision', 'Contact', and 'Status'. It lists 'Decision', 'Motions & Actions', 'Draft Minutes Rev 1 MMOP #59', and 'FINAL Minutes', with statuses ranging from 'Final' to 'Proposed'.

At the bottom, there is a date selection menu for 'Meeting Series' with a list of dates from 16.06.2003 to 15.11.2004, and 'Previous' and 'Next' navigation buttons.

- Meeting Work-Spaces
  - MMOP Meetings and Telecons (operational)
  - WG sites (operational)

# Collaborative Tools (3)

Home Help Up to MMOP

MMOP Meeting Workspace  
 Subject: MMOP #59  
 Date: 07.06.2004 (01:00) - 10.06.2004 (10:00) (GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna <<  
 Location: Houston, USRA building  
 Go to Events

Home Action Tracker Pictures Modify This Workspace

MMOP Action Tracker  
 New Item | Filter | All Meetings

Edit Item	Category	Title	Start Date	Due Date	Status	Actionee
	5905.0 (021) Flight Rules	Review "Medical Authority" Flight Rule Vol. C	10.06.2004	20.07.2004	OPEN	
	5906.0 (021) Flight Rules	Review "Medical Authority" Flight Rule Vol. B	10.06.2004	20.07.2004	OPEN	
	5907.0 (021) Flight Rules	Review O2 Flight Rule	10.06.2004	20.07.2004	OPEN	
	5909.0 (022) Ground Rules	Review new GGR&C Part 1, Section 3.2.4 wording	10.06.2004	20.07.2004	OPEN	
	5910.0 (130) Radiation Health	CSA Biodosimetry Proposal	10.06.2004		OPEN	
	5911.0 (160) Countermeasures	Discussion and Implementation of Penguin suit	10.06.2004	15.11.2004	OPEN	

Select a date from the list below:  
 16.06.2003  
 16.06.2003  
 16.09.2003  
 01.12.2003  
 27.01.2004  
 17.02.2004  
 16.03.2004  
 27.04.2004  
 18.05.2004  
 07.06.2004  
 20.07.2004  
 17.08.2004  
 21.09.2004  
 19.10.2004  
 15.11.2004  
 Previous Next

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



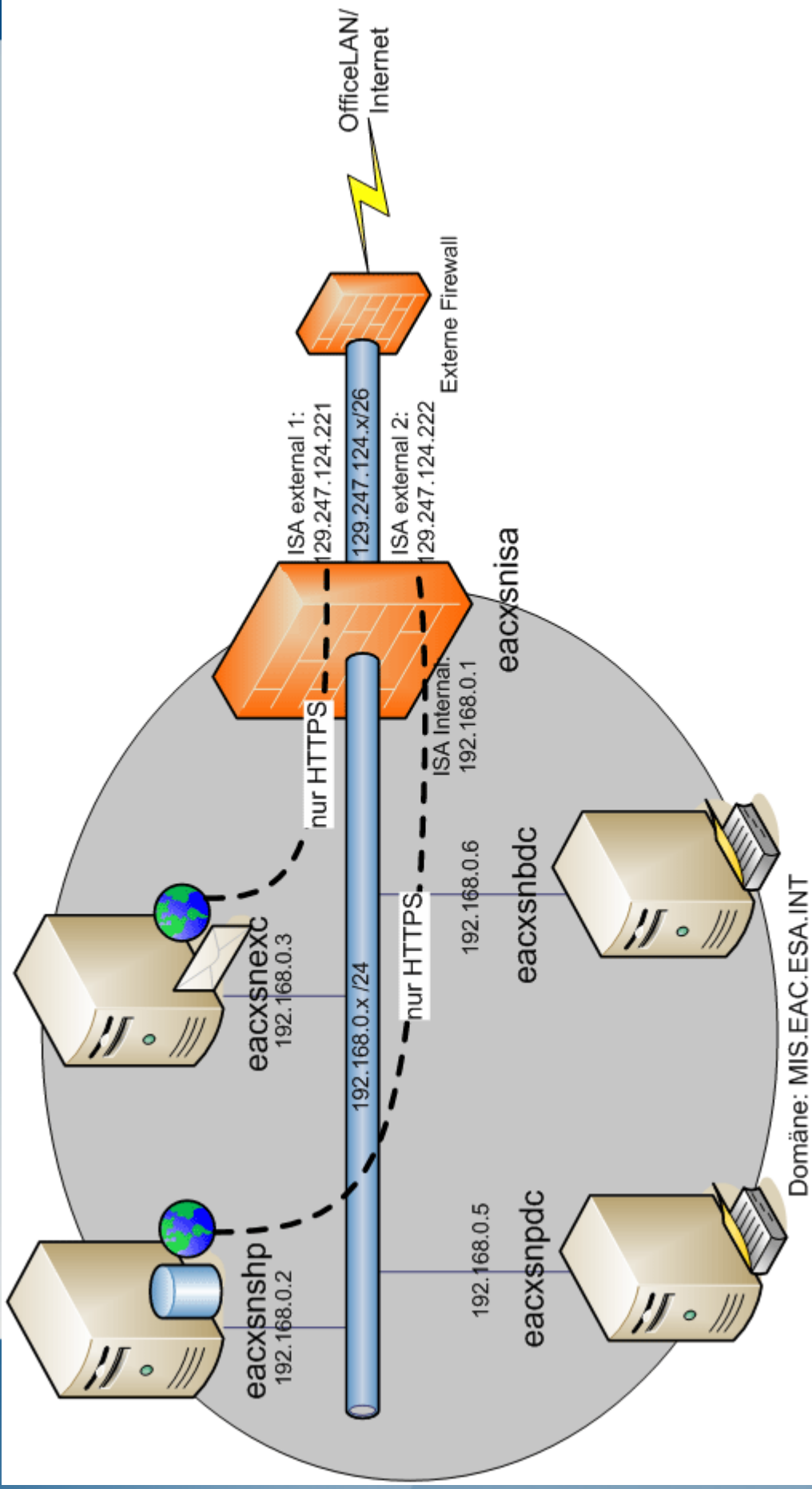
# Collaborative Tools (4)

The screenshot displays a web application interface for MMOP Working Groups. The top navigation bar includes links for Home, Documents and Lists, Create, Site Settings, and Help. Below the navigation bar, there is a 'Home' button and a 'Logo' section. The main content area is titled 'MMOP Working Groups' and 'Main Page for the MMOP WGs'. A table titled 'SMOT Minutes' is shown, with columns for Type, Name, and Modified. The table contains three rows of data for the years 2004, 2003, and 2002.

Type	Name	Modified
Folder	2004	02.08.2004 16:31
Folder	2003	02.08.2004 16:32
Folder	2002	02.08.2004 16:34

- **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)

eacxsnbdc  
192.168.0.5

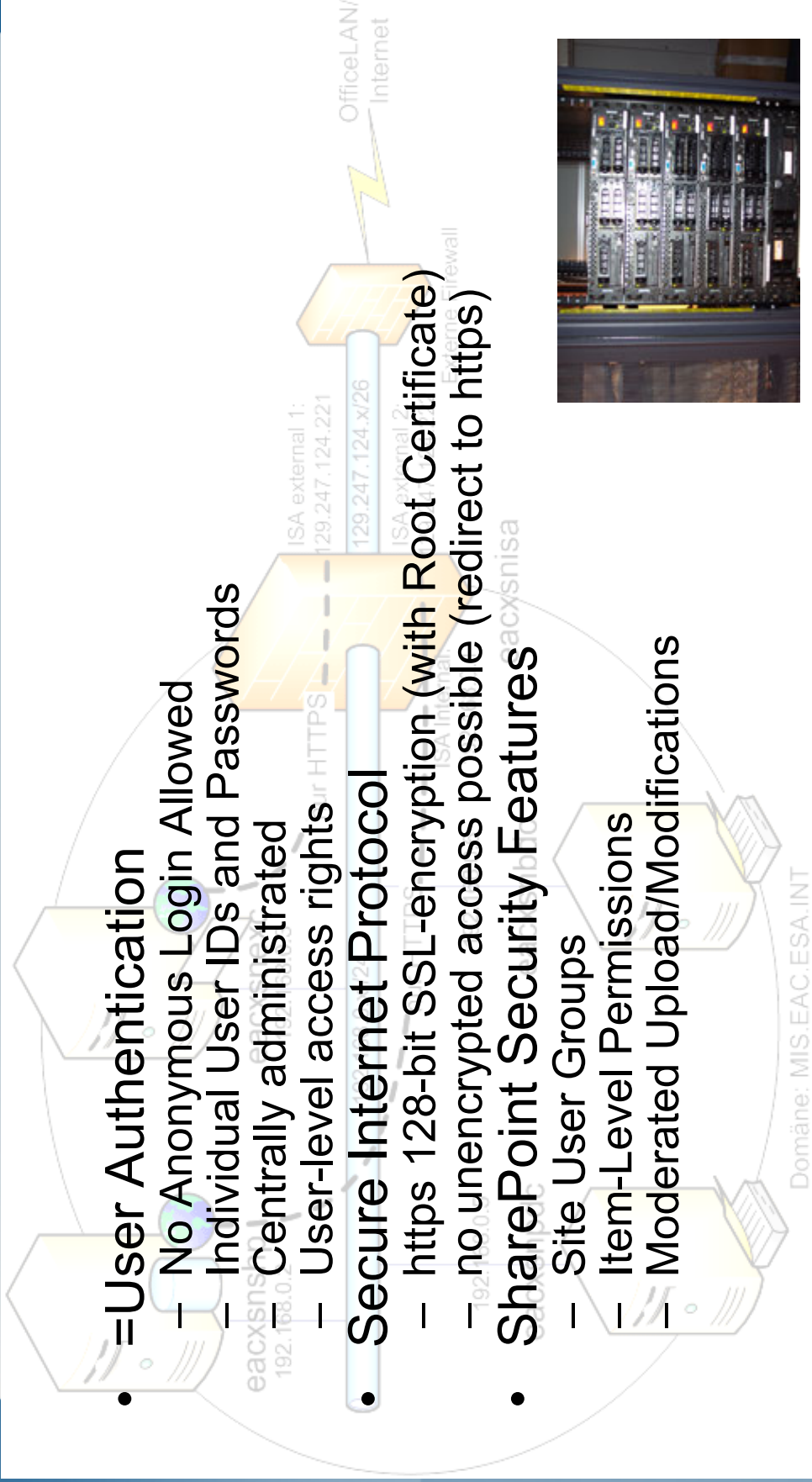
- ISA Server (Microsoft Internet Security and Acceleration Server)

- 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 or HTTPS
- 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)

# Conclusion

# **Thank you!**

**E-mail your questions and suggestions to:**