



# ALICE @ LIPI

Indonesian Institute of Sciences

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# CERN DELEGATION TO INDONESIA

(June 2012)



Meetings +  
Public Lectures +  
Audiences +  
....

## CERN and its Particle Physics Program

Professor Emmanuel Tsesmelis  
CERN (European Organization for Nuclear Research), Geneva, Switzerland  
Senior Physicist, Directorate Office and Visiting Professor, Oxford University

CERN is the European Laboratory for Particle Physics, the world's largest particle physics research centre. Founded in 1954, the Laboratory was one of Europe's first joint ventures and has become a premier example of international collaboration. CERN's subject of study is pure science and is concentrated on exploring the Universe's most fundamental questions, such as "What is it made of?" and "How did it come to be the way it is?" The Laboratory's high-tech tools, its particle accelerators and particle detectors, are amongst the world's largest and most complex scientific instruments. The Large Hadron Collider (LHC) is CERN's latest large accelerator project and it has launched a new era of research in particle physics. In this seminar, the Laboratory's primary aims in fundamental discovery science, research and development for innovative technology, as well as education and training initiatives, will be presented. Opportunities for international collaboration with CERN will also be outlined.

June 26, 2012, 14:00

Cinema Room, University of Indonesia Central Library



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## TURNING POINT...

**This is the good time for Indonesia to start joining the global experiments for the first time...**

→ *start it now or never !*

- Public exposure due to the discovery of Higgs particle
- Increasing awareness on S&T for sustainable developments

## INTERMEDIATE MEETING @ NTU

(March 2013)

# 1st IAS-CERN Workshop on Particle Physics and Cosmology

## NTU Singapore



F. Antonio  
(ALICE)



A. de Roeck  
(CMS)



W. Yifang  
(BESS)



Wan Ahmad  
(UM / CMS)

Many real and virtual meeting, discussion, ....

CONTINUE...

## More official meetings, lectures, ...

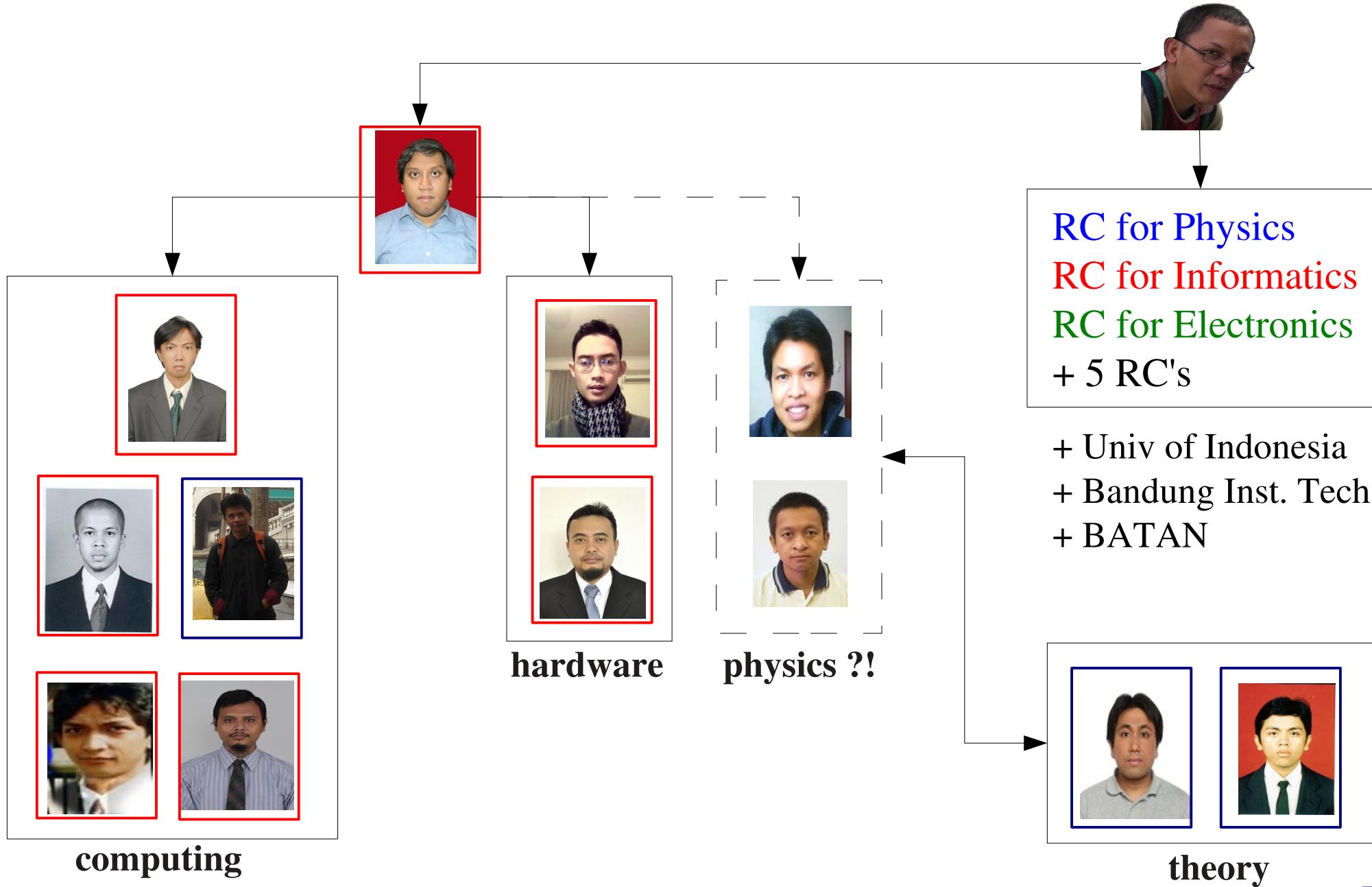


## LIPI – ALICE MoU (21 October 2013)

Finally...



# TEAM MEMBER



## EXECUTION

Procurement and installation for LIPI Grid → 1st dedicated cluster

HPC Workshop with ICTP Trieste → cluster administrators

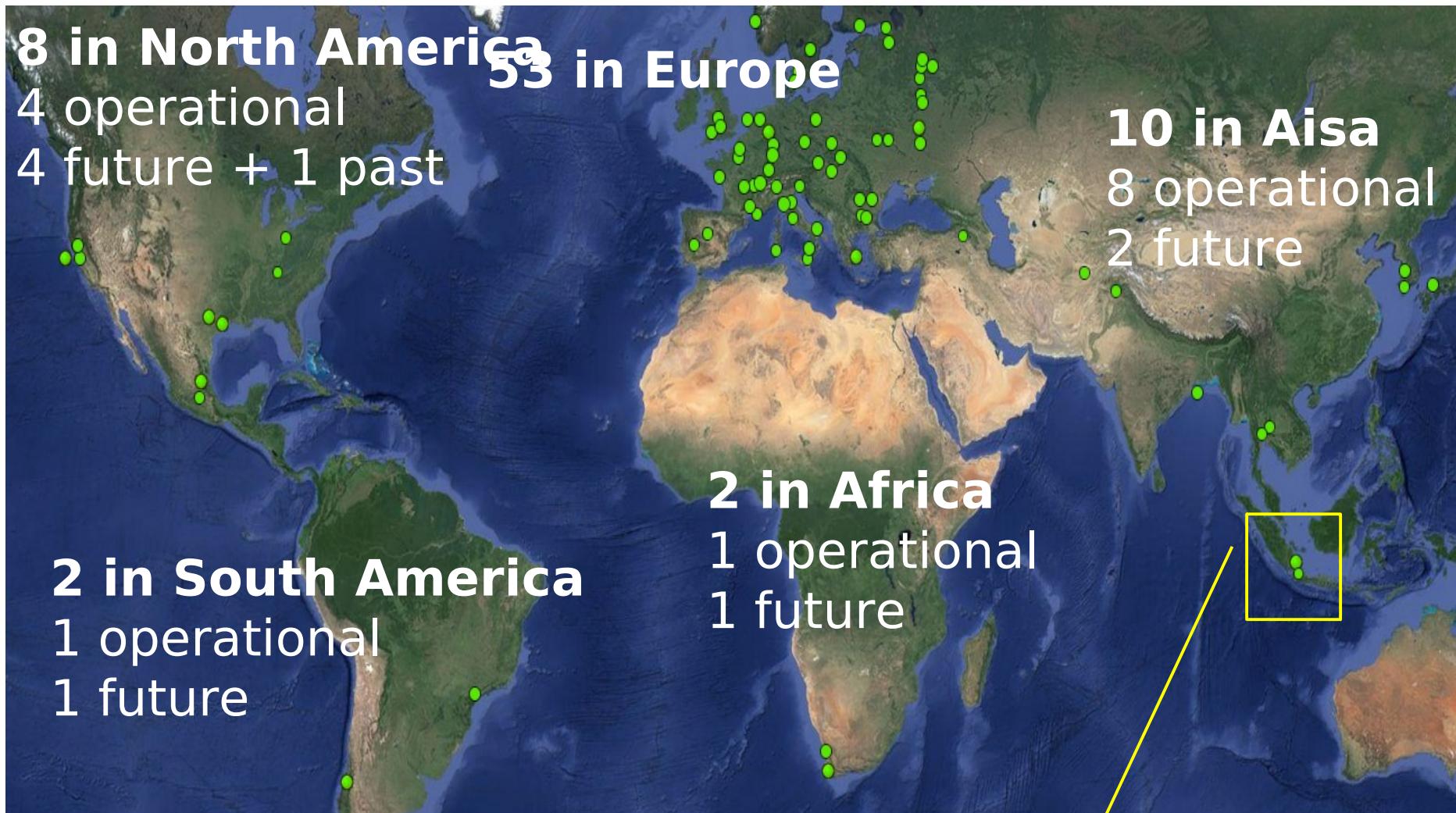
HPC Workshop for students → RC for Informatics

IC3INA conference → A. Uras

Recruitment of new staffs → Suharyo S. etc

Learning → Wuhan (Edi K.)  
Tsukuba (Rifki S., Taufiq W., LTH)  
Hiroshima (Rifki S., Taufiq W., LTH)  
Suranare (Esa P.)  
CERN : July (?!)

## LIPI GRID @monalisa



Cibinong & Bandung

LIPI GRID @monalisa

# Cibinong & Bandung



## DATA CENTER (established : end of 2013)

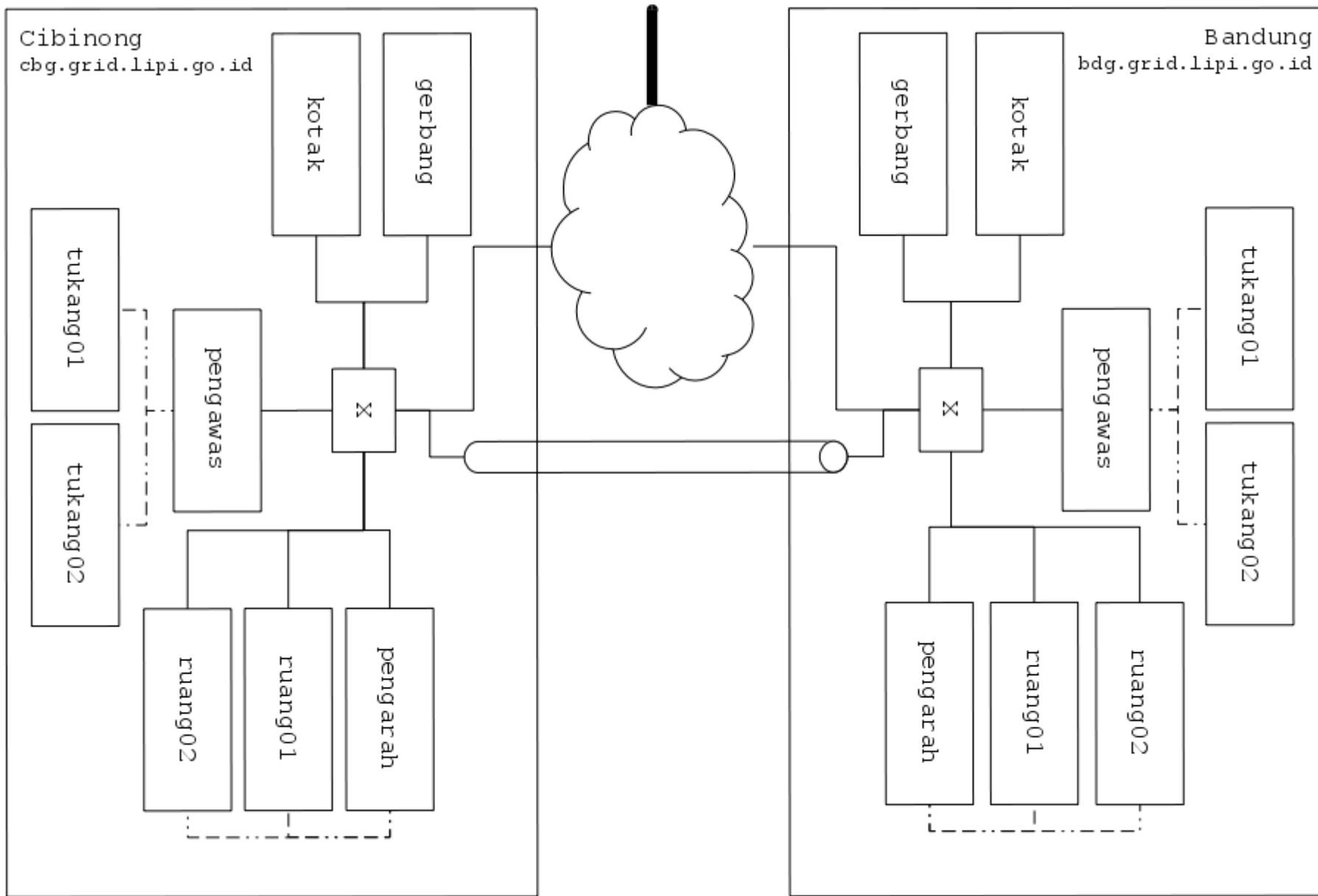


Cibinong site

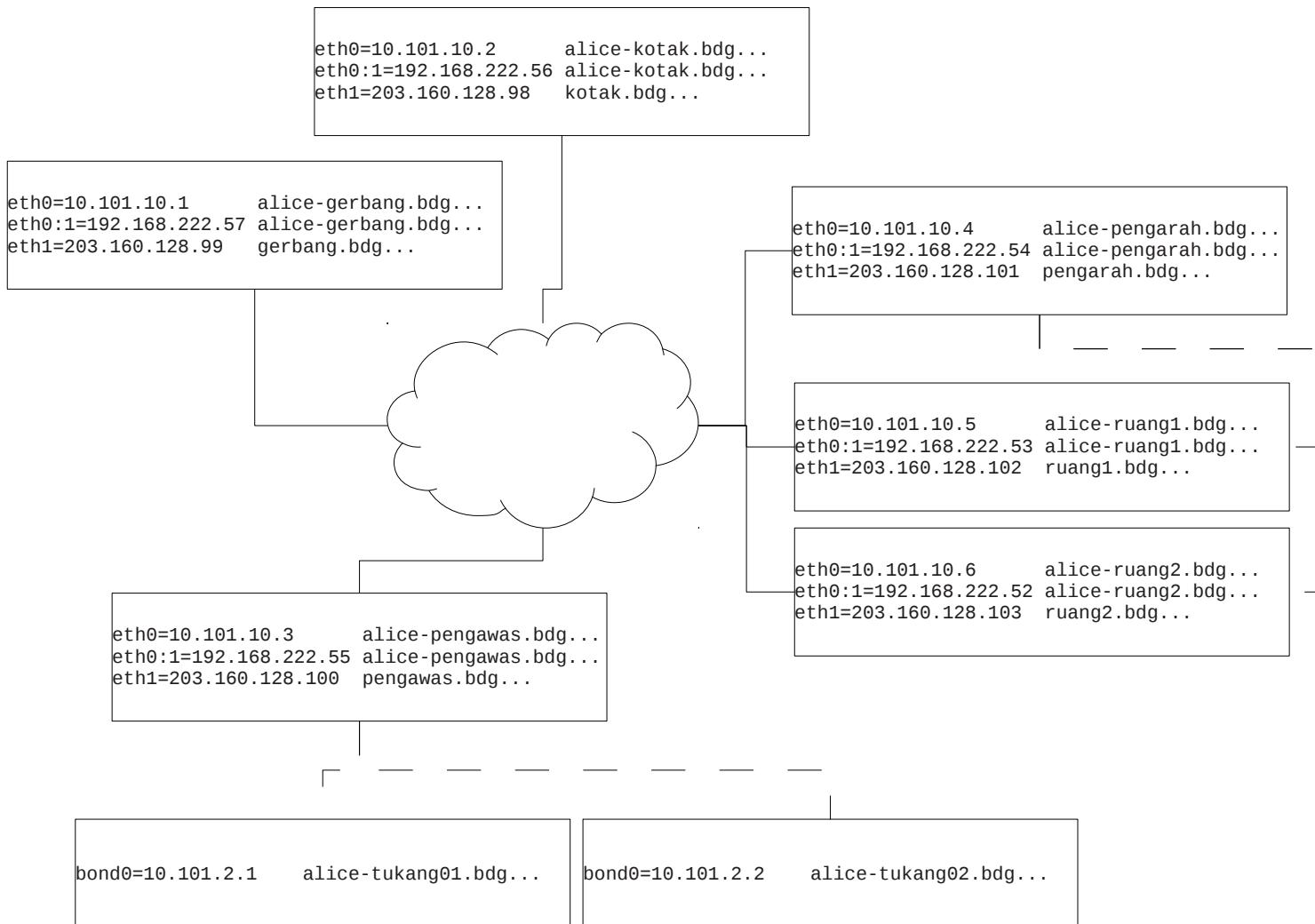


Bandung site

# LIPI GRID : ARCHITECTURE



# LIPI GRID : LOCAL ARCHITECTURE



## LIPI GRID : RESOURCES

	Cibinong	Bandung
# worker nodes	80	30
# with GPU	16	4
# cores	640	240
# shared space	8 TB	8 TB
# memory	8 GB / node	8 GB / node
# bandwidth	25 Mbps	25 Mbps
Operating System	CentOS 6.4	CentOS 6.4
Local connection	1 - 10 GBps	1 - 10 GBps

Note : the cluster was initiated under 'bioinformatics' national project intended for data mining and repository

## LIPI GRID : CURRENT STATUS

- VO Box is installed
- TO DO:
  - Host Certificates
  - Grid system installation with assigned certificates
  - Procurement
    - Additional memory per core
    - Additional shared space
    - Additional bandwidth

## FUTURE PLANS

### Near future :

- dedicated power supply → May 2014
- dedicated 1:1 symmetric network (FO) → May 2014
- temporary work at ALICE CERN → July – August 2014
- close collaboration with neighboring sites → Japan, Thai, Korea (?!)

### Future (till the end of 2015) :

- fulfill Tier-2 requirements through 2nd phase cluster
- establishing a **team for physics analysis** by recruiting new peoples  
Anton Wiranata – BNL, Nowo Riveli – PHOENIX

### Long future (till the end of 2016)

- Full member of ALICE (?!)

Everything is started from the scratch in (relatively) very short period and tight schedule...

Still lacking of 'experienced' human resources, and are working hard to fill the gap with the global counterparts.

→ **Need more helps and supervision to establish the team...**

**THANK YOU** *Terima-kasih*