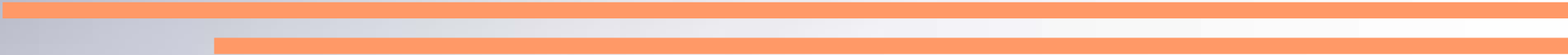


***MEDIMED***

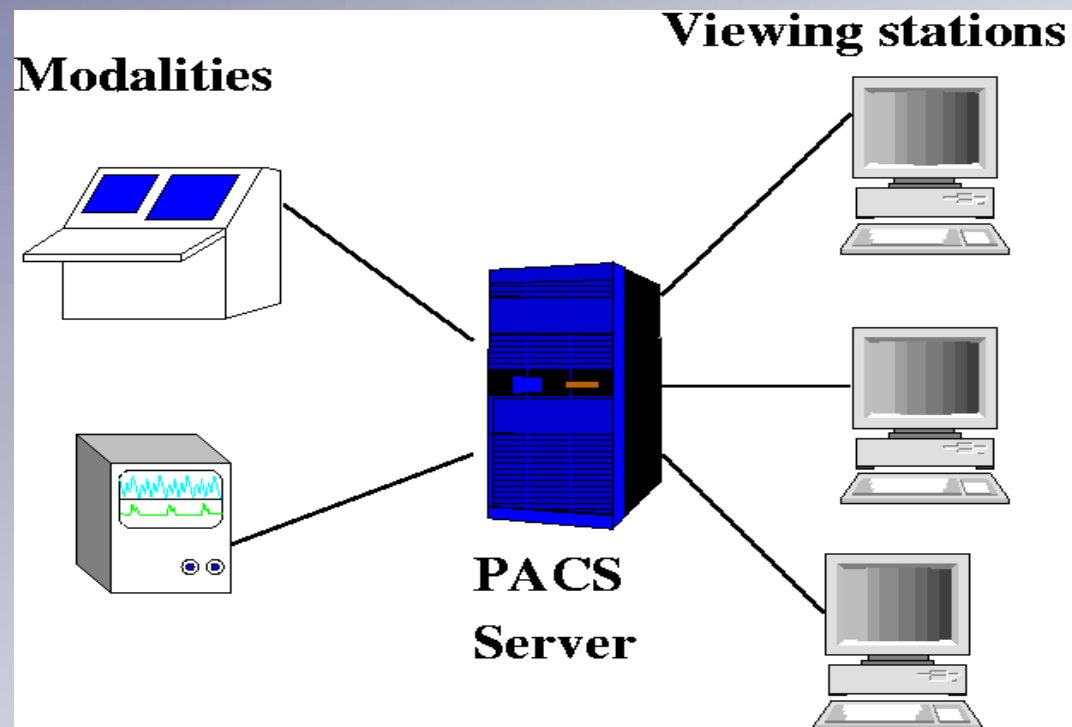


# Agenda

- \* **PACS principles**
  - \* **MEDIMED project**
  - \* **History**
  - \* **Topology and technology**
  - \* **User authentication project**
- 
-

# PACS

.Picture archiving and communications system



# ***MEDIMED***

- .Regional centre for medical multimedia data processing
  - .Group of development project of medicine applications in BAPS
  - .Now connects all main hospitals in Brno to shared PACS system
  - .Hospitals from other cities connecting via IPSEC
- 
-

# ***Goals of MEDIMED***

- Offer PACS system to medicine publics
  - Sharing of medicine picture data and data interchange between hospital's private PACSs
  - Introduction of PACS to medicine specialists
  - Obtaining of material for research and education in medicine
  - Participation on international “computer in medicine” projects
- 
-

# ***BAPS***

- .Brno academic computer network
  - .About 100km of FO cables
  - .About 90 nodes
  - .Academic computer network, now GE
  - .Special applications - MEDIMED
- 
-

# ***CESNET***

- .National research and education network
  - .Connection to all academic cities
  - .GEANT
  - .Support of research projects
- 
-

# ***History of MEDIMED***

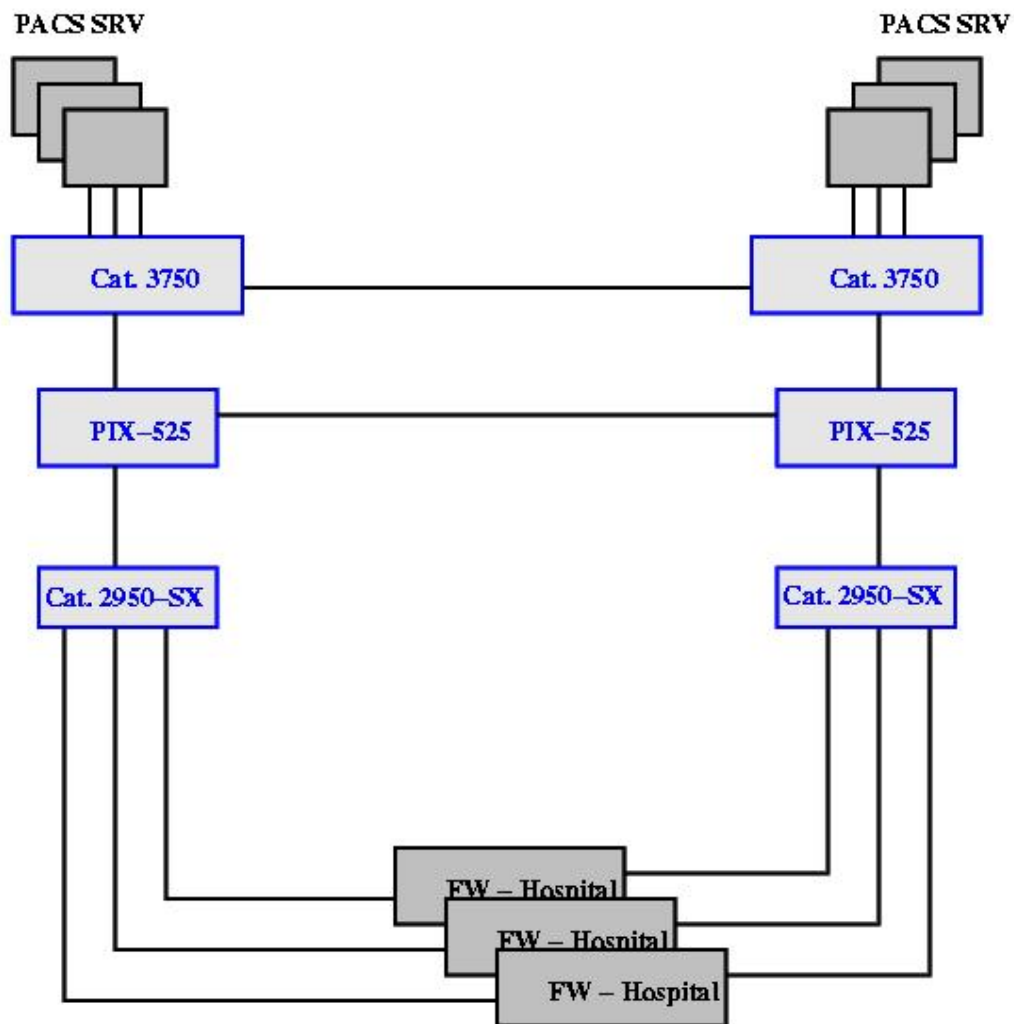
- .1999 – beginning
  - .ATM LANE – STM-1
  - .2001 – dedicated FE over private fiber optics
  - .2003 – start connecting hospitals from outside Brno
  - .2004 – backup PACS server
  - .2005 – PACS users mobility
- 
-

# ***History of MEDIMED***

- **Faculty maternity hospital and Faculty childrens hospital (1999)**
  - **Faculty hospital Svatá Anna (2000)**
  - **Masaryk Memorial Cancer Institute (2001)**
  - **Bakeš hospital (2002)**
  - **Hospital Polní (2002)**
  - **Hospital of Kyjov (2002)**
  - **IKEM Praha (2004)**
  - **Faculty Thomayer hospital (2004)**
  - **Hospital Hodonin**
  - **Hospital Uherske Hradiste**
- 
-

# ***Topology***

- In the beginning single connection between two hospitals and PACS system for dedicated stations
  - Than connecting more hospitals and general viewing stations
  - Currently doubling of critical components
- 
-



# ***Main PACS servers***

## Primary PACS

Location: ICS MU

Disk capacity: 5TB

## Secondary PACS

Location: Faculty of Medicine MU

Disk capacity: 5.5TB

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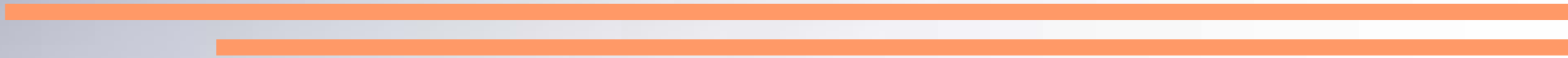
# ***Current PACS usage***

**Number of archived studies: cca 85  
000**

**Total amount of data: cca 3TB**

**Modalities connected: 26**

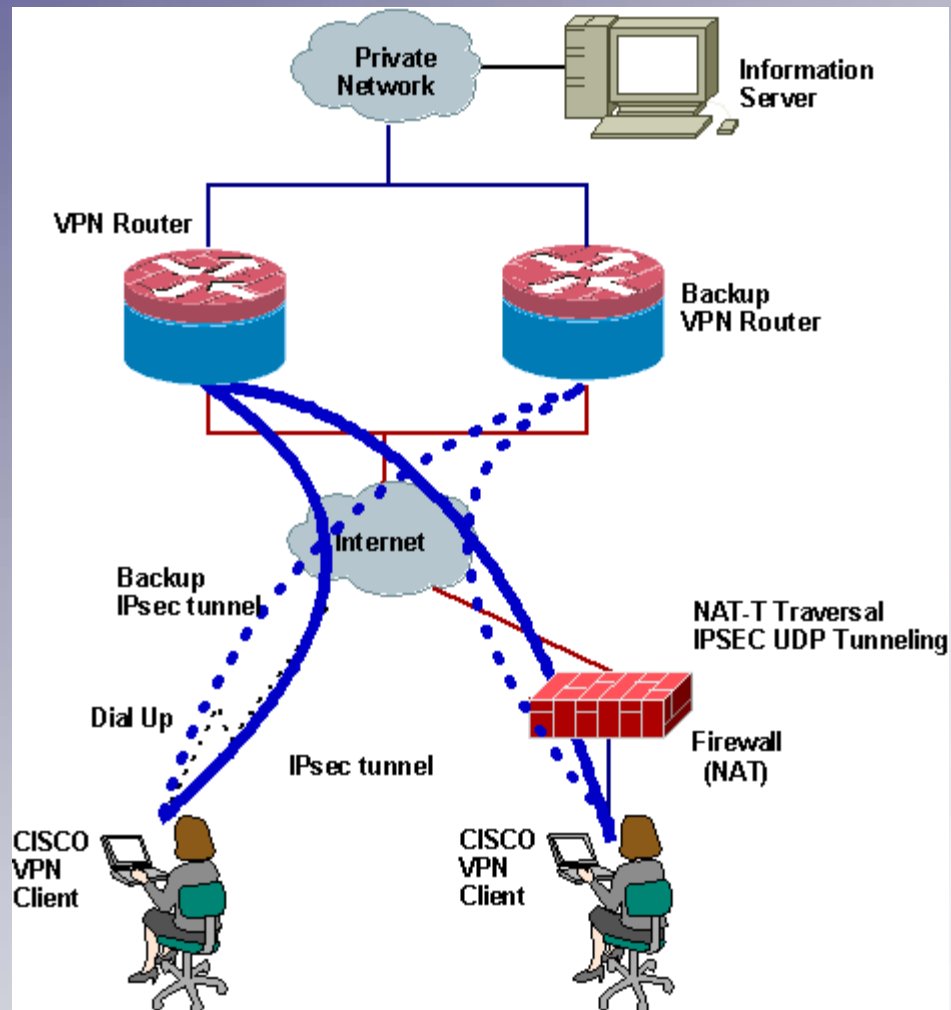
**Viewing stations connected: 60**



# ***PACS users mobility***

- **DICOM limitations**
  - **User identification via IPSEC**
- 
-

# *PACS users mobility*



# ***IPSEC and PKI***

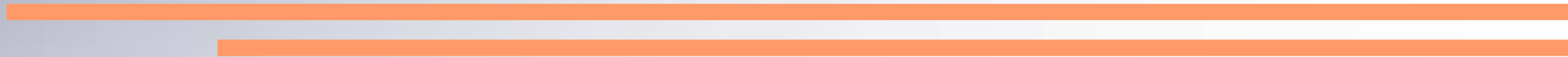
- User digital identity**
  - Identity to IP address mapping**
  - HW storage of private key**
- 
-

# ***Storage of private key***

- **Smart card**
  - **USB dongle**
- 
-

# ***USB dongle***

- Many vendors**
- Encryption vs. Signature**
- Software solution**



**Thank you for your  
attention!**

**Questions?**

