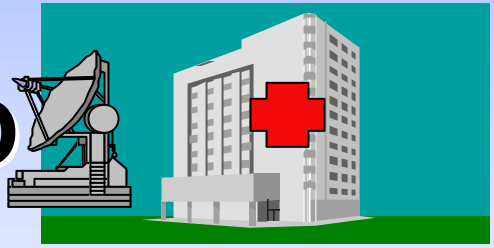
North Atlantic Treaty Organisation

Report to ITU-T Telemedicine Workshop from the Telemedicine Panel of COMEDS/NATO



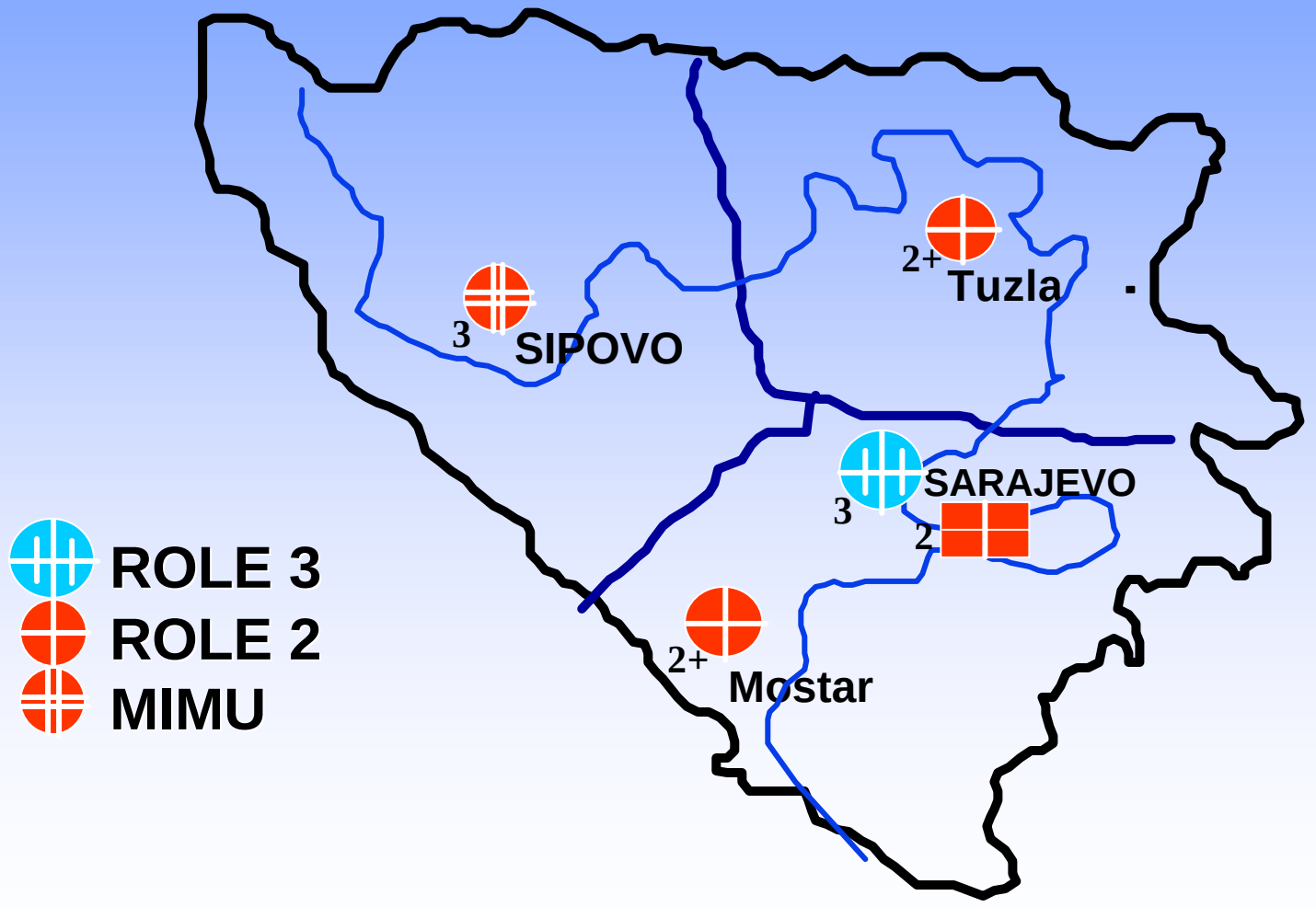
David M. Lam, MD
Secretary, TMED Panel
Geneva
23 May 2003

NATO Telemedicine Panel Purpose

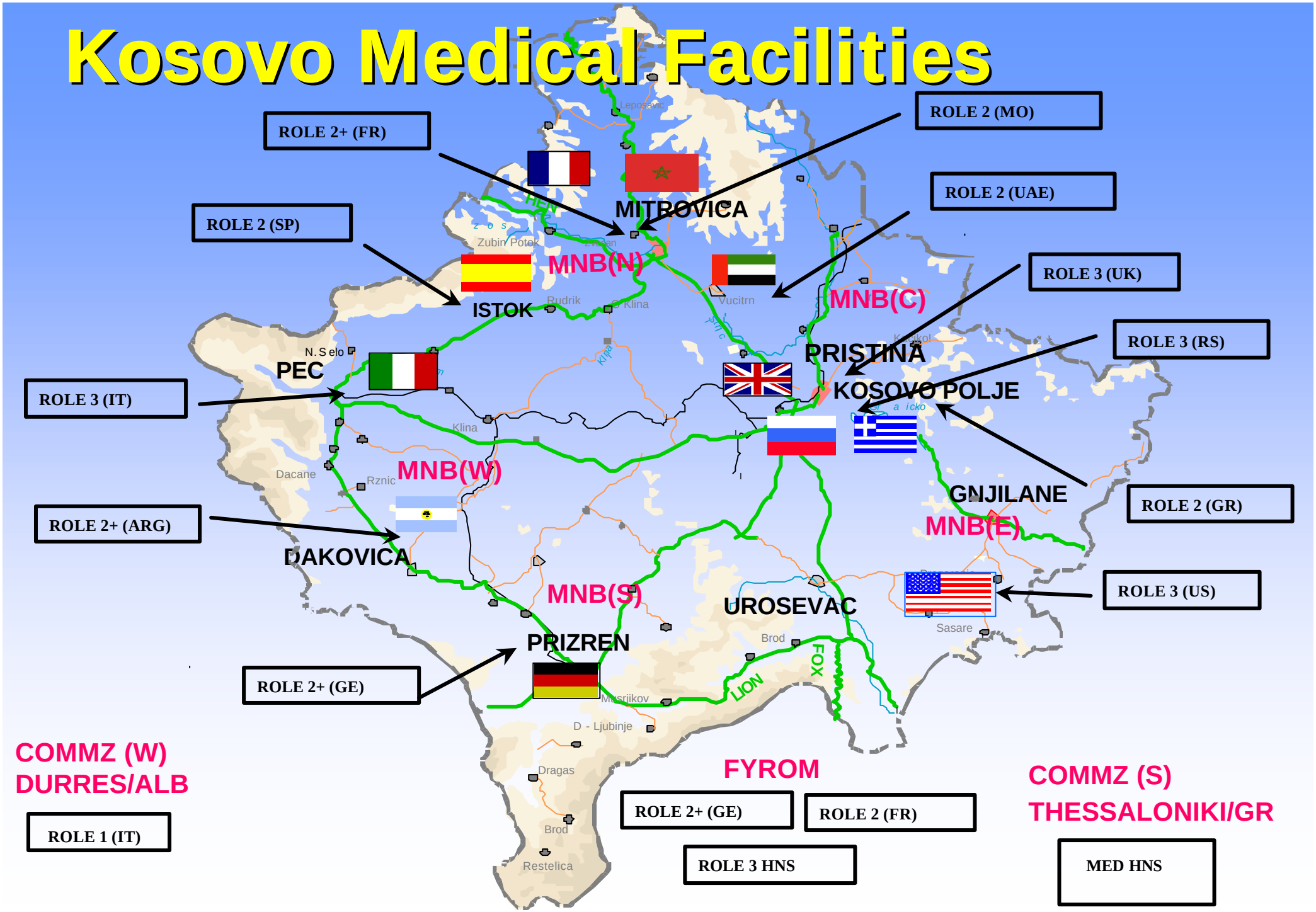
To Develop Telemedicine Interoperability Standards

For Use Among Deployed NATO Forces

Medical Lay-Down in Bosnia



Kosovo Medical Facilities



NATO Telemedicine Panel Background

- Jun 00 (Brussels) - General Medical Working Group Telemedicine Panel established
  - Tasked to develop a Telemedicine Policy paper & achieve NATO endorsement
  - Nov 00 (Washington) – Policy paper developed
  - Apr 01 (Brussels) - Policy panel finalized
  - Jun 01 (Brussels) - Telemedicine Panel formed
  - Decision Made to Integrate TMED Panel into COMEDS MIMS WG
  - Sep 01 (Cologne) - Developed Terms of Reference
  - Decided to concentrate on Teleconsultation
  - Established 8 subcommittees to develop topical issues
  - Apr 02 (Luxembourg) - Discuss the way ahead, in light of upcoming transfer to the MIMS WG
  - Evaluate subcommittee work

Background-2

- Oct 02 (Victoria, BC)- Joint meeting with MIMS WG. Identification of new tasks, beginning of submission of TMED requirements for insertion into overall Technical Architecture. Identification of standards required, and incorporation into new draft document.

- Mar 03 (Gosport, UK)- Continued work on draft standardisation document. Identification of additional requirements to provide to MIMS. Discussion of legal issues and quality assurance issues.

- Sep 03 (Oslo, Norway)

NATO Telemedicine Panel Approach

1. Collect and analyze prior Telemedicine concepts developed from other organizations
2. Identify individual NATO member nations' concepts for deployable telemedicine systems
3. Establish & promote a NATO Telemedicine "Vision" for future care across the spectrum of military conflict

NATO Telemedicine Panel Leverage

We plan to leverage the Telemedicine Interoperability issues already being pursued by the:

- NATO nations
- G-8 nations
- Government Telemedicine Organizations
- National Telemedicine Associations (Technology Special Interest Groups)
- Industry
- International Standards Organization

Telemedicine Interoperability: An International Organizational Approach

International Standards Organization (ISO)

- **Currently 5 medical working groups:**
  - **Medical Records - Australia**
  - **Messaging - USA**
  - **Terminology - United Kingdom**
  - **Medical Smart Cards - Germany**
  - **Patient Confidentiality - Sweden**
- **Emerging international standards…**
  - **e.g. X.12**

Telemedicine Panel Objectives

- Develop a standardization strategy for the use of Teleconsultation as a tool to support NATO military operations
- Identify the clinical processes which would be supported by teleconsultation and the benefits to NATO across the spectrum of NATO operations (Roles/Echelons 1-4).
- Identify the baseline and target NATO communications and security architectures that would support teleconsultation (in association with the MIMS WG)
- Identify the “Gap Analysis” of communications across the Roles or Echelons of Care.

Telemedicine Panel Objectives - continued

- Identify existing NATO Standardization Documents that may be relevant to the production of a future Telemedicine Standardization Document.
- Identify associated regulatory & legal issues that may impact on multi-national teleconsultation.
- Identify options, and associated costs, to provide a teleconsultation capability in an operational environment
- Assess the clinical need for teleconsultation in Operations & consider a “Proof of Concept” project evaluating the use of telecommunication devices among Theater Medical Facilities and Medical Staffs.

Telemedicine Panel Accomplishments

- 8 meetings of the Telemedicine Panel have taken place.
- Input from BG Leo Klein, ACE Medical Advisor, has been received
- Teleconsultation – a subcategory of Telemedicine – was accepted as the focus of the Telemedicine Panel
- Teleconsultation Policy paper has been submitted for comment from various groups and NATO nations as AJP
- STANAG on TMED drafted
- Teleconsultation modality requirements within a given Role/Echelon of Care have been identified
- Subgroups have been formed to address specific topics of concern
- We are now an integral part of the COMEDS Medical Information Management System (MIMS) WG

NATO Telemedicine Panel Future Directions

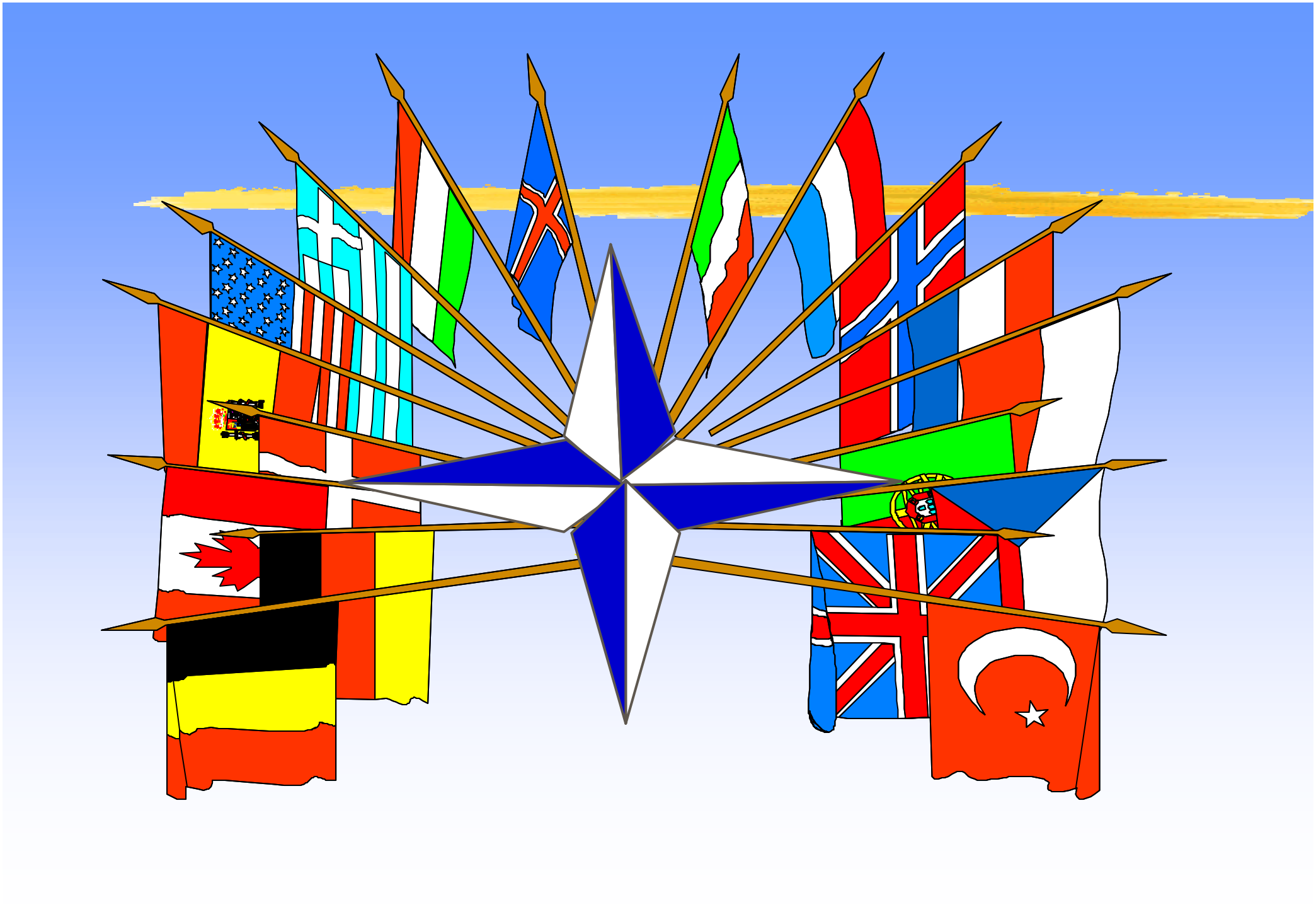
- Identify current NATO Standardization Documents which will affect a TMED Standardization Document
- Insert the Telemedicine Policy Paper into NATO Policy & Doctrine as an AMedP or STANAG after full review from the MIMS WG and MMSOP WG, taking into account national comments
- Develop a NATO technical STANAG on Telemedicine (in coordination with the MIMS WG)
- Ensure TMED requirements are provided to NATO for inclusion in the NATO IT architecture

Future Issues

- The need for identification of common clinical process architectures (high level business architectures) between TMED Panel and MIMS WG;
- Development and submission of requirements for a common Technical/communications architecture, to include security/patient privacy considerations;
- Examination of various legal issues in the multinational environment;
- Our demonstration project which is planned to look at reproducibility of results in a multinational teleconsultation environment.

Final Comments

- This is a long-term project. We estimate completion in many years, and are not going to finish in the next year. An incremental, phased in approach is the only practical way to go about it.

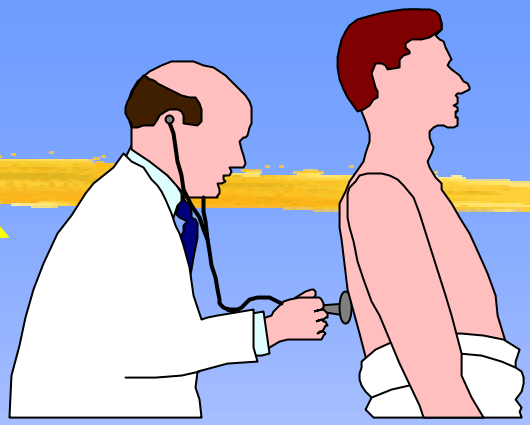


BACKUP SLIDES

Spectrum of Tele-consultation capabilities

1. Two way voice – telephone or radio.
2. Store-and-forward – the ability to exchange medical knowledge asynchronously using:
   a. Facsimile (FAX)
   b. E-mail text only
   c. Email with small size still image attachments
   d. Email with data & large size image attachments in compressed form, such as motion picture (MPEG), digital pathology (JPEG) or digital radiography (DICOM)
3. Real-time Video-teleconferencing (VTC)
4. Web-based education & teaching systems utilizing advanced distributed learning concepts & technologies (streaming video & multimedia education formats)

A Strategic Direction



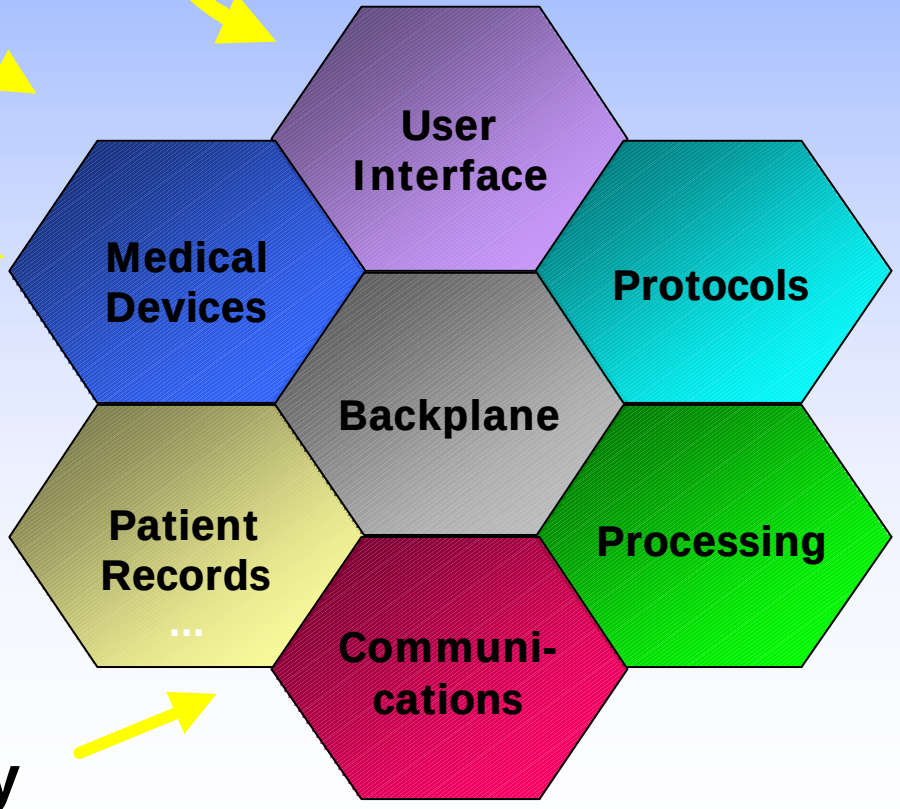
Informatics, Robotics, Autonomous systems

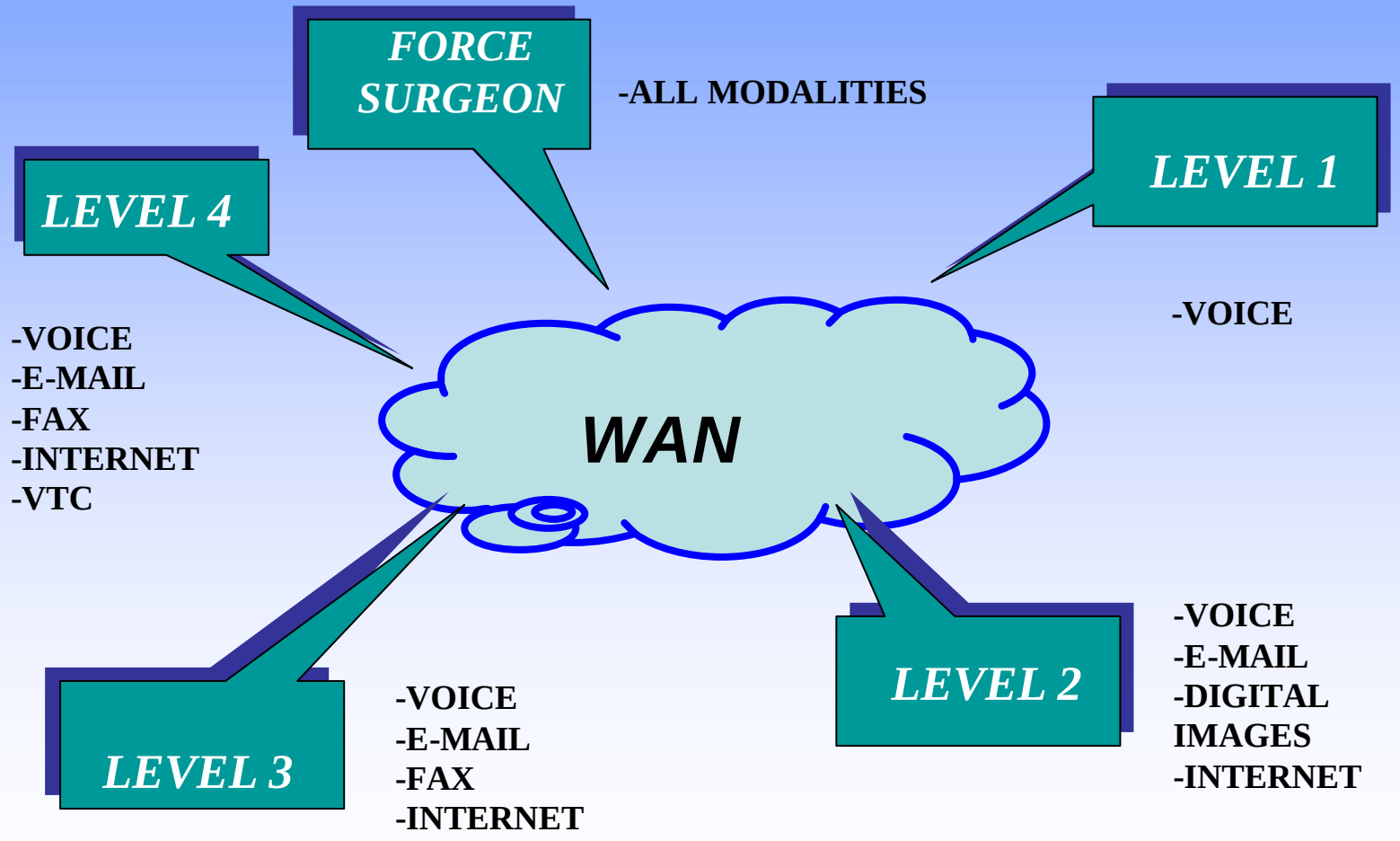
Store & Forward, RealtimeTeleconsultation

Virtual systems & Telementoring

Practice Guidelines, Knowledge bases & Reference Materials

Security




FORCE SURGEON
-ALL MODALITIES
LEVEL 1
-VOICE
LEVEL 4
-VOICE
-E-MAIL
-FAX
-INTERNET
-VTC
WAN
LEVEL 2
-VOICE
-E-MAIL
-DIGITAL IMAGES
-INTERNET
LEVEL 3
-VOICE
-E-MAIL
-FAX
-INTERNET