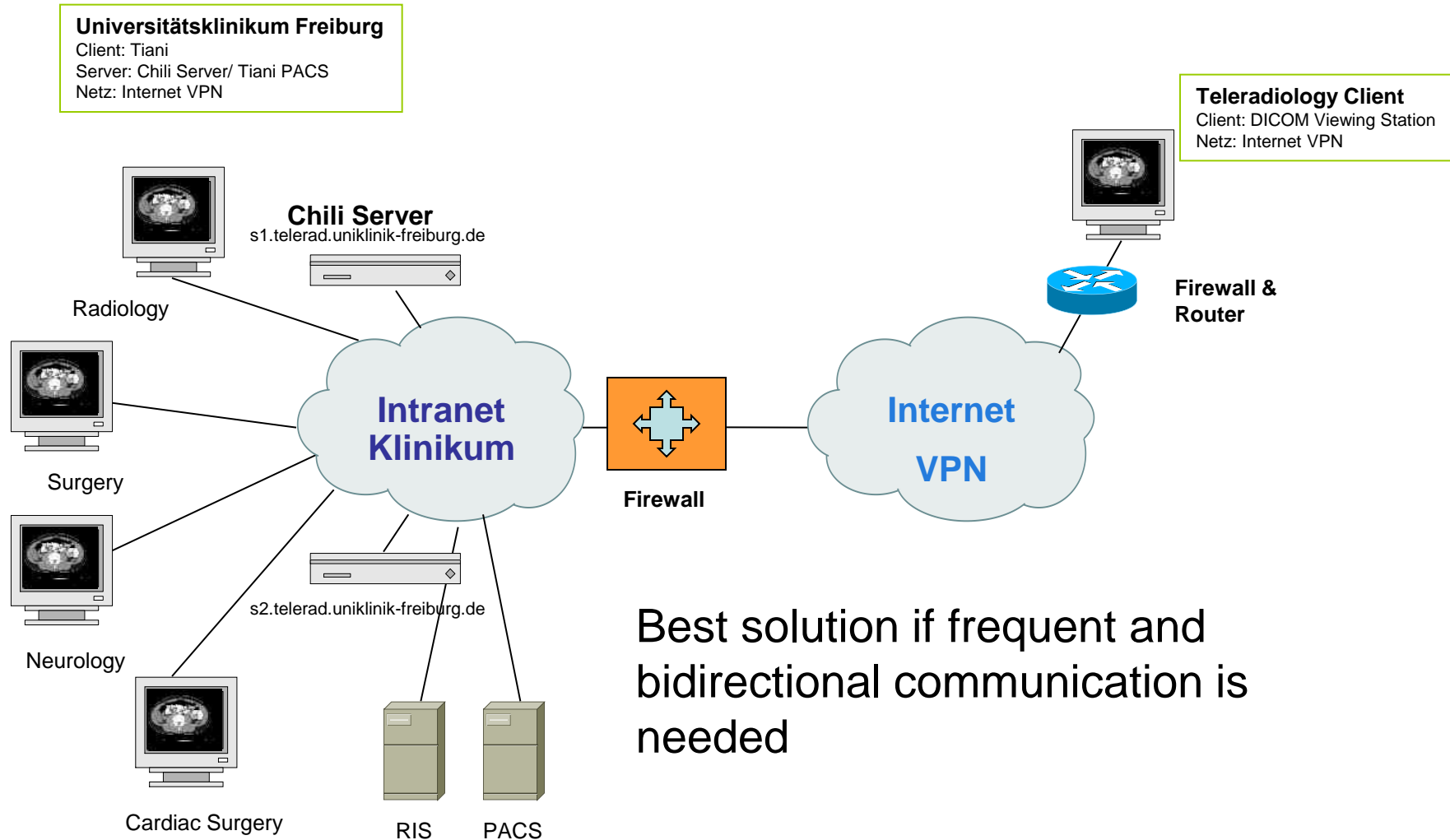


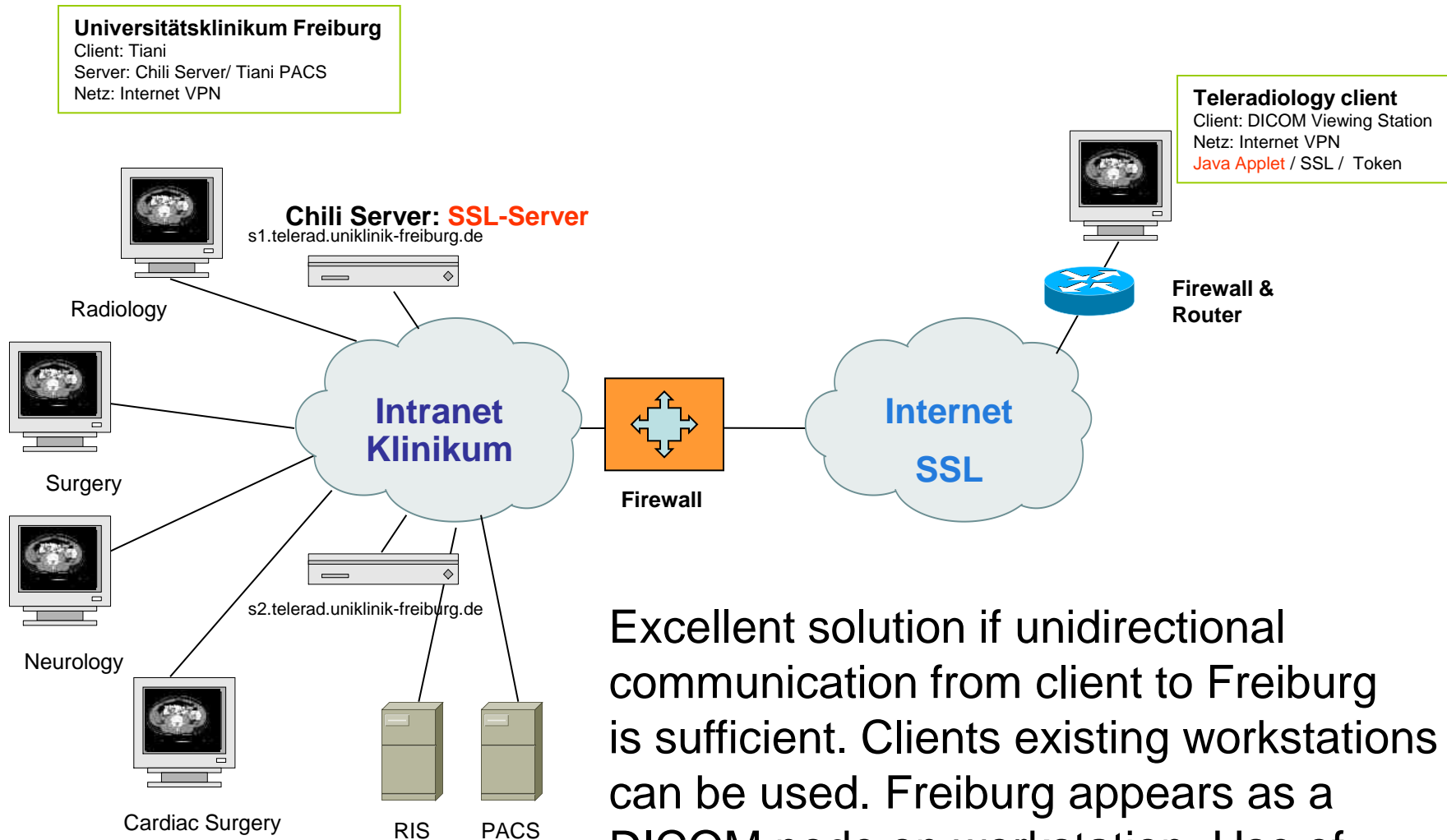
Secure internet based
image transmission:

- DICOM Communication
- DICOM E-Mail (Norm)
- Web-Access

First scenario: DICOM-Communication



Second scenario: SSL-tunnelling

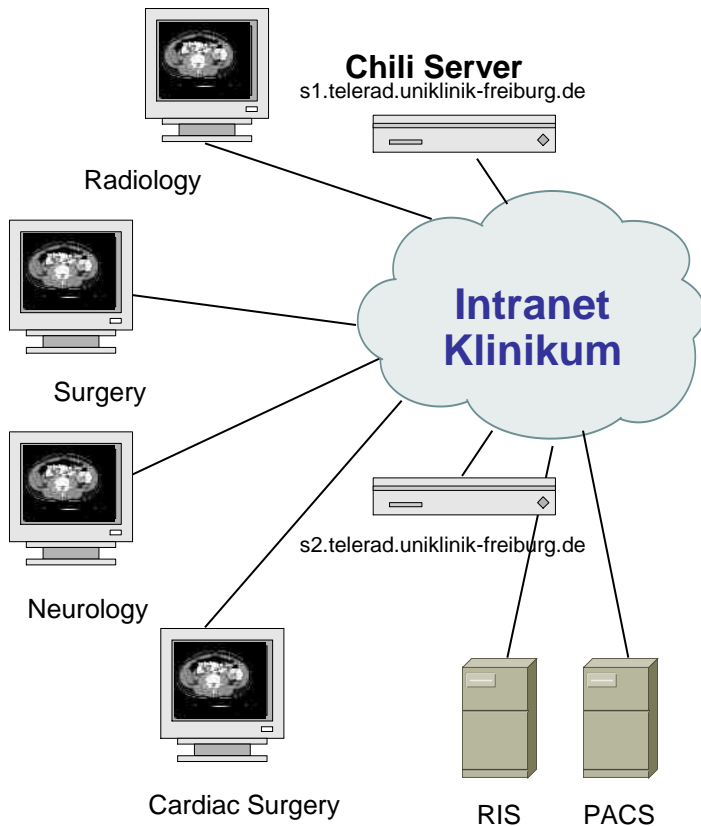


Excellent solution if unidirectional communication from client to Freiburg is sufficient. Clients existing workstations can be used. Freiburg appears as a DICOM node on workstation. Use of hardware generated tokens + PIN enhances Security.

Third scenario: DICOM email

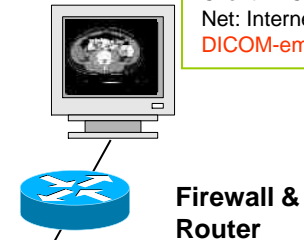
Universitätsklinikum Freiburg

Client: Tiani
Server: Chili Server/ Tiani PACS
Net: Internet VPN



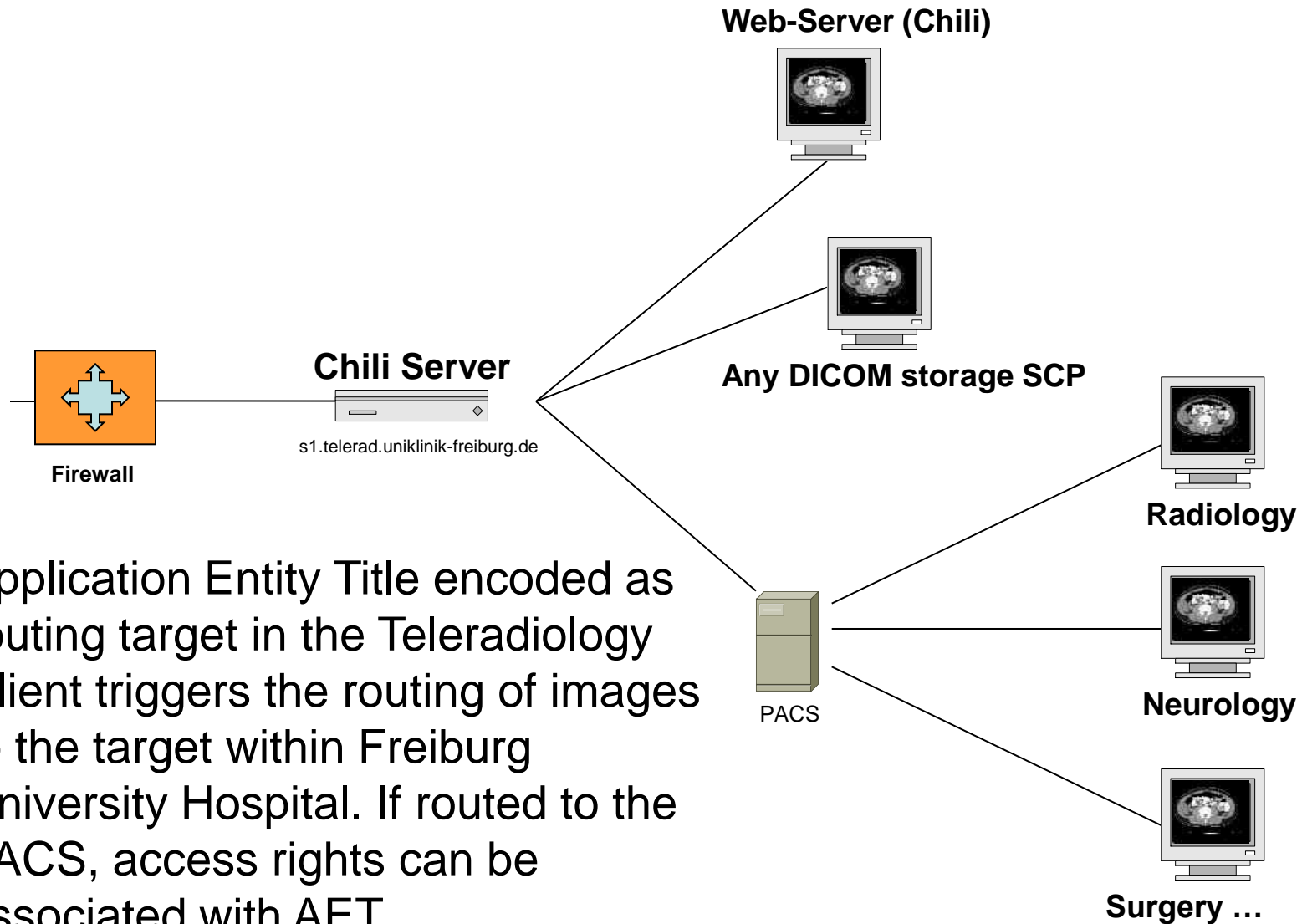
Teleradiology client

Client: DICOM Viewing Station
Net: Internet VPN
DICOM-email / PGP



Standardized DICOM email is good for infrequent exchange of image data. PGP used for security, but need to make shure using the same PGP-versions

What happens to images in Freiburg ?



Application Entity Title encoded as routing target in the Teleradiology Client triggers the routing of images to the target within Freiburg University Hospital. If routed to the PACS, access rights can be associated with AET

Teleradiology Network Universitätsklinikum Freiburg

neu:
St. Josef OG
Klinikum OG
Bad Säckingen
Titisee (Helios)

Universitätsklinikum Freiburg
Client: Tiani
Server: Chili Server/ Tiani PACS
Netz: Internet VPN / ISDN VPN
Stand: In Betrieb

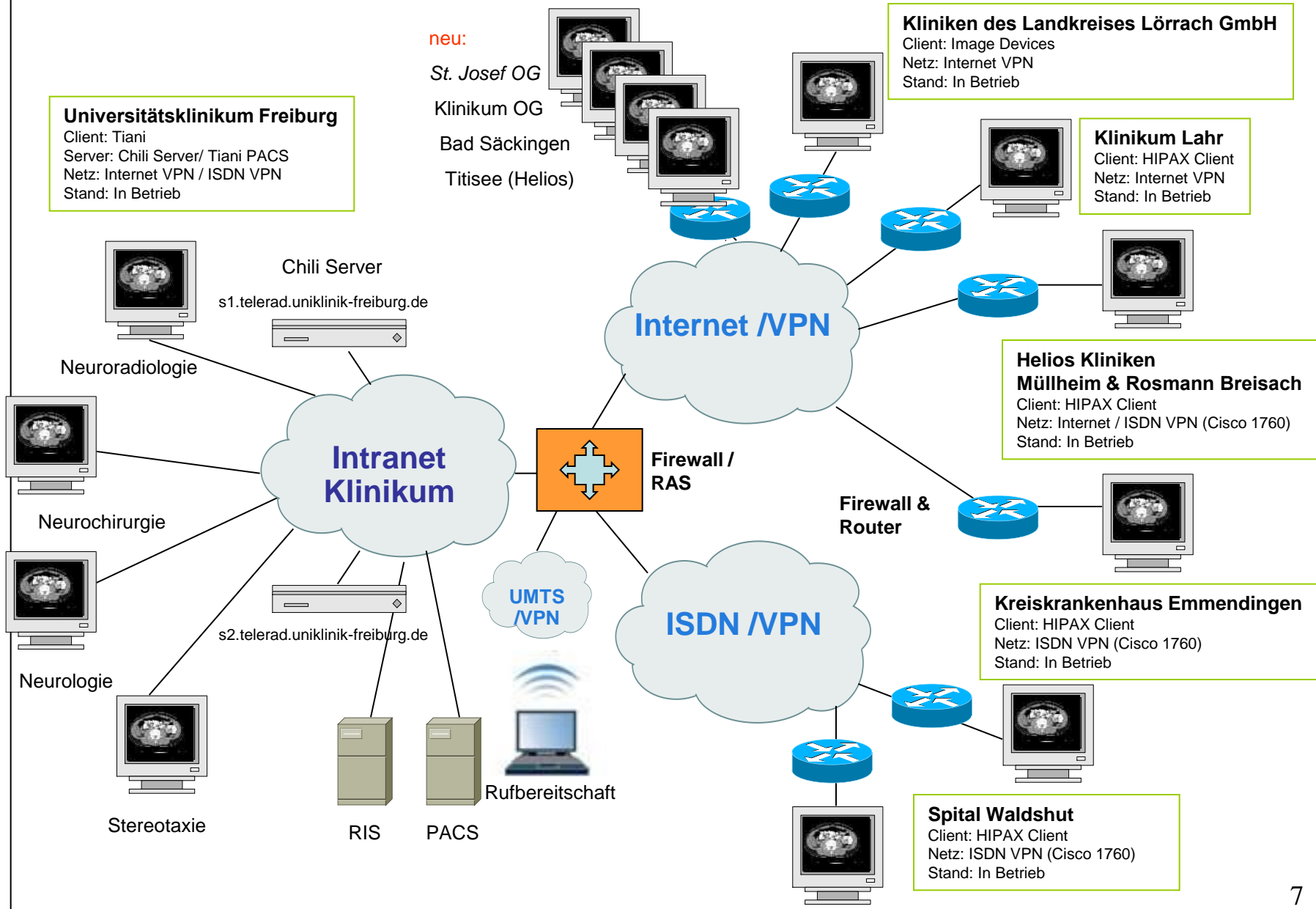
Kliniken des Landkreises Lörrach GmbH
Client: Image Devices
Netz: Internet VPN
Stand: In Betrieb

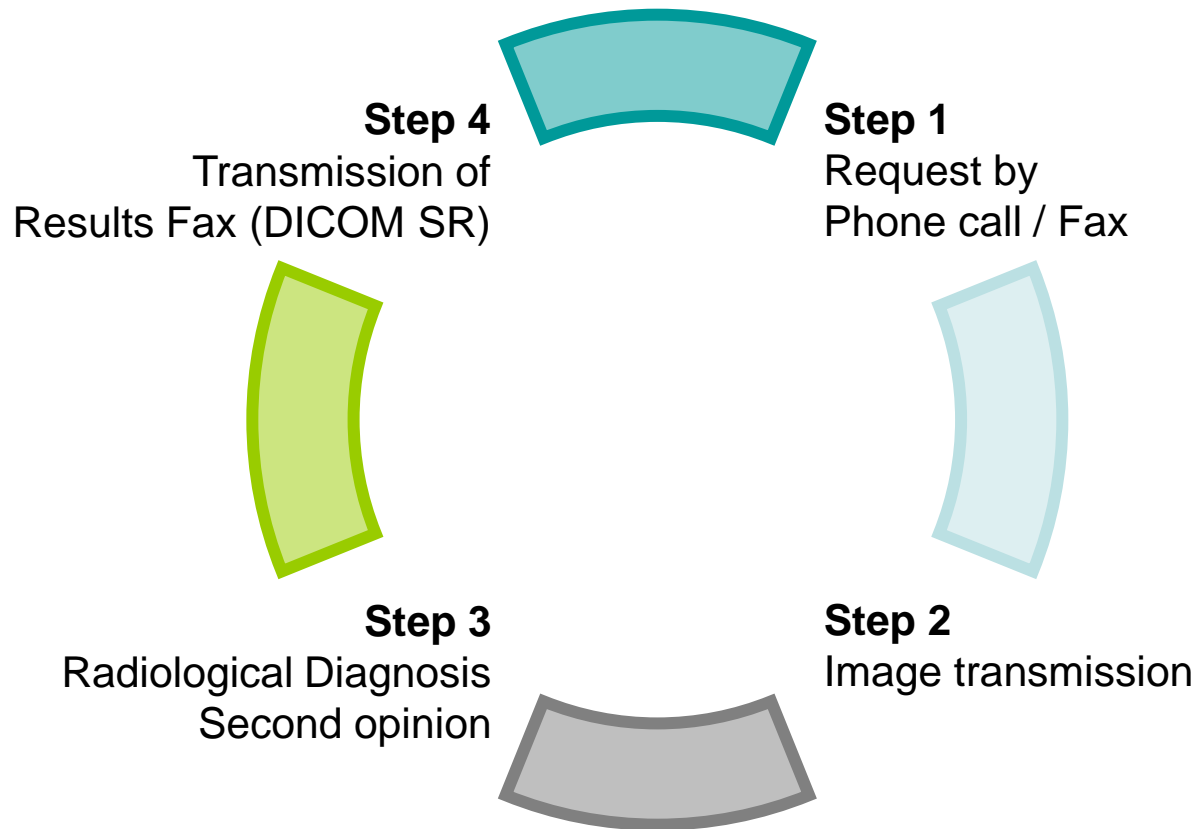
Klinikum Lahr
Client: HIPAX Client
Netz: Internet VPN
Stand: In Betrieb

Helios Kliniken Müllheim & Rosmann Breisach
Client: HIPAX Client
Netz: Internet / ISDN VPN (Cisco 1760)
Stand: In Betrieb

Kreis Krankenhaus Emmendingen
Client: HIPAX Client
Netz: ISDN VPN (Cisco 1760)
Stand: In Betrieb

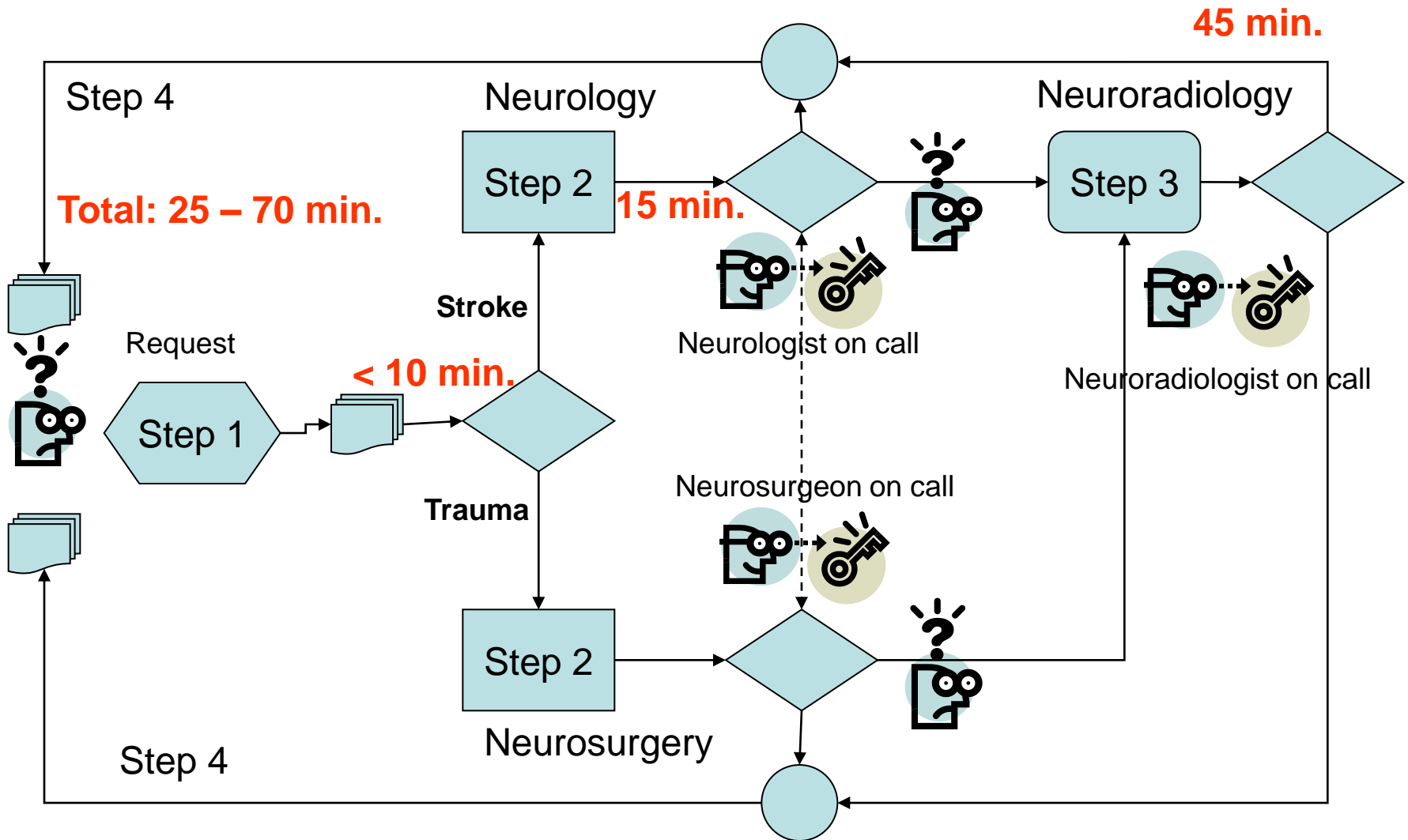
Spital Waldshut
Client: HIPAX Client
Netz: ISDN VPN (Cisco 1760)
Stand: In Betrieb





Standard process time < 48 h

Teleradiology Process: urgent neuro case



- Images in standard DICOM format
- DICOM-workstation or modality able to send images to a DICOM node (DICOM storage SCU)
- Internet connection:
 - Stable
 - Fast enough
- Either:
 - Workstation for direct DICOM-communication via VPN
 - Connection to Freiburg's SSL-Server with own Workstation, and token generator
 - Workstation with DICOM-email (testing necessary)