

# Biomed metadata usecases

## PTF, March 17, 2005

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- **Patient related metadata**

PatientID          Name      BirthDate                  Sex...

- **Image related metadata**

ImageID(GUID?) PatientID                  Image dimensions                  Encoding...

- **Acquisition related metadata**

ImageID                  Radiologist                  Modality                  Acquisition parameter...

- **DICOM related metadata**

ImageID                  DICOM UID                  DICOM SeqID...

- **Additional medical metadata**

ImageID                  ProtocolSchema  
 ImageID                  Param1                  Param2                  Param3

- **Security related metadata...**

ImageID                  EncryptionKey                  ACL...

<b>Patient metadata</b>				
PatientID1	Name1	BirthDate1	Sex1	...
PatientID2	Name2	BirthDate2	Sex2	...
PatientID3	Name3	BirthDate3	Sex3	...
PatientID4	Name4	BirthDate4	Sex4	...
PatientID5	Name5	BirthDate5	Sex5	...

<b>Image metadata</b>				
ImageID1	PatientID1	Dimensions1	Encoding1	...
ImageID2	PatientID1	Dimensions2	Encoding2	...
ImageID3	PatientID2	Dimensions3	Encoding3	...
ImageID4	PatientID3	Dimensions4	Encoding4	...
ImageID5	PatientID3	Dimensions5	Encoding5	...

<b>Acquisition metadata</b>			
ImageID 1	Radiologist1	Modality1	...
ImageID 2	Radiologist2	Modality2	...
ImageID 3	Radiologist2	Modality3	...
ImageID 4	Radiologist1	Modality4	...
ImageID 5	Radiologist1	Modality5	...

**Patient metadata**

PatientID1	Name1	BirthDate1	Sex1	...
PatientID2	Name2	BirthDate2	Sex2	...
PatientID3	Name3	BirthDate3	Sex3	...
PatientID4	Name4	BirthDate4	Sex4	...
PatientID5	Name5	BirthDate5	Sex5	...

**Image metadata**

ImageID1	PatientID1	Dimensions1	Encoding1	...
ImageID2	PatientID1	Dimensions2	Encoding2	...
ImageID3	PatientID2	Dimensions3	Encoding3	...
ImageID4	PatientID3	Dimensions4	Encoding4	...
ImageID5	PatientID3	Dimensions5	Encoding5	...

**Acquisition metadata**

ImageID 1	Radiologist1	Modality1	...
ImageID 2	Radiologist2	Modality2	...
ImageID 3	Radiologist2	Modality3	...
ImageID 4	Radiologist1	Modality4	...
ImageID 5	Radiologist1	Modality5	...

**Patient metadata**

PatientID1	Name1	BirthDate1	Sex1	...
PatientID2	Name2	BirthDate2	Sex2	...
PatientID3	Name3	BirthDate3	Sex3	...
PatientID4	Name4	BirthDate4	Sex4	...
PatientID5	Name5	BirthDate5	Sex5	...

**Image metadata**

ImageID1	PatientID1	Dimensions1	Encoding1	...
ImageID2	PatientID1	Dimensions2	Encoding2	...
ImageID3	PatientID2	Dimensions3	Encoding3	...
ImageID4	PatientID3	Dimensions4	Encoding4	...
ImageID5	PatientID3	Dimensions5	Encoding5	...

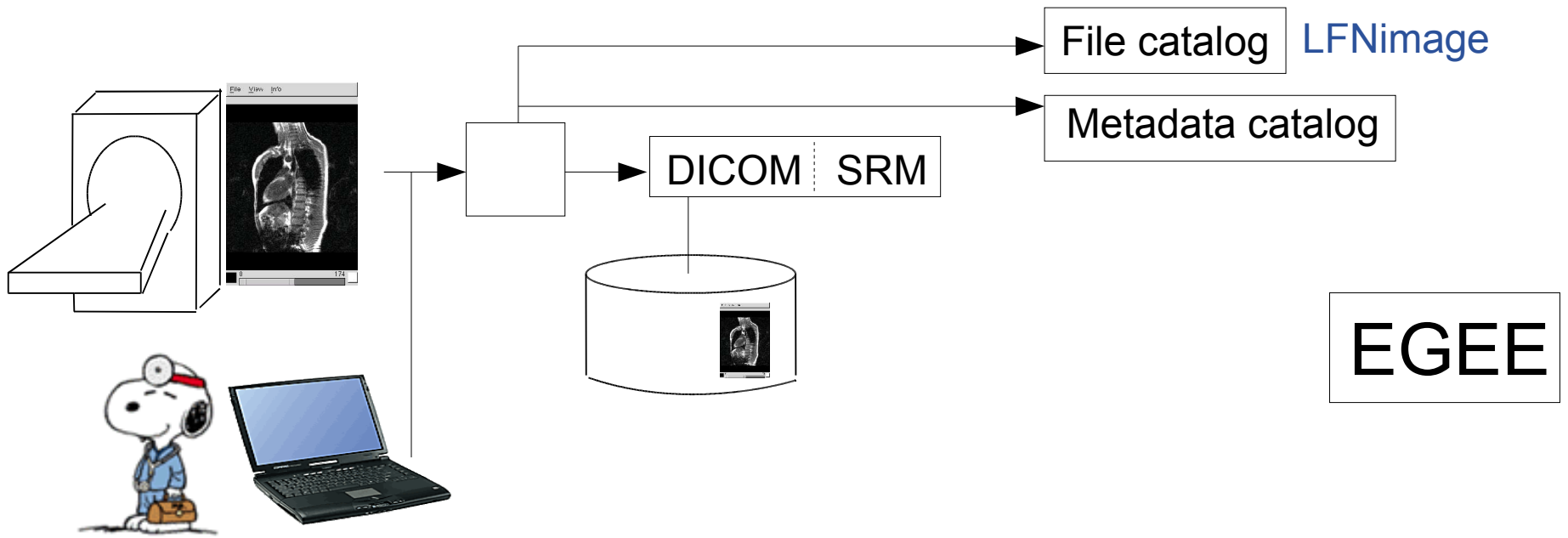
**Acquisition metadata**

ImageID 1	Radiologist1	Modality1	...
ImageID 2	Radiologist2	Modality2	...
ImageID 3	Radiologist2	Modality3	...
ImageID 4	Radiologist1	Modality4	...
ImageID 5	Radiologist1	Modality5	...

Patient metadata				
PatientID1	<del>Name1</del>	BirthDate1	Sex1	...
PatientID2	<del>Name2</del>	BirthDate2	Sex2	...
PatientID3	<del>Name3</del>	BirthDate3	Sex3	...
PatientID4	<del>Name4</del>	BirthDate4	Sex4	...
PatientID5	<del>Name5</del>	BirthDate5	Sex5	...

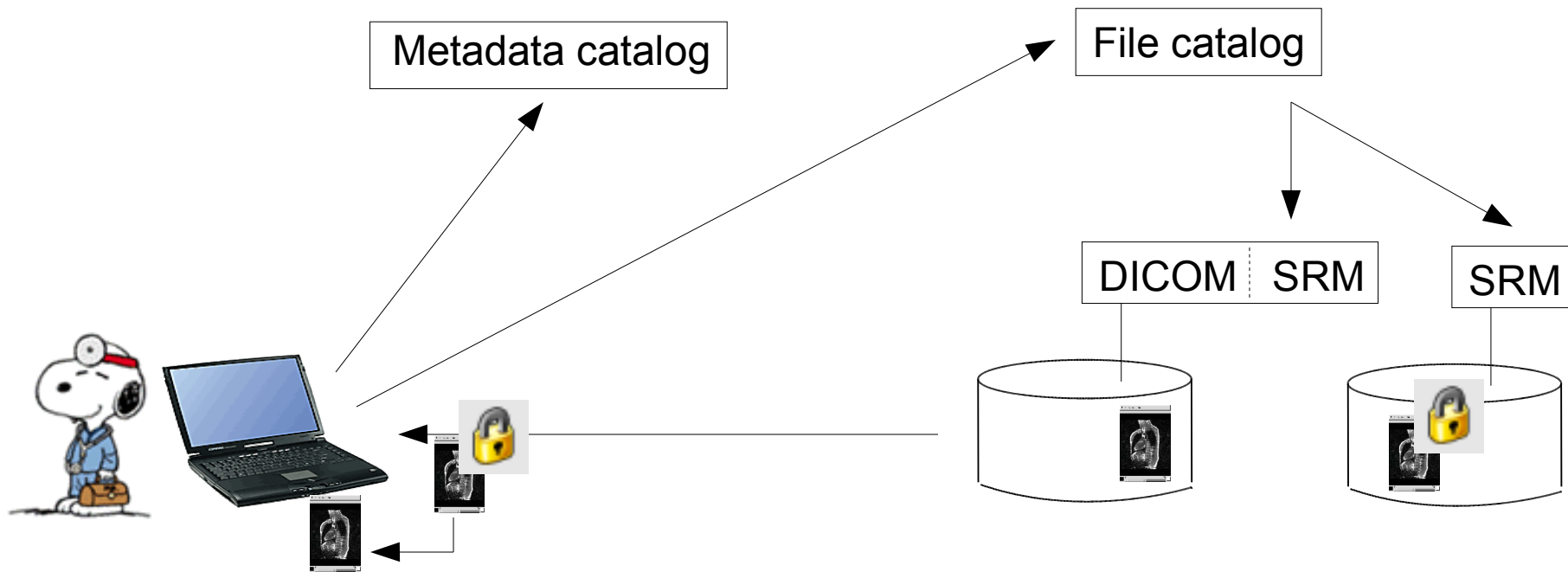
Image metadata				
ImageID1	PatientID1	Dimensions1	Encoding1	...
ImageID2	PatientID1	Dimensions2	Encoding2	...
ImageID3	PatientID2	Dimensions3	Encoding3	...
ImageID4	PatientID3	Dimensions4	Encoding4	...
ImageID5	PatientID3	Dimensions5	Encoding5	...

Acquisition metadata			
ImageID 1	<del>Radiologist1</del>	Modality1	...
ImageID 2	<del>Radiologist2</del>	Modality2	...
ImageID 3	<del>Radiologist2</del>	Modality3	...
ImageID 4	<del>Radiologist1</del>	Modality4	...
ImageID 5	<del>Radiologist1</del>	Modality5	...



- **Data registration**

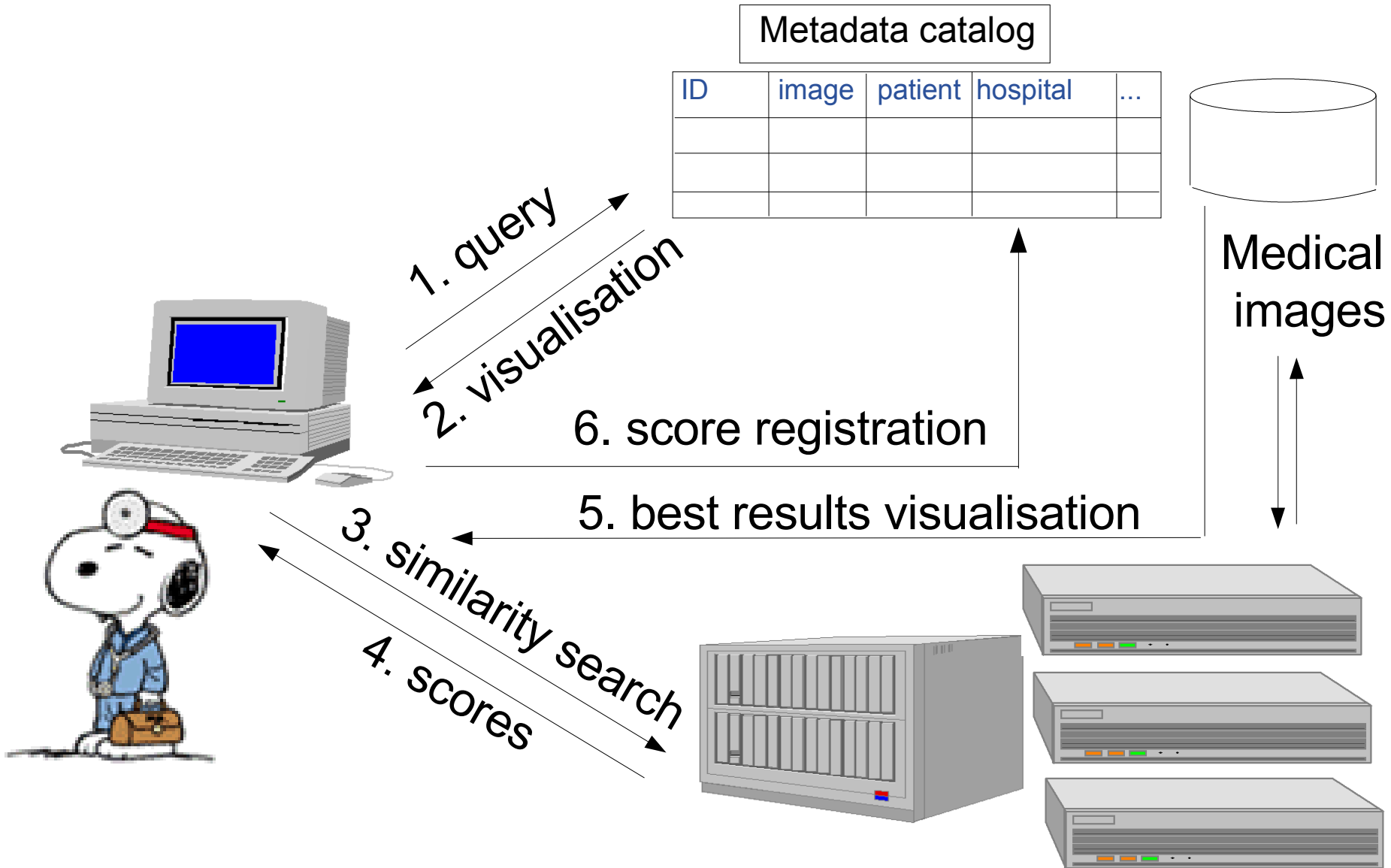
- data (image) acquisition + metadata entered by operator
- DICOM push
- grid file registration (LFNimage)
- metadata registration (patient + image)

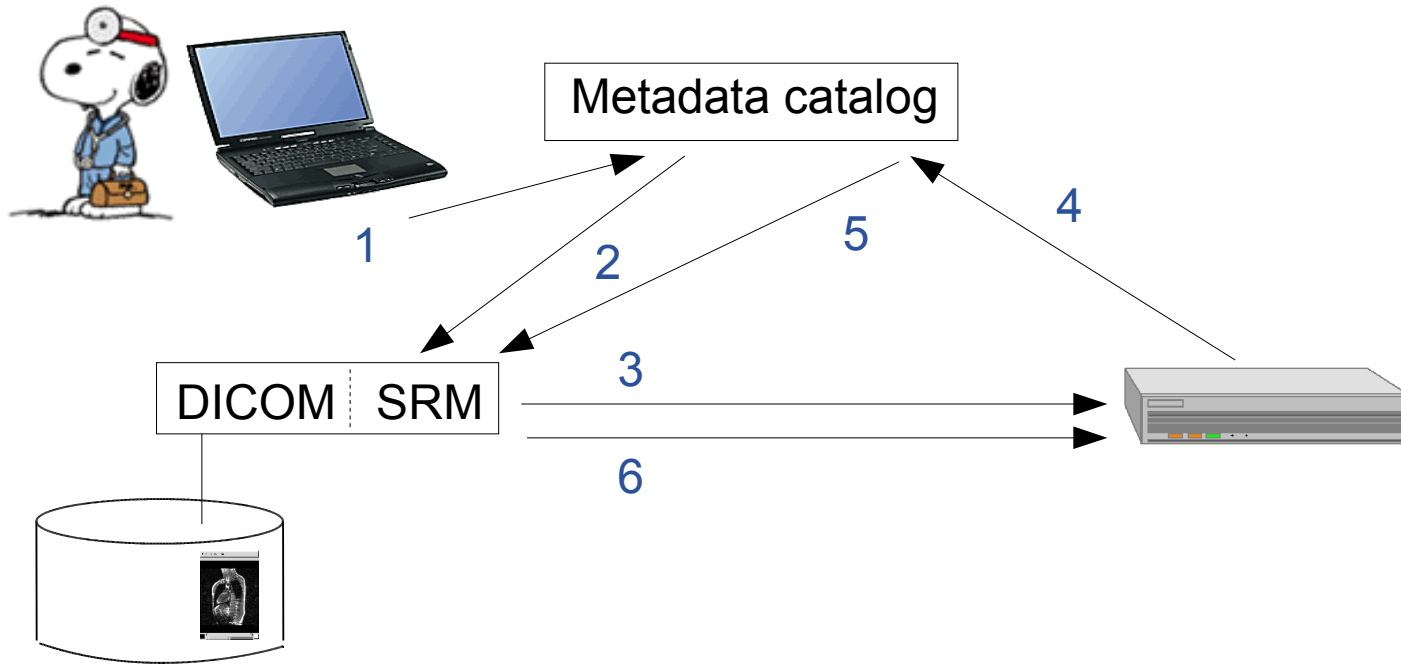


- **Data retrieval (or processing)**

- Search LFN associated to metadata (e.g. image of patient X acquired yesterday)
- Request LFN
- Transport to WN or UI
- Decryption







- **Submit a job with input data “file of Mr X. acquired today”**
- **The image is processed**
- **Similar images are retrieved from the database**
- **The image is analysed taking these additional images as input**