

# IMOTEP Network

(PET On-line Multi centre Interpretation)  
Structure



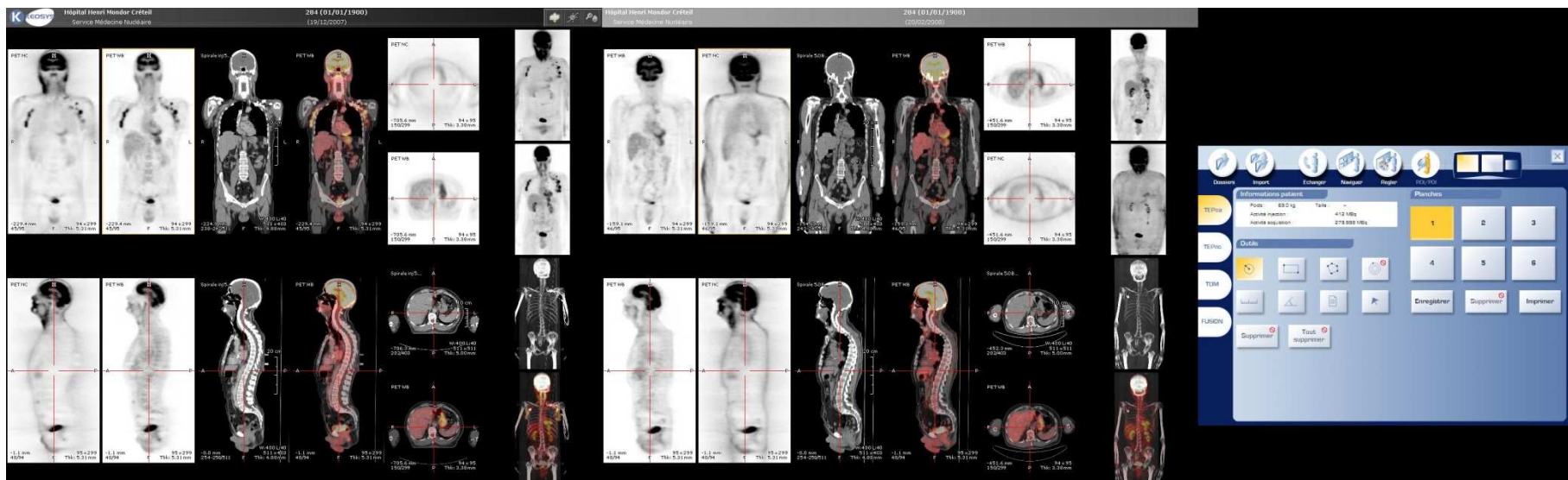
**Coordinators: Pr Michel Meignan,  
and Romain Ricci**

Service de Médecine Nucléaire Université Paris XII, Hôpital Henri Mondor ,

# Rationale

- For trials where interim PET was used to tailor strategy (H10, LNH07-3B)
- Independent reading by a non limited number of experts
- Interpretation on a similar workstation dedicated for PET/CT analysis
- Inclusion of the investigator interpretation in the final result
- Final interpretation must be obtained in a short time (48 or 72 hours)
  - Friendly and compatible with clinical routine practice (fast transfer of PET/CT images, fast processing)
  - Fast transfer of the results to the investigation center

# Cornerstone: Positroscope



**Multimodality dual screen workstation linked to the DICOM -VPN**  
**Side to side display of pre and post-treatment PET/CT**  
**Complete processing: Multi slices display, MIP, triangulation, ROI, SUV**

# The IMOTEP network

Investigation Center

Experts

Processing center

Dpt. Haematology

6 PET reports

Protocol : H10  
Date de réception : 04/09/2007 15:38  
Statut : En cours

Interprétation de la demande :  
● TEP négatif - FDG uptake <= BF médiastinal pour des lésions < 2cm

Interprétation des réponses :  
● 2/6 TEP négatif  
● 3/6 TEP positif  
● 0/6 Indéterminable

Echange clos : ● oui

Fichier audio : aucun

Results

6 readers or more

Dpt. Nuclear Medicine

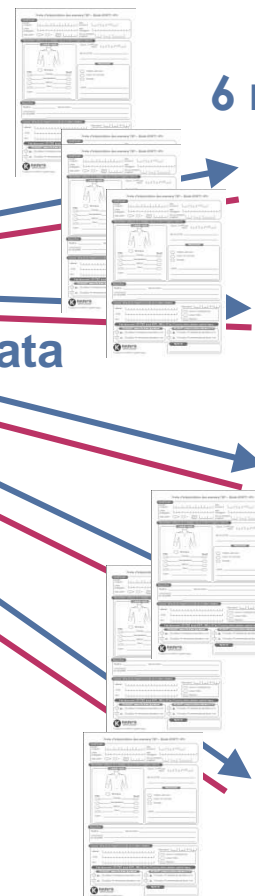
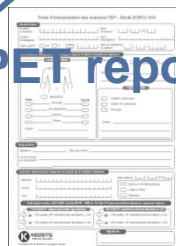
PET data

Medical Gateway

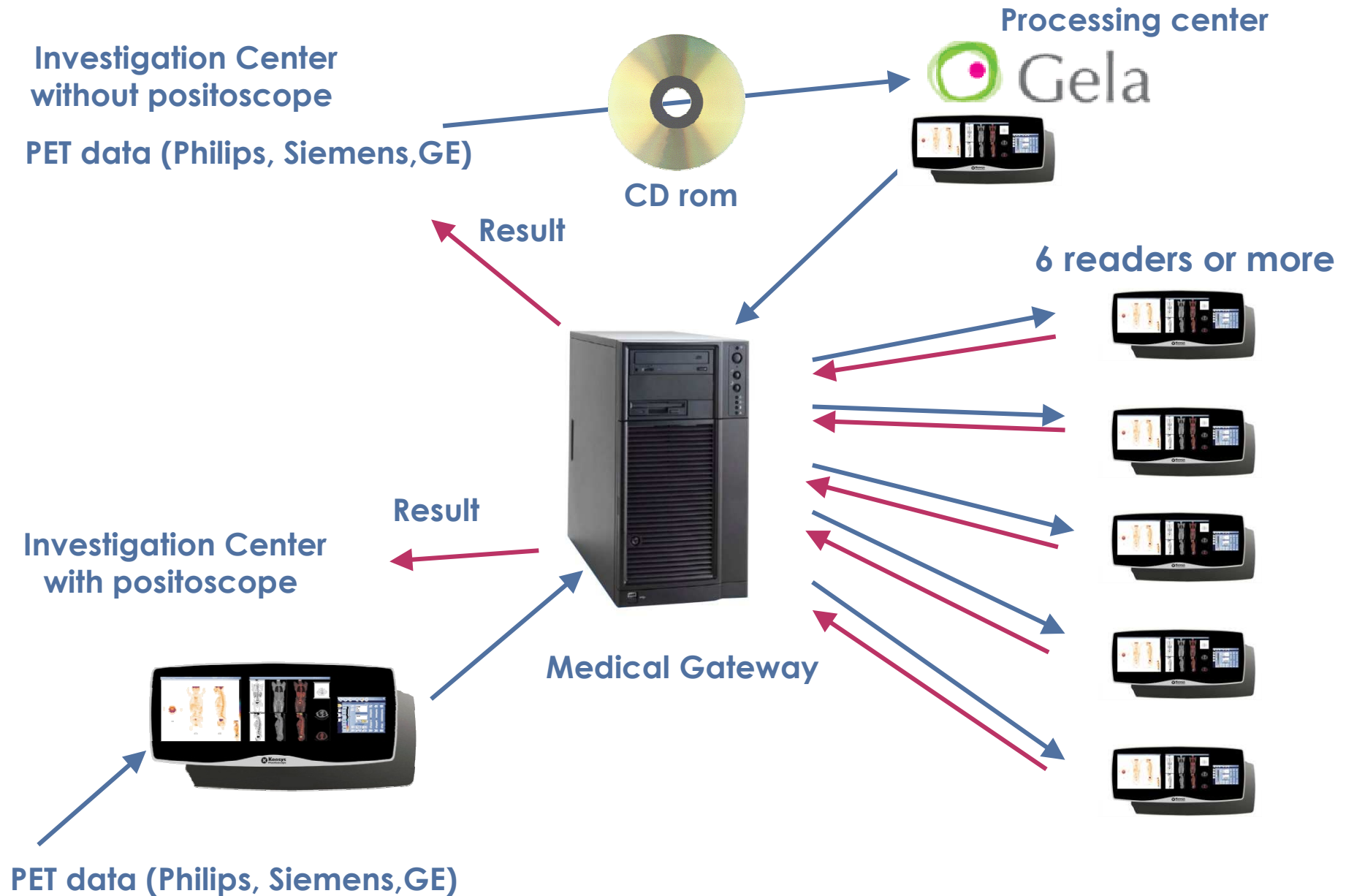
PET data

PET report

PET data (Philips, Siemens,GE)



# Today: How does it work?



# Risk adapted strategy

## IMOTEP Network

JOURNAL OF CLINICAL ONCOLOGY

C O R R E S P O N D E N C E

### Development and Application of a Real Time On-Line Blinded Independent Central Review of Interim Pet Scans to Determine Treatment Allocation in Lymphoma Trials

TO THE EDITOR: [ $^{18}\text{F}$ ]fluorodeoxyglucose–positron emission tomography (PET) interpretation criteria in lymphoma have been recently established<sup>1</sup>; however, their application is restricted to end of treatment assessment.<sup>1</sup> By contrast, there is still no consensus on the interpretation criteria for interim PET. Several studies using variable criteria have demonstrated that early PET has a high prognostic value in non-Hodgkin's lymphoma and Hodgkin's lymphoma suggesting that it could be used to guide therapeutic strategy.<sup>2-4</sup> Criteria have ranged from purely visual or quantitative to a mix of visual and quantitative, with some advocating a certain amount of minimal re-

computed tomography (CT), as well as complete image processing, including standardized uptake values analysis. PET/CT volume files acquired on the various PET cameras (GEMS; Siemens Medical, Philips Medical, CITY, STATE/COUNTRY) are stored in the workstation. The investigator sends through the network the PET/CT files and an optical form containing his masked interpretation. A central GELA server dispatches the raw data to the workstations of six experts in France and Belgium. The network is based on digital subscriber line Internet connections, using file transfer protocols. The Digital Imaging and Communications in Medicine data are anonymized, and the internet connection is encrypted. A typical complete file size of about 200 megabytes is sent in less than 30 minutes from one center to the other. The experts make their own independent image processing and interpretation, and send the optical scan report form with the result to the central server where an integrated computation of the seven interpretations (six experts plus the local center) is performed.

PET2 are binary interpreted as positive or negative. The final result (computation of the local and of two, four, or six experts' readings obtained within 72 hours) is then sent to the coordinating

Meignan, Itti, Bardet et al. *J Clin Oncol* 2009

# IMOTEP Network advantages

- Fast and secure transfer of all PET/CT volume files  
single reader evaluates the full set of exam
- Similarity of processing and display for all experts with a dedicated workstation with all functionalities (SUV) whatever the PET device used
- Independent and on line reading by experts including the investigation center with no limitation in number.
- Rapid synthesis of the results (optical form) for risk adapted strategy

# From June 2007



2053 exams have been analyzed through this network

**1.** 1199 for the H10 protocol (52 centers have sent PET or PET/CT)

6 experts + including center

**2.** 600 for the LNH07-3B protocol (47 centers)

2 experts + including center

**3.** Final global interpretation obtained within 72 h



# Web solution (IMAGYS) for the GELA trial

The screenshot displays the KEOSYS IVS web application interface. The browser address bar shows 'viewer.keosys.com'. The interface includes a sidebar with navigation options: 'All folders', 'My Folders', 'Sent', and 'Inbox'. The main content area features a table with the following columns: 'Patient's Name', 'Patient ID/File', 'Description', and 'Date'. The table lists various patient records, with one entry for patient I134 showing a description of '1435x869 HD 5'. Below the table, an 'Information' panel provides details for the selected patient (I374), including birth name, birthdate (01/01/1900 (F)), institution name, physician, and equipment. An 'Open' button is located in the bottom right corner of the information panel.

Patient's Name	Patient ID/File	Description	Date
I374	i374	---	26/02/2009 11:52
I373	i373	---	20/02/2009 11:14
I262	i262	---	09/02/2009 10:27
I371	i371	---	15/12/2008 12:05
I259	i259	---	01/12/2008 09:11
I370	i370	---	21/11/2008 14:03
I369	i369	---	04/11/2008 10:51
I368	i368	---	24/09/2008 12:31
I261	i261	---	29/05/2008 13:23
I258	i258	---	26/05/2008 11:24
I168	i168	---	25/03/2008 12:51
I165	i165	TOTAL BODY FDG	11/03/2008 13:29
I134	i134	1435x869 HD 5	25/02/2008 14:11
I133	i133	---	11/02/2008 11:43
I136	i136	HD 2	19/12/2007 10:39
I324	i324	---	05/11/2007 16:22
I323	i323	---	05/10/2007 12:04
I255	i255	---	27/09/2007 08:58
I055	i055	---	21/09/2007 16:51
I254	i254	---	19/09/2007 14:01
I135	i135	---	12/09/2007 13:30
I186	i186	---	12/09/2007 08:52
I256	i256	---	10/09/2007 14:13
I131	i131	---	07/09/2007 10:30
I257	i257	---	23/08/2007 08:44
I322	i322	---	22/08/2007 13:00
I144	i144	---	09/08/2007 12:15

Information

Patient's name: I374  
Birth Name: ---  
Birthdate (Sex): 01/01/1900 (F)

Institution name: ---  
Physician: ---  
Equipment: ---

Open

# Web solution (IMAGYS) for the GELA trial

