T4MOD: Telemedicine for the French, German, Italian and Spanish Ministries of Defence

ARTES Applications Workshop
5th-6th April 2011

Major René Mathieu, Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Clear User Needs...

Why do we need to bring *expertise* to medical field operations?

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Because it is a general fact that medical expertise is becoming rare in general in different European Countries, including Germany, France, Italy and Spain. This expertise shortage is not only affecting civilians but also military hospitals. Some medical specialties are even more affected than others (e.g. neurosurgery, radiology).

Right now we only have 12 Neurosurgeons for the whole German Federal Armed Forces.

Why do we need to bring expertise to medical field operations?
German MoD scenario: in case of a Neurotrauma - who will perform the operation onsite?
A partial solution: Neurotrauma Course – since 1999

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
A partial solution: Neurotrauma Course – since 1999

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
A complementary solution: Telemedicine

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Telemedicine

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
The future of Telemedicine

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Tele-assistance

Providing a audio/video-conference directly into the OR

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
T4MOD Project Objectives

1. Provide a solution for the benefit of military personnel deployed abroad in emergency relief, humanitarian crises and peace keeping missions;

2. Leverage collaboration among public institutions within their national contexts and among the four representative member states;

3. Enable medical specialists to assist the remote site in case of a medical emergency or during a planned consult, when required;

4. Provide an easy-to-use solution able to be operated by medical and non-medical personnel;

5. Provide a reliable cost effective solution requiring minimal training, installation, maintenance and running costs;

6. Demonstrate the adequacy of the solution (system and services) with the MoD Health Services in their operational scenarios (characterised by geographical isolation, harsh environment and lack of local medical specialists).

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Participants

France
(speciality: Tele-Assisted Echography)

Germany
(speciality: Tele-Assisted Neurosurgery)

Italy
(speciality: Multi-modal Medical Imaging for Emergency)

Spain
(speciality: Tele-Assisted Traumasurgery and Tele-Echography)

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Challenges

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
High Level Elements

14

User Scenarios and Requirements

System Integration and Qualification

Consolidation of Sustainability and Evaluation

European and Remote Pilot

MoDs

ESA + National Space Ag./Inst.

Industry

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
Key Elements

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
2 Space Assets: interoperable IP overlay satellite network + Manned Spaceflight technology (Robotized Tele-Echography)

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
The Day after Tomorrow?

The next step could be telerobotic surgery...

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
The Day after “the day after tomorrow”?

We clone Neurosurgeons!

Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm
T4MOD: Telemedicine for the French, German, Italian and Spanish Ministries of Defence

Thank you!

ReneMathieu@BUNDESWEHR.ORG

Major René Mathieu, Dept. of Neurosurgery, Federal Armed Forces Hospital, Ulm