



# Imaging exchange network for interim PET analysis The GELA/GELARC experience

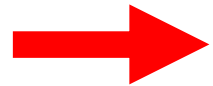
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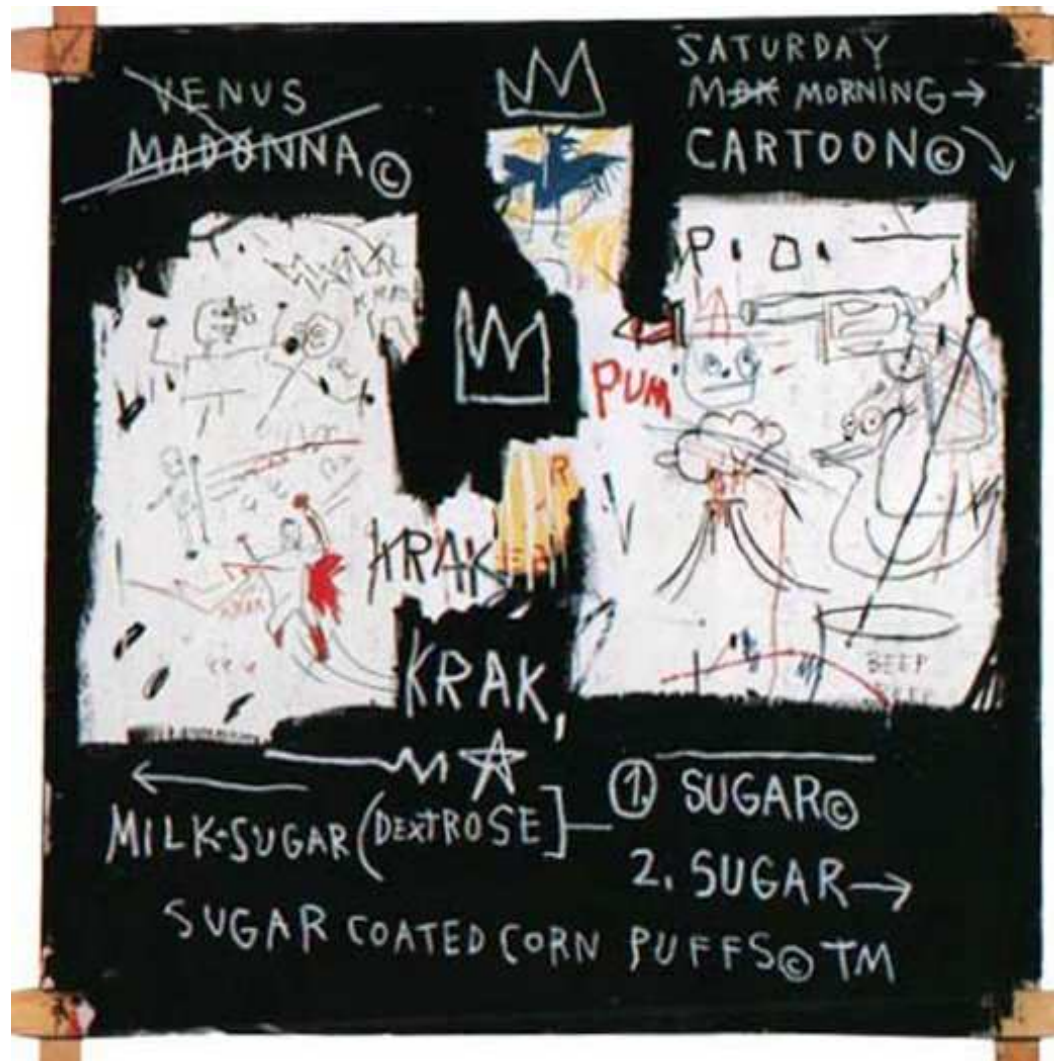
# 2007 (H10 and NHL073B trials)

- Interim PET driven therapeutic strategy
- Interobserver variability of interim PET reporting

## Imaging exchange network



1. On line independent PET reporting
2. Several experts reporting with the same software



« The panel of experts »  
Jean Michel Basquiat , 1982

# **To prevent bias from consensus or adjudication**

**The final report should be the result of a pure mathematical voter counts from the independent experts**

# Imaging exchange network

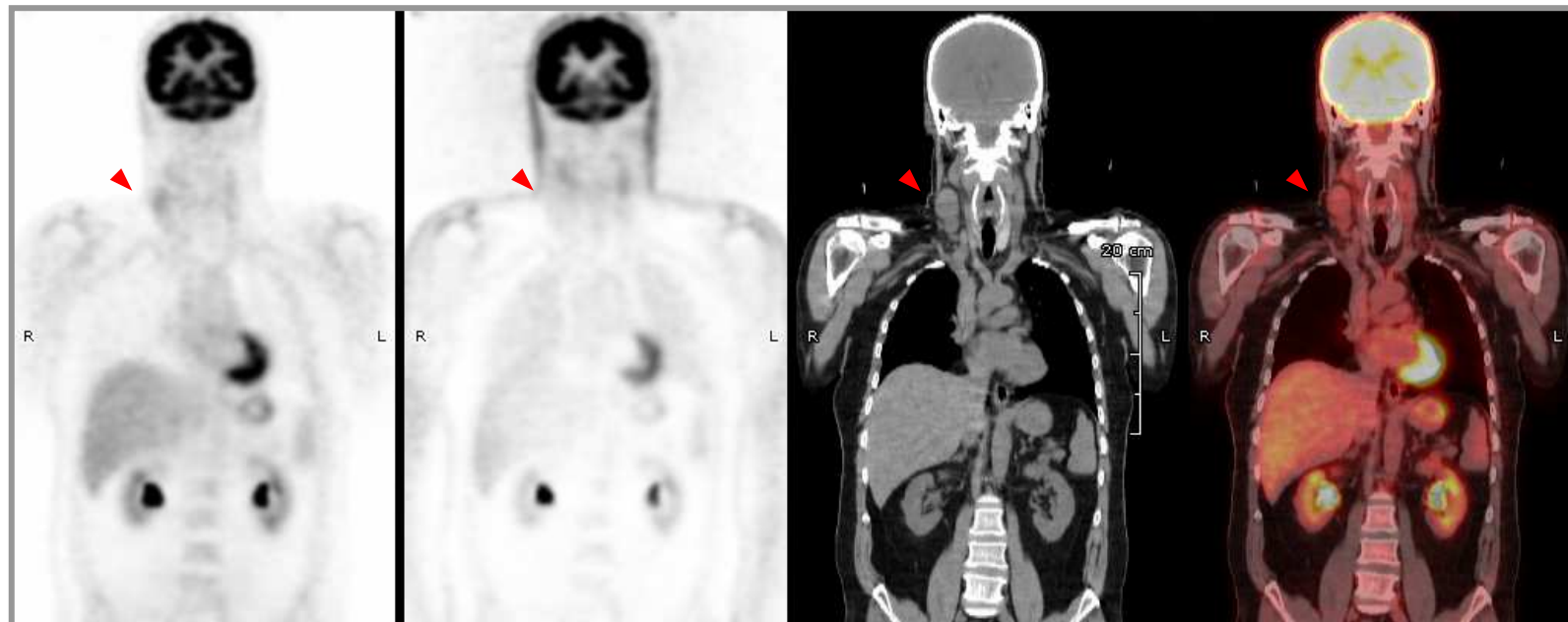
## 1. Requirements for exchange

Fast upload of the images and anonymization

All PET/CT volume files and not just « selected images »

Non attenuation and attenuation corrected images

att.-corr. image    non att.-corr. image



PET(+)

PET(-)

# Imaging exchange network

## 2. Requirements for reporting

The experts should have:

- PET/CT dedicated software/ **MIP**/fast navigation through the slices/ thresholding for SUV computation
- All the same software
- High quality display screen

# Imaging exchange network

## 3. Requirements for results

- Final interpretation should be obtained within 72 hours
  - compatible with clinical routine practice (fast transfer of PET/CT images, fast processing)
  - Fast transfer of the results to the investigation center

# Two Network solutions

- Workstation-based with Virtual Private Network
- Web-based solution with desktop remote access



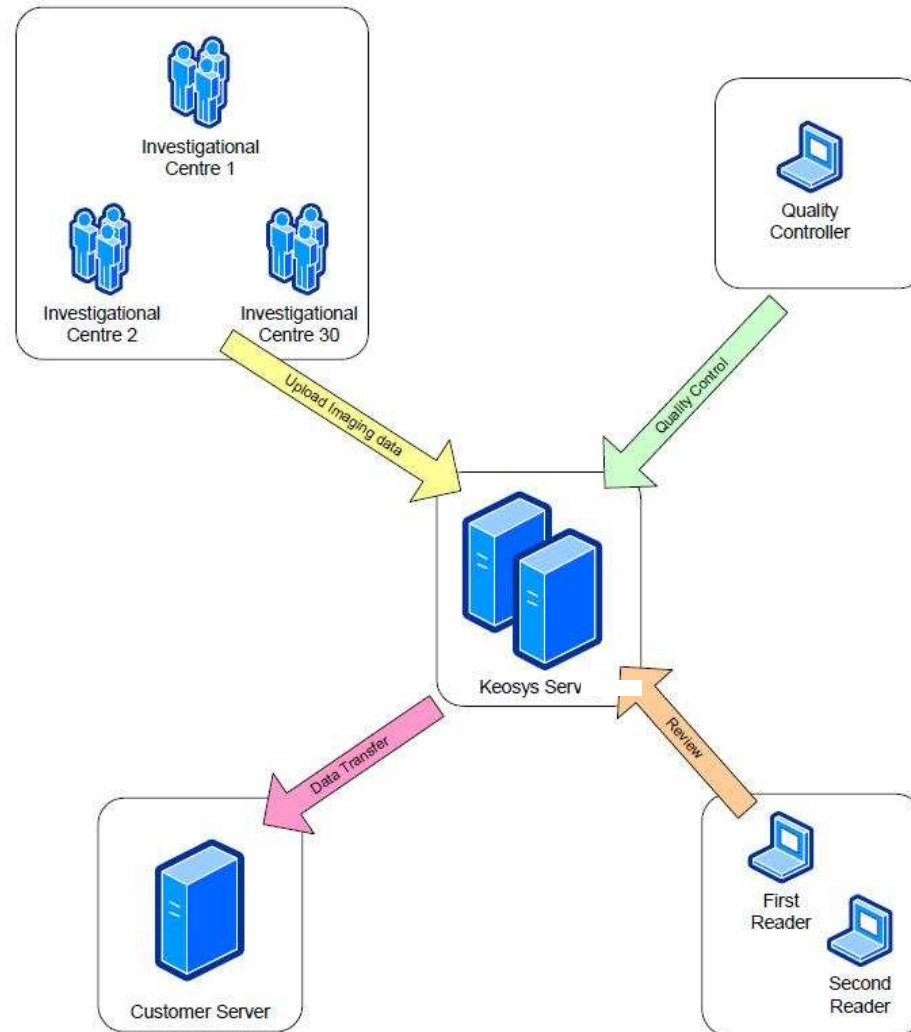


# From June 2007-december 2010

**3042 exams have been analyzed through this network**

- H10 : 1653
- LNH07-3b : 730
- PET follicular : 392
- VEGF-TRAP : 107
- IVS : 160.

# Web based solution



Investigator

Profile

Logout

LNH091B Filter default

MEIGNAN Michel, last connection 2011/09/09 16:32 from IP 164.2.255.244

- 11009101021001
- 11009101021002
- 11009101021003
- 11009103311001
- 11009103411001

Select a patient in the tree



# IMAGYS

Investigator Controller Reader Profile

AHL2011 Filter default

▶		13011101021001	
▶		13011101021002	
		13011101021003	
▶		13011103311001	

Investigator Controller Reader Profile

AHL2011 Filter default

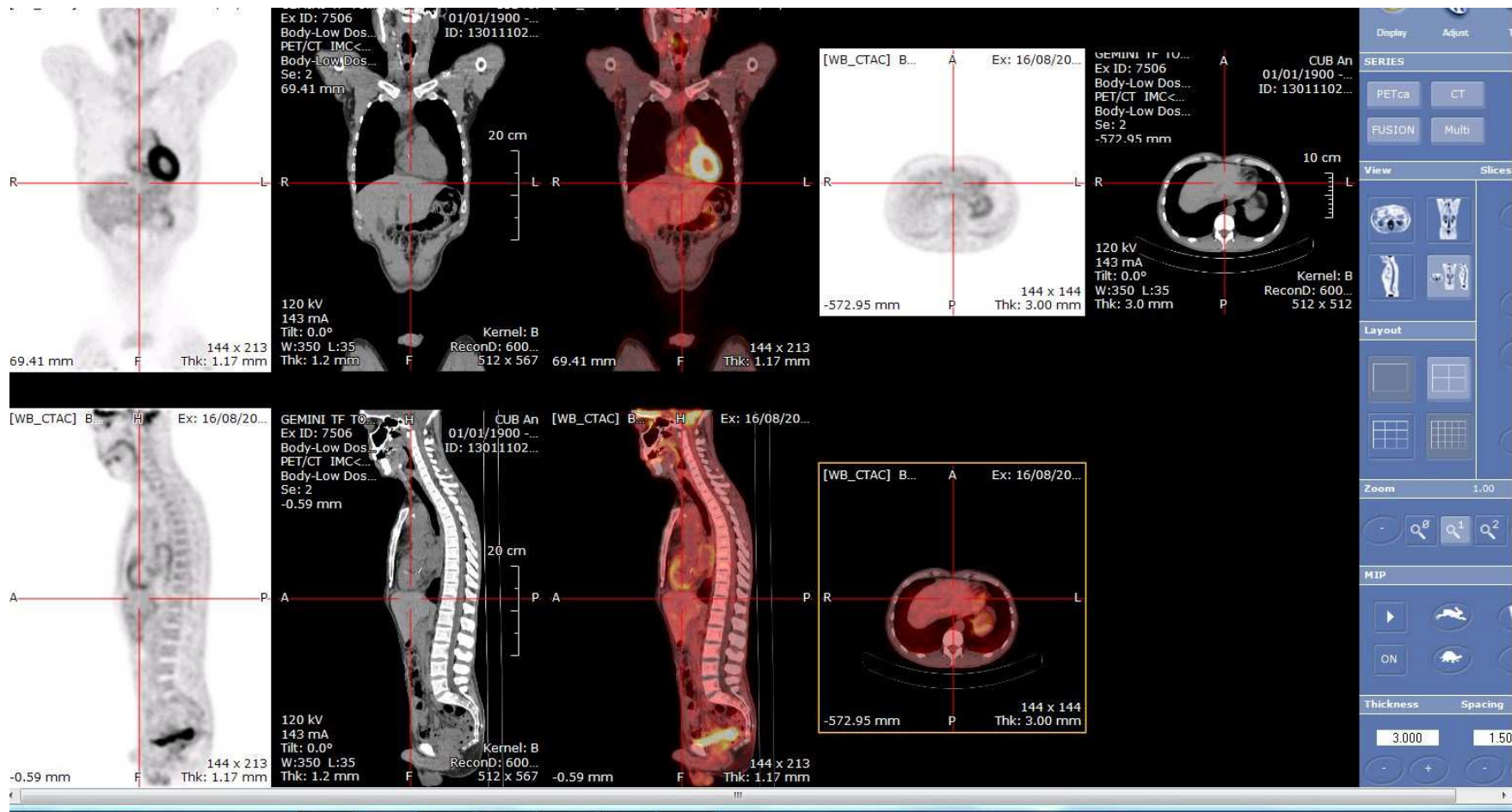
13011102111001 13011102111001

PET2

Patient information	
Code	13011102111001
Arm :	Arm A: Standard treatment
Name :	CUB
First name :	AN
Birthday :	20/07/1970
Gender :	MALE
Registration date :	07/07/2011
Investigator name :	ALI AMMAR
Investigator centre :	CH de Troyes
Investigator num centre :	11102

Visit list	
Code	Display in viewer
PET2	<input checked="" type="checkbox"/>
	<input type="button" value="Add"/>



LNH091B Filter default

11009101151001

- PET4
  - CT TAP 3.0 eFoV
  - PET WB
  - PET WB UNCORREC...

11009101151001 ▶ PET4

Visit information	
Code :	PET4
Add	

Series list	
Description	Display in viewer
CT TAP 3.0 eFoV	<input type="checkbox"/>
PET WB	<input type="checkbox"/>
PET WB UNCORRECTED	<input type="checkbox"/>
Add	

Basket

View

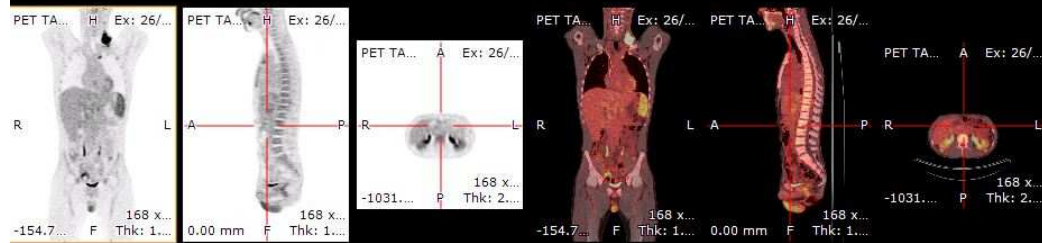
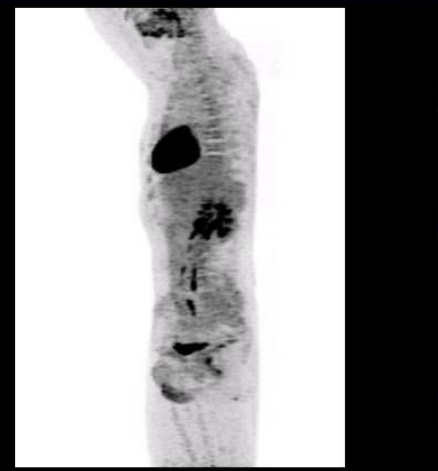
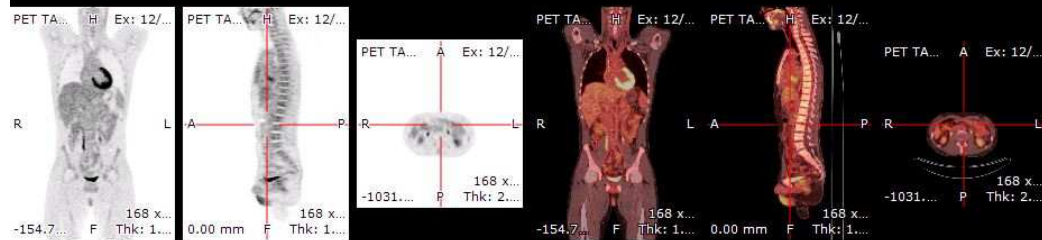
Quality Control

Accept  Refuse

Comment for refusal

The first reviewer is responsible for checking the quality of the uploaded exam. Note that until an exam is either accepted or refused no one will be able to do the associated reading. Once an exam has been accepted the other readers will not have to control it again. On the other hand if an exam has been refused the supervisor will be informed and will decide what to do (in the meantime other readers won't be able to review or control it).

Validate



Display Adjust To

SERIES

PETca PETnc

FUSION Multi

View Slices

Layout

Zoom 1.00

MIP

Thickness Spacing



- ▶ 13011101091001
- ▶ 13011101171001
- ▶ 13011101221001
- ▶ 13011101031001
- ▶ 13011101061001
- ▼ 13011101061002

- ▼ **PET0**
  - CT TAP 3.0 B30
  - PET TAP AC HD
  - PET TAP NAC HD
- ▶ 13011102111001
  - ▶ **PET0**

13011101061002 ▶ PET0

Visit information	
Code :	PET0
<input type="button" value="Add"/>	

Series list	
Description	Display in viewer
CT TAP 3.0 B30	<input type="checkbox"/>
PET TAP AC HD	<input type="checkbox"/>
PET TAP NAC HD	<input type="checkbox"/>
<input type="button" value="Add"/>	

### Reading

Reading

SUVMAX Tumoral

SUVMAX Hepatic

SUVMAX Mediastinum

Comments



# Conclusions

- Workstation based solution is easier for the experts but more expensive
- Web based solution more versatile but needs
  - At least 3-5 MB/s internet speed
  - High quality display screen
- Now used for all GELA trials
- Similar solution used by the EORTC



# Two groups reviewing with the same software

**GELA patients**

		<b>EORTC/IIIL review</b>	
		-	+
<b>Gela initial</b>	-	32	1,5
	+	2	12,5
Kappa G1/G2		<b>0,82</b>	

**EORTC/IIIL patients**

		<b>Gela review</b>	
		-	+
<b>EORTC IIIL initial</b>	-	18	0,5
	+	8	10,5
Kappa G2/G1		<b>0,55</b>	