

# Medical Applications Secure Data Access



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## Secure Access to Medical Records from Anywhere



In emergency, it can save your life... A mobile response team or a passing health professional needs to establish a secure authenticated communication channel with the main repository of medical records within seconds, using their mobile devices (laptop, PDA, ...)

### **UCL Federated Health Record Server**

- Can integrate electronic health information from diverse clinical systems
- Has influenced and conforms to European CEN standards for
- electronic health records
- Web and WAP applications provide secure on-line access to: alerts, allergies, medical conditions and medication

### **UMM DICOM Images Viewer**

- DICOM a specialized format for storing medical images and textual data
- The viewer allows doctors to access the NetRAAD clinical database system (used e.g. in John Paul II Hospital in Krakow) from mobile devices
- User interface suited to PDA properties (but also other display sizes)
- Access is possible from both inside and outside the hospital using WLAN and GPRS/UMTS technologies

### IPv6 and IPsec

The design of new simple and stable Network Architectures is allowed with IPv6. Avoiding NAT, IPv6 permits end-to-end communications enabling new services based on multimedia and wireless, possibly secured by IPsec which is mandatory in IPv6. Besides IPv6 protects privacy with its local scope address and multi-homing capabilities. With IPv6 we are able to deploy the IPsec model.

#### **Road Warrior**

In its generic form, the Road Warrior is a VPN extended to mobile users. While fixed IPsec gateways are using their IP addresses to establish and identify secure communication channels between them, for the integration of mobile users this concept has to be enhanced, as mobile users dynamically change their IP addresses. Therefore the Road Warrior uses its fixed Fully Qualified Domain Name (FQDN) for authentication instead of its IP address. 6WIND and IABG provide products for supporting mobile users in a VPN.



### **Remote access** is needed from any conceivable location

### of a medical emergency, e.g.

- the roadside
  - a shopping centre
  - a patient's home

### Medical data is highly sensitive:

- it must be encrypted from end-to-end to comply with European data protection directives
- only requests from authenticated mobile devices are allowed
- only authorised users must be able to view patient health records

### **IPsec properties:**

- Based on IPv6
- Tunnel mode
- Automatic key management (IKE) 3DES (ESP)
- MD5, SHA-1 (AH)
- X509v3 Certificates

### IABG Road Warrior Client:

- Based on Linux / FreeS/WAN 1.98bDownload free trial code from
- www.ipv6.iabg.de/download
- Support of IEEE 802.11bCode for IPsec gateway also available

### 6WINDGate IPsec Gateway:

6WIND Access Router including IPv4/v6 Transition (NAT-PT, DSTM, ISATAP, tunnels)...



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