A VO-Oriented AuthN/AuthZ Approach

Vincenzo Ciaschini

EGEE 2nd User Forum

Manchester, 9-11 May, 2007

www.eu-egee.org

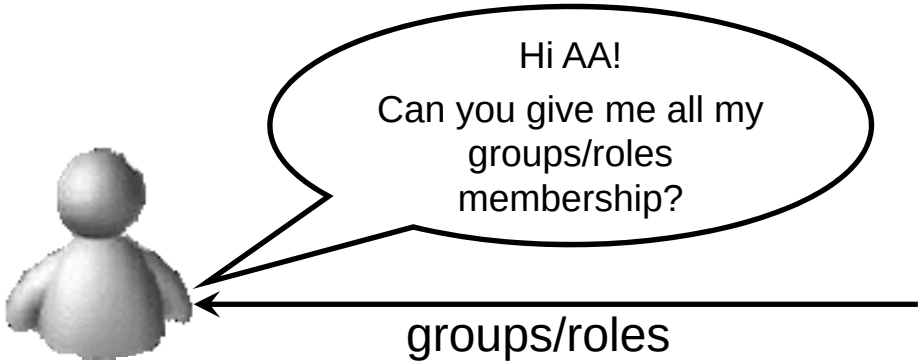
Information Society and Media

Problem Statement

User AuthN/AuthZ management on the grid is rapidly changing and evolving

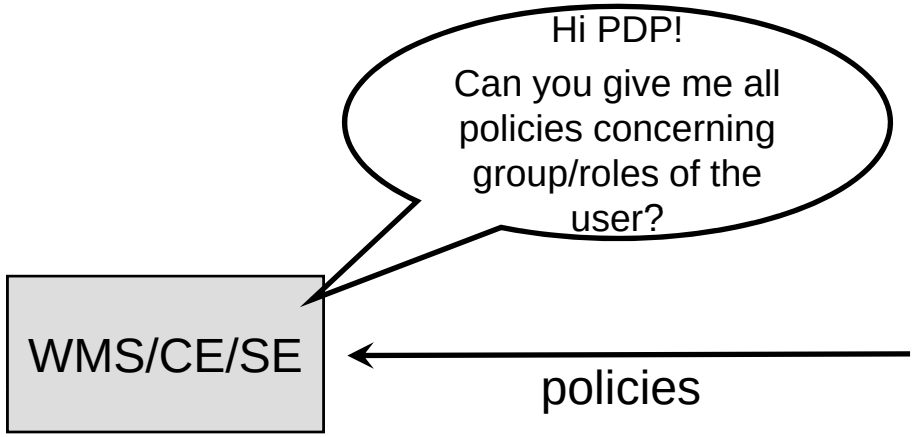
- VOs define/use/modify groups and roles.
- VOs require different execution priorities for different users.
- VOs require dedicated resources for specific users in delicate periods (see Data Challenges, etc.)
- funding agencies can force constraints affecting resource allocations.
- sites may want to enforce site-specific policies.

An AuthN/AuthZ infrastructure



AA

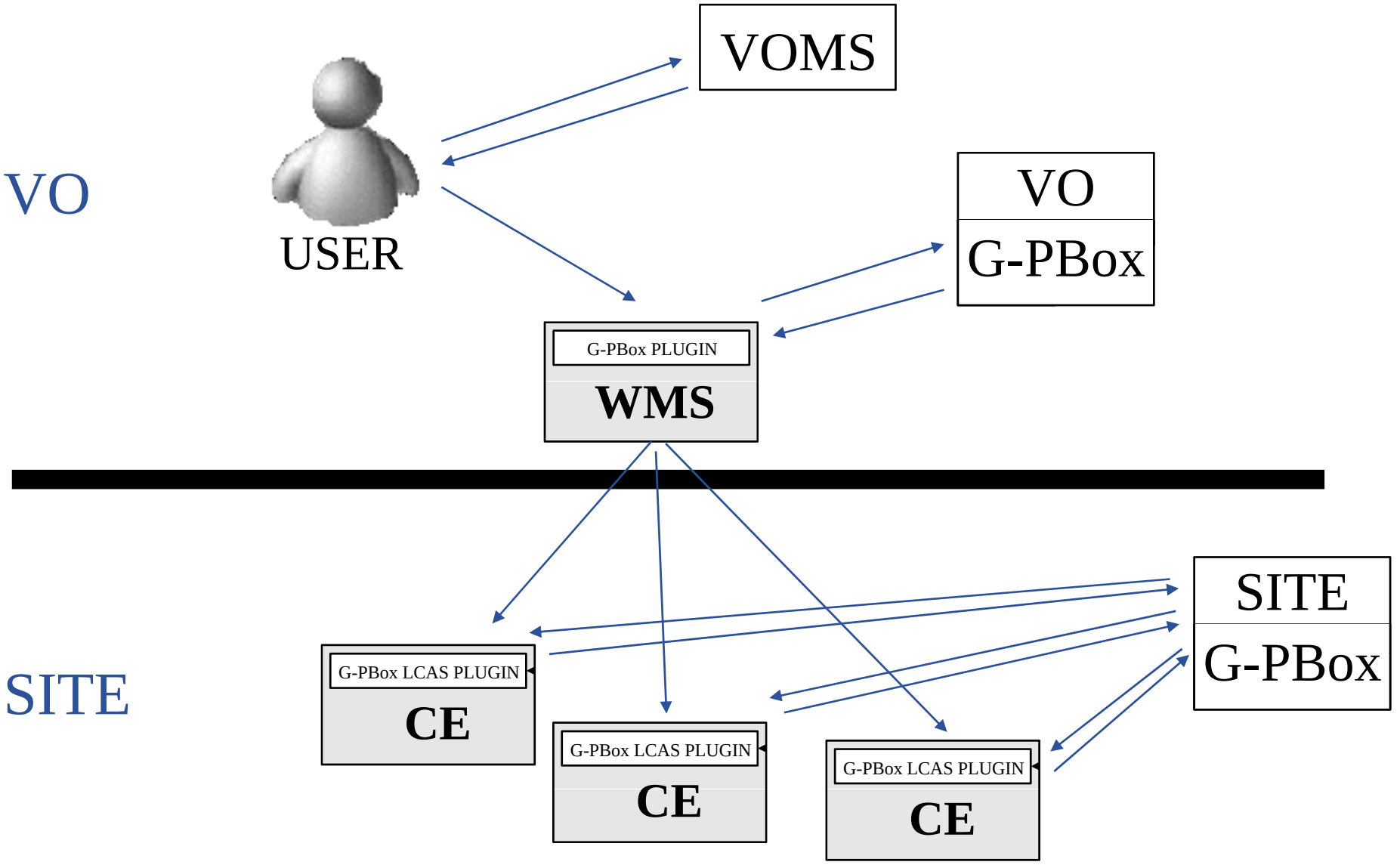
USER	GROUP
O=INFN/CN=John Smith	/atlas/production
...	...



PDP

GROUP	WHERE	HOW	WHEN
/atlas/production	Tier1s	HIGH PRIORITY	May 2007
/atlas	Tier1s and Tier2s	MID PRIORITY	ANY
/atlas/students	Tier2s	LOW PRIORITY	ANY

VOMS(AA) / G-PBox (PDP)

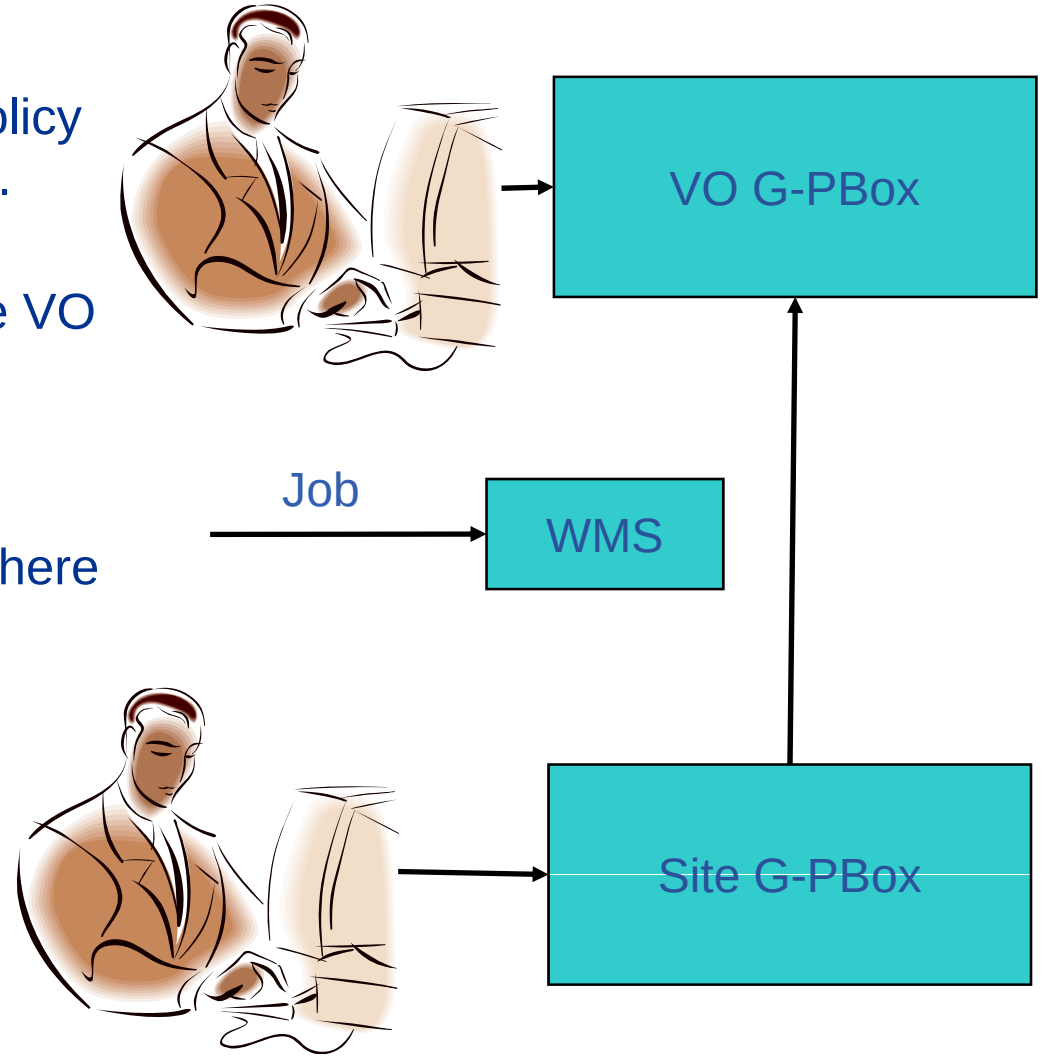


Policy classification

- **Site policies (originated by sites)**
  - Ban-list
  - …
- **VO policies (originated by VOs)**
  - Intra-VO priorities
  - …

Site policies: Ban lists

- **Banning users:**
  - The site admin writes a policy banning a user or a group.
  - The ban policy gets communicated back to the VO G-PBox.
  - Whenever a job is sent to WMS, policy evaluation happens and resources where the user is banned do not receive the job.

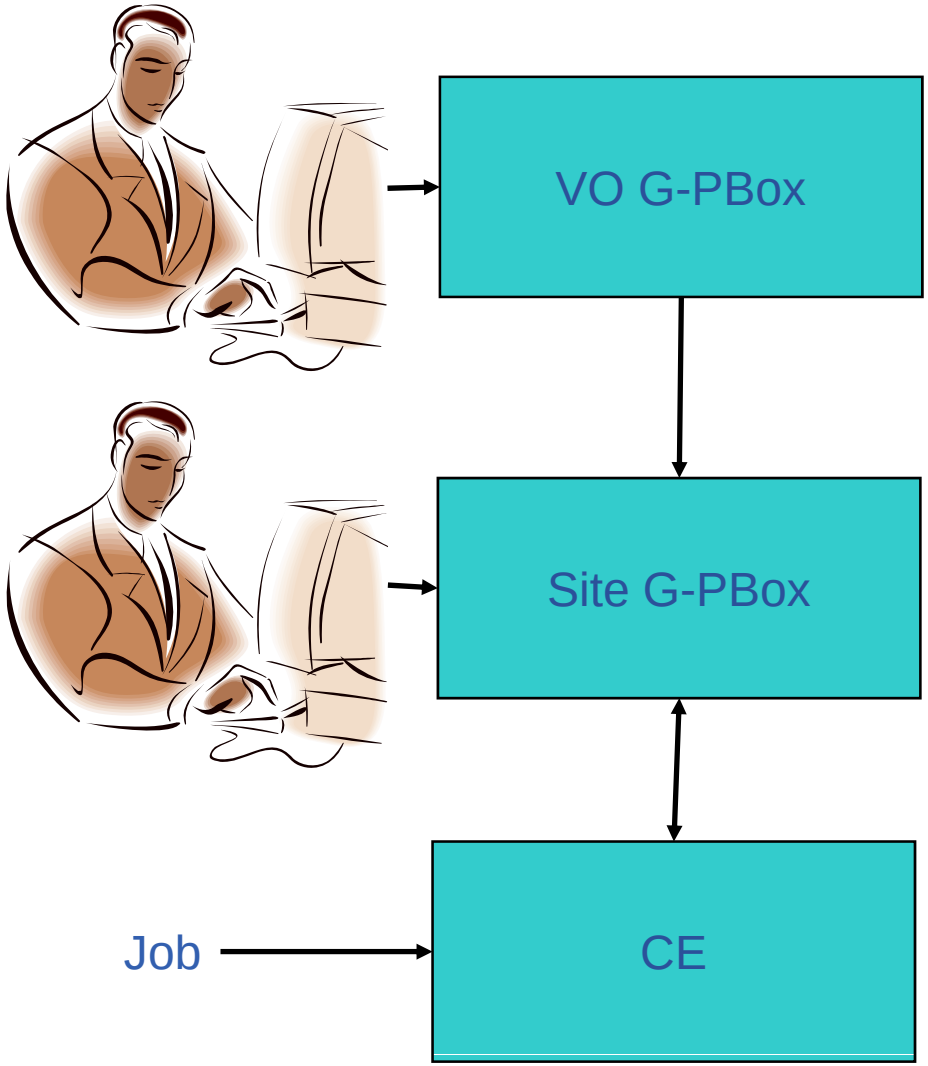


VO policies: Intra-VO priorities (1/2)

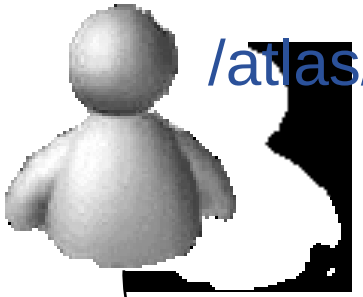
- **Step 1:**
  - Define a set of shares on CEs which implement the required priorities.
  - Publish into the IS the shares that are supported (without publishing details, i.e: policies, about how they are used).
  - This has already been solved and implemented!
- **Step 2:**
  - Send a Job to a CE which implements the correct share.
  - Let the CE map the job on the correct share.

VO policies: Intra-VO priorities (2/2)

- **Mapping jobs to shares: a G-PBox solution.**
  - The VO writes policies mapping VO groups into share names.
  - The sites write policies mapping share names into actual batch system shares.
  - The VO sends their mapping policies to the site. The two get combined.
  - Whenever a job is sent to a CE, evaluation happens and the job is mapped to the right account.



G-PBox and CE



/atlas/analisys

?

CE

Atlas_mid

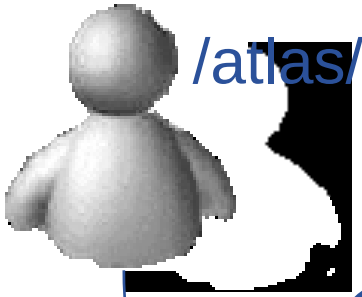
Atlas_mid

LSF QUEUE

Atlas Policies (dynamic)	
Atlas group	**ACBR**
/atlas/production	production
/atlas/analisys	analisys
/atlas/students	students

Site Policies (almost static)	
ACBR	**Unix ID**
production	atlas_high
analisys	atlas_mid
students	atlas_low

G-PBox and WMS



/atlas/analysis

?

Atlas Policies (dynamic)	
Atlas group	**ACBR**
/atlas/production	production
/atlas/analysis	analysis
/atlas/students	students

G-PBox Plugin

ATLAS WMS

ACBR: analysis

ATLAS CE — ACBR: analisys

ATLAS CE — ACBR: analisys

~~ATLAS CE~~ — ACBR: students

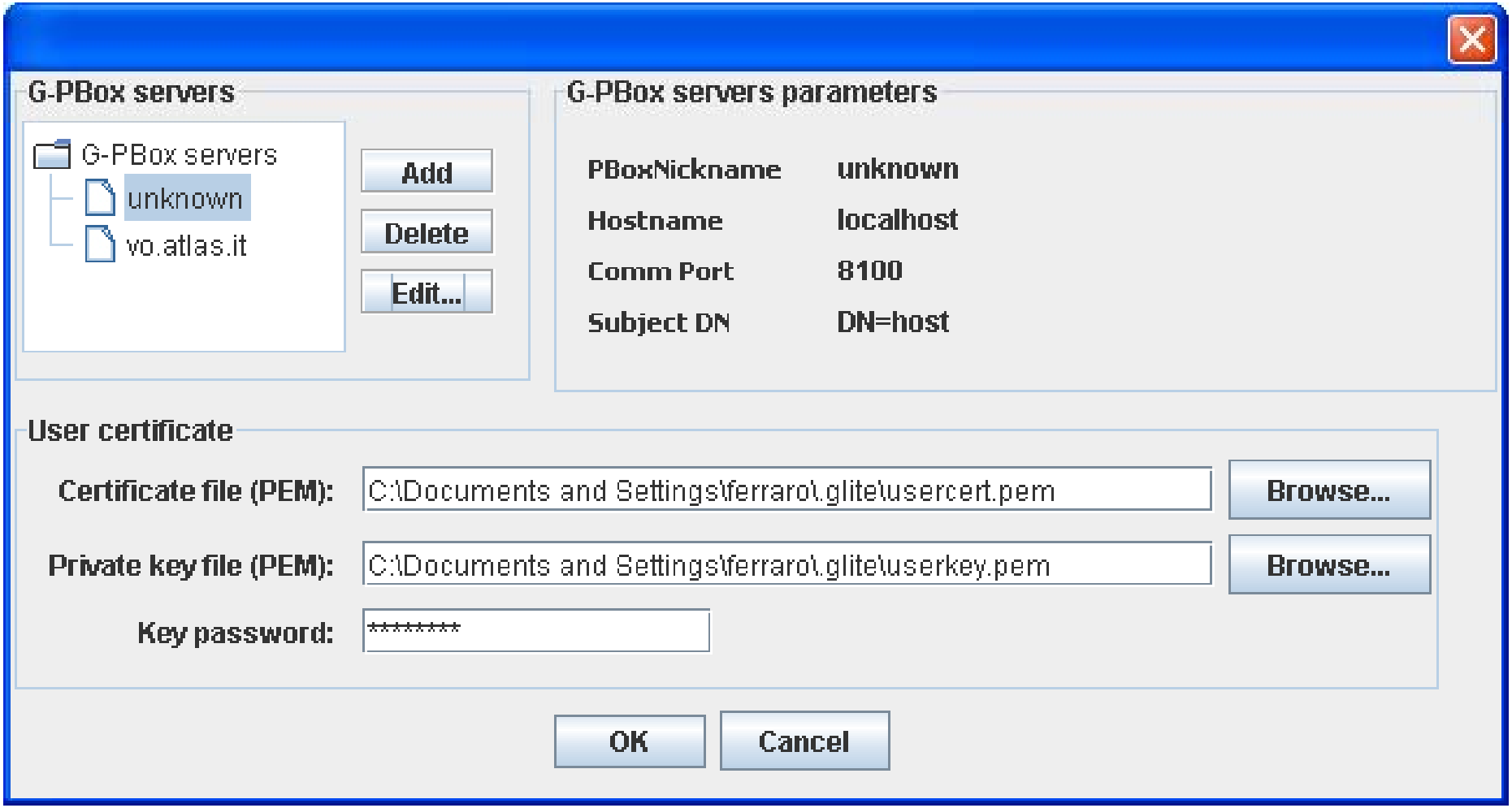
ATLAS CE — ACBR: analisys

~~ATLAS CE~~ — ACBR: students

Advantages

- **VO policies management**
  - If VO admins want to change relative priorities of different groups, all they need to do is change their policy in their VO, everything else is done by the system
- **Site independence and privacy**
  - Sites do not need to publish (ex BDII) the details of their internal setup
  - Sites are free to change their site-specific policies according to local constraints and rules

Screenshots



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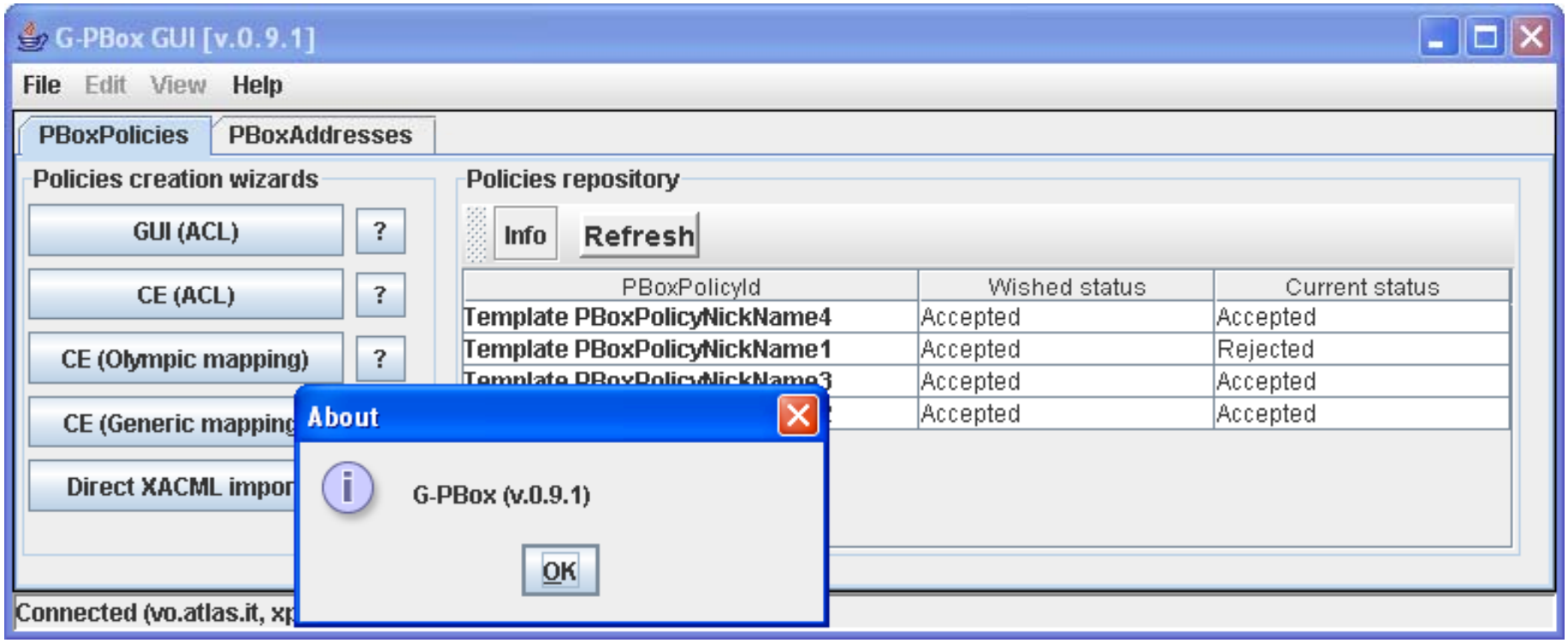

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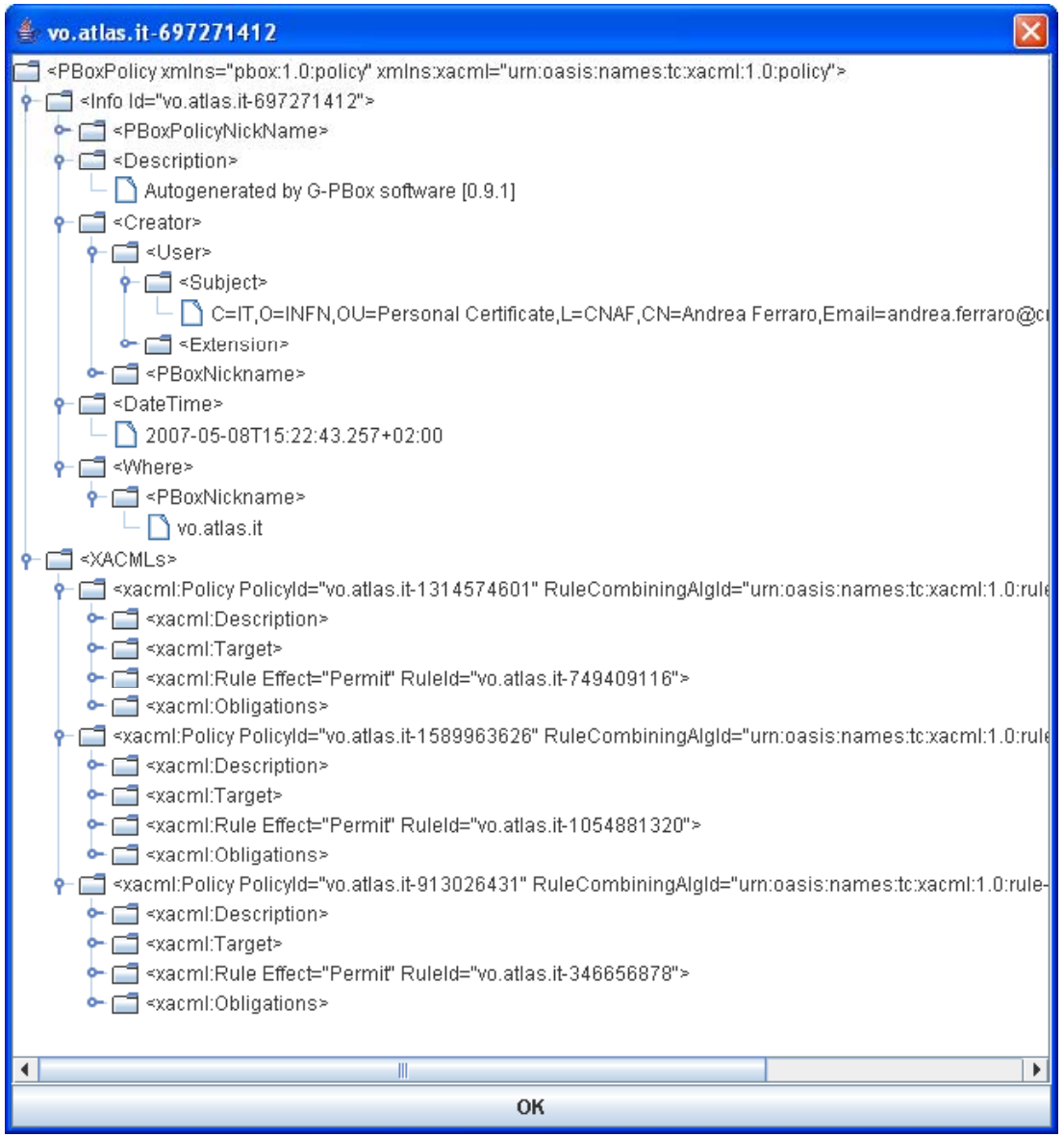

The Team

- Vincenzo Ciaschini
- Andrea Ferraro
- Alberto Forti
- Antonia Ghiselli
- Alessandro Italiano
- Davide Salomoni