

ABC

radiologije

Digitalizacija, DICOM standard

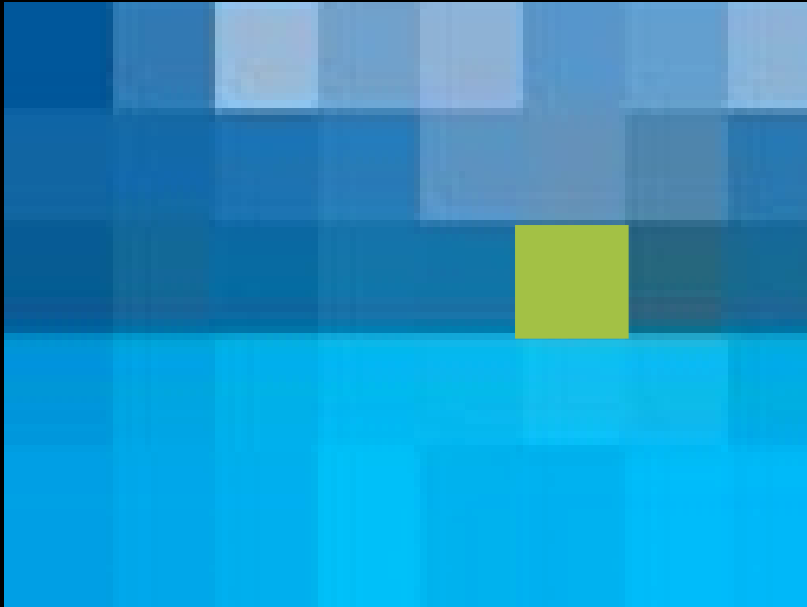
Slika ?

Analogna slika klasična slika uz pomoć X-zraka
(rendgenski film)

Digitalna slika "razbijanje" slike na piksele
(digitalna matrica)

Kako se dobija digitalna slika ?

Šta je "piksel" ?



Digitalna slika 6x8 piksela

PIKSEL:

1. Veličina

2. Skala sivog ili boja



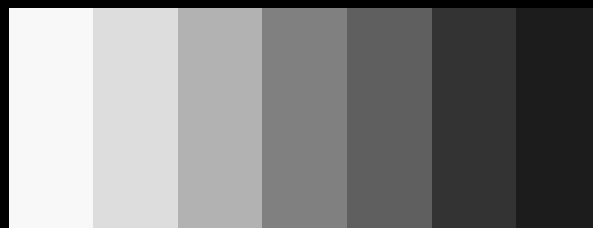
Digitalna slika 60x80 piksela



Digitalna slika 600x800 piksela

Sta je skala sivog ?

**Skala sivog je broj prikazanih
nijasni sive od crne do bijele**



U kompjuterskom fajlu digitalne slike beleži se:

1.Lokalizacija svakog piksela

2.vrednosti skale sivog tog piksela.

Kada pokrenemo digitalni fajl slike pikseli koji nosi svoju skalu sivog postavljaju se na svoje mesto na ekranu.

Kvalitet digitalne slike zavisi:

1. Veličine piksela (prostorna rezolucija)
2. Broja boja ili širine skale sivog (kontrastna rezolucija)



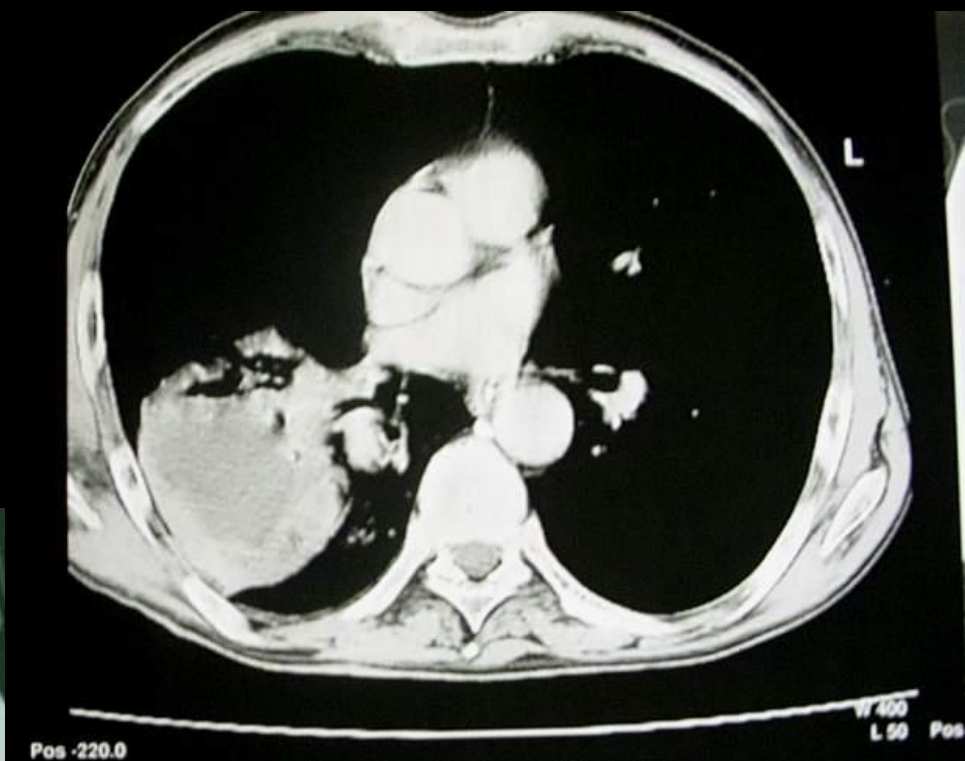
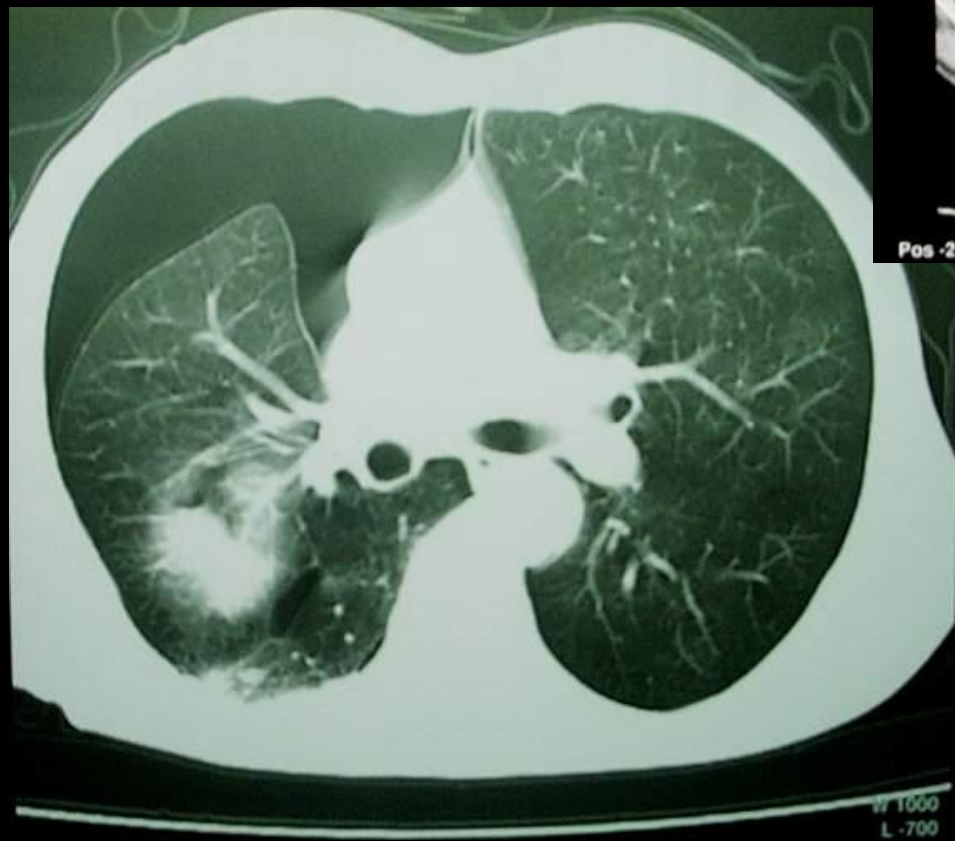
Dve nijanse sivog (crno-belo)

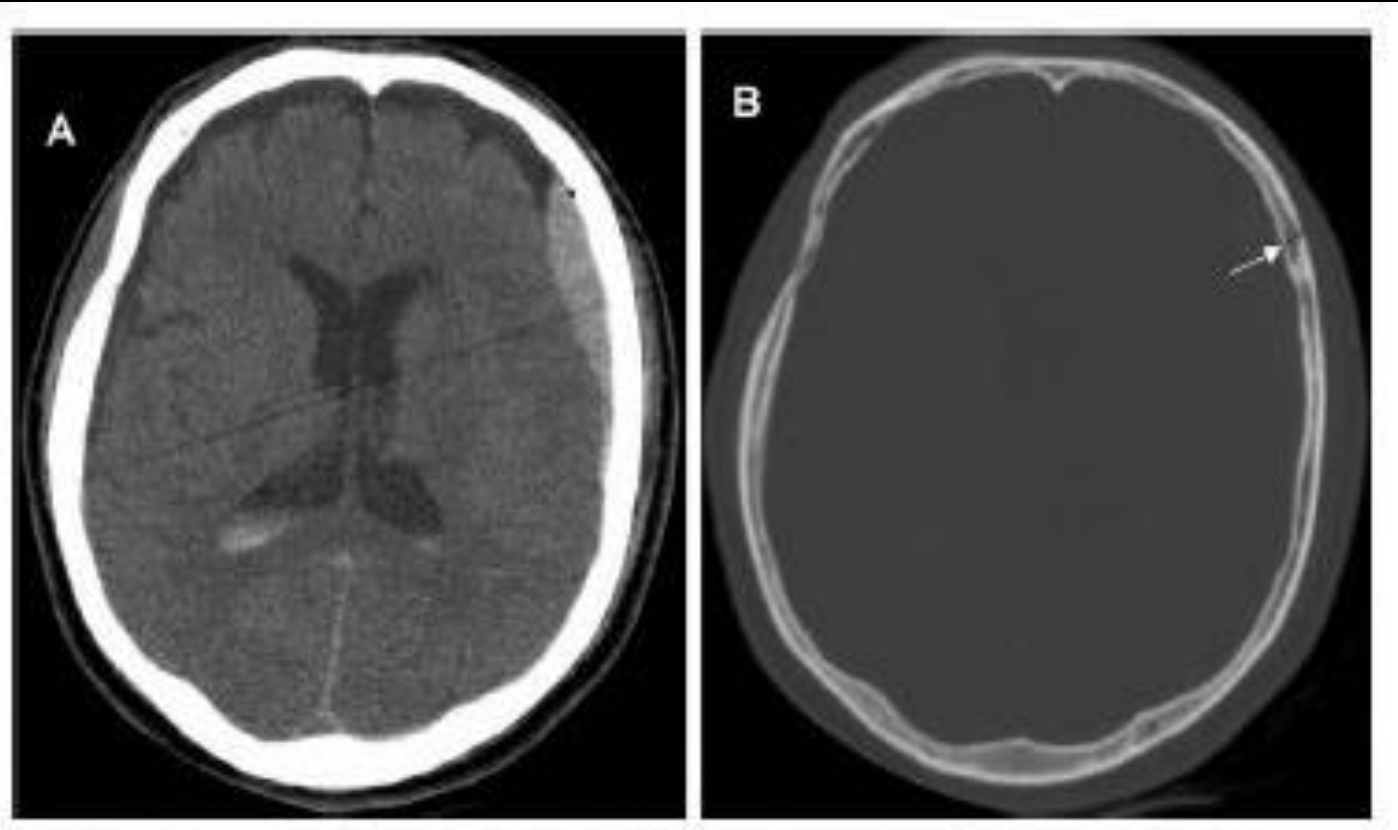


256 nijansi sivog

Tissue	CT Number (HU)
Bone	+1000
Liver	40-60
White mater	-20 to -30
Grey mater	-37 to -45
Blood	40
Muscle	10-40
Kidney	30
CSF	15
Water	0
Fat	-50 to -100
Air	-1000

Razlika ovih slika ?





Prednosti digitalne slike

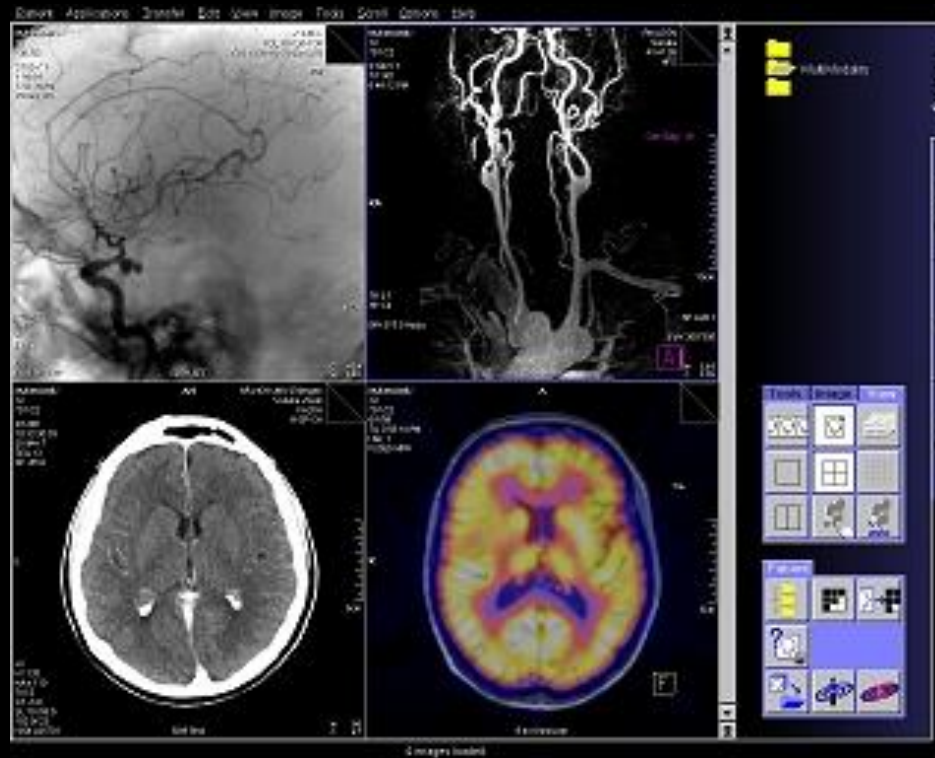
1. Obrada

2. Arhiviranje

3. Prenos, mreže
telemedicina



Digital Image CommunicatiOn in Medicine DICOM standard



RIS-Radiology Information System



HIS-Hospital Information System

HospitalGate Advanced 2008 - Medsites Medical Center

System Task Masters Patients Admissions Invoices Expenses Pharmacy Profit & Loss Windows Tools Help

Patient File

Title Mr. **First Name** Robert **MI** J **Last Name** Fox **File** 00006

Sex Male **Bath Date** Jun 07, 1975 **Marital Status** Married **Doctor** Michael Kent

Insurance Co AXA **Insurance #** 1234 **SSN/ID** 1234567890

Company Manage care **Company#** 1635 **Email** Robert@yahoo.com

Phone 2024526161 **Fax** 2024546811 **Mobile** 0101234567

Address 4, ghana street **City** Cairo **Ethnic** Gulf Arab

State Heliopolis **Zip/Postal Code** 506 **Disease** Select All Allergy Asthma Chest Trouble Diabetics Endocrine Disor

Country Egypt **Referral** Mount sinai hospital

Nationality Egypt **Medication**

Employer **Occupation**

Patient Photo

Upload Clear

Notes

Clear Edit Save Delete Email

Search

Patient By **Begin with** Insurance Co

Country Sex Doctor

Provider Group By **None**

Search Print Patient Print List

Graphic Reports

Graph

From **May 07, 2008**

To **May 07, 2008**

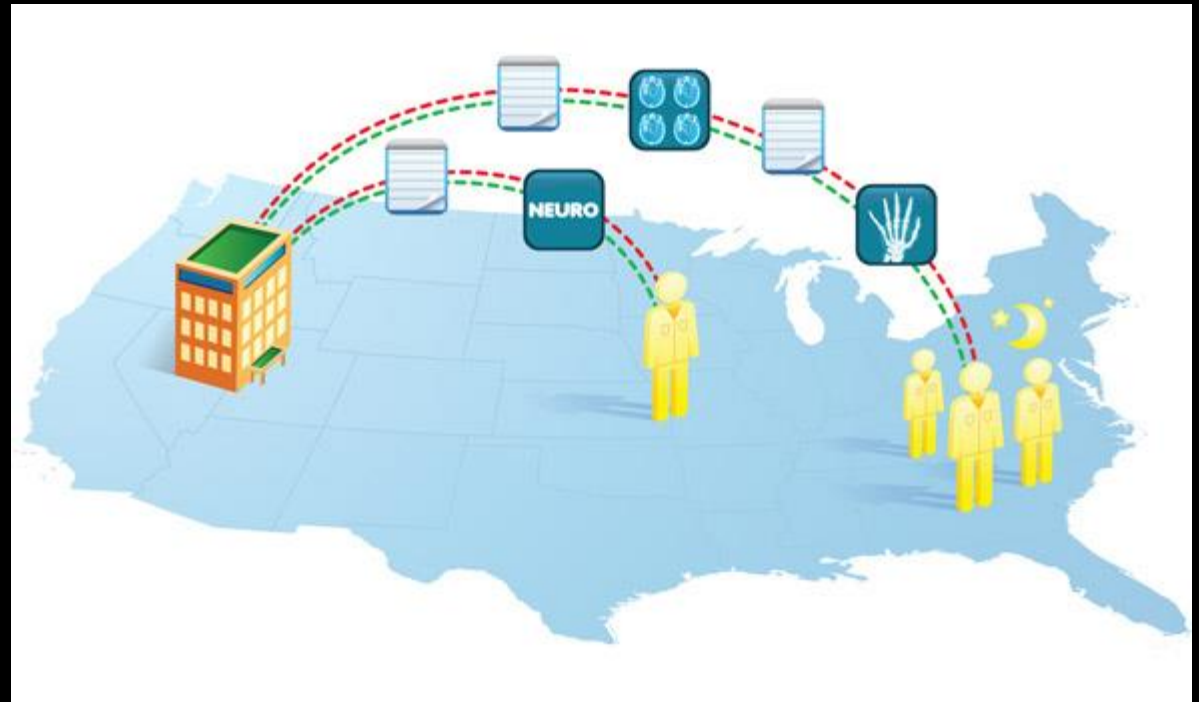
Print Graph

File#	Patient Name	Mobile	Date of Birth	City	Email	Doctor	Insurance	Provider	Ethnic	Employer
00003	Mr.Ahmed M Mahmoud	0545454	Apr 30, 2008			Ahmed Atel		Manage care		
00004	Ms.Nader A Haleem	444455	May 03, 2008			Michael Kent	Alico			
00005	Mr.Hani A.Ah	5454545	May 03, 2008			Michael Kent				
*										

Login Name:Michael Kent (Admin) Date:May 07-2008 12:33 PM Database Location:Local

Teleradiologija,

- * **Pacijent**
- * **Uredjaj**
- * **Osoblje**



Automatika u intervencijama



Take home message:

- Analogna – digitalna slika
- Piksel (veličina, skala sivog)
- Hausfildov broj WL i WW
- Prednosti digitalne slike
- DICOM standard
- RIS
- HIS
- Telemedicina