Summary

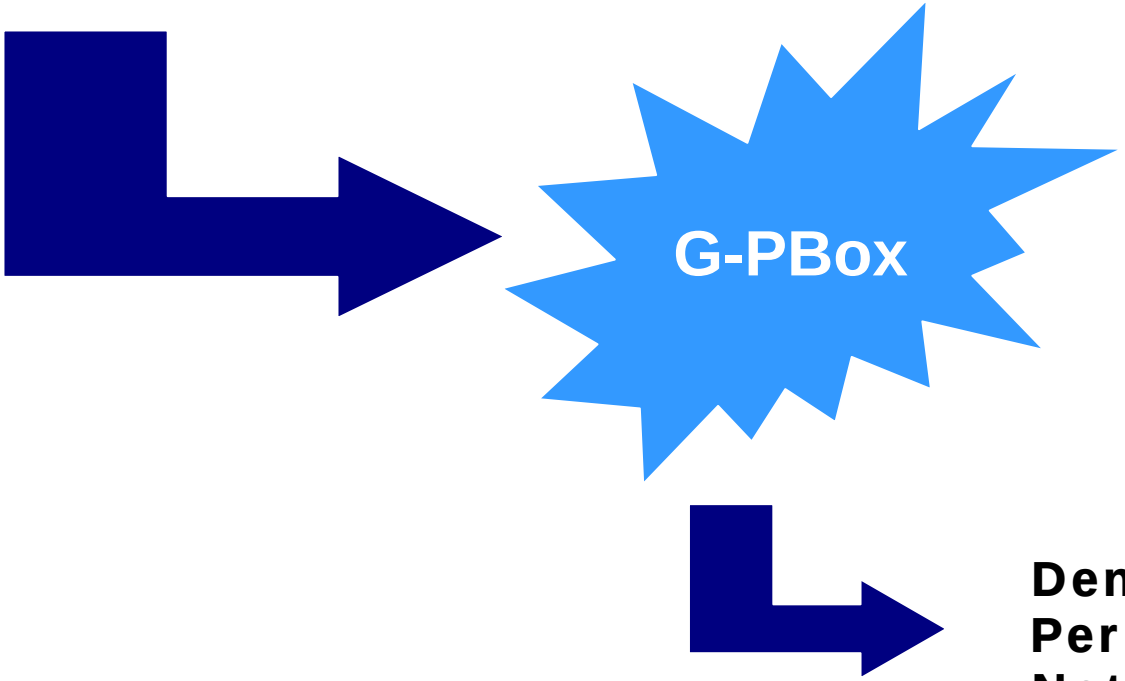
- G-PBox in brief
- G-PBox and the WMS
- Intra-VO priorities and fair-share management: our point of view
- G-PBox tests (by Atlas guys)

G-PBox in brief

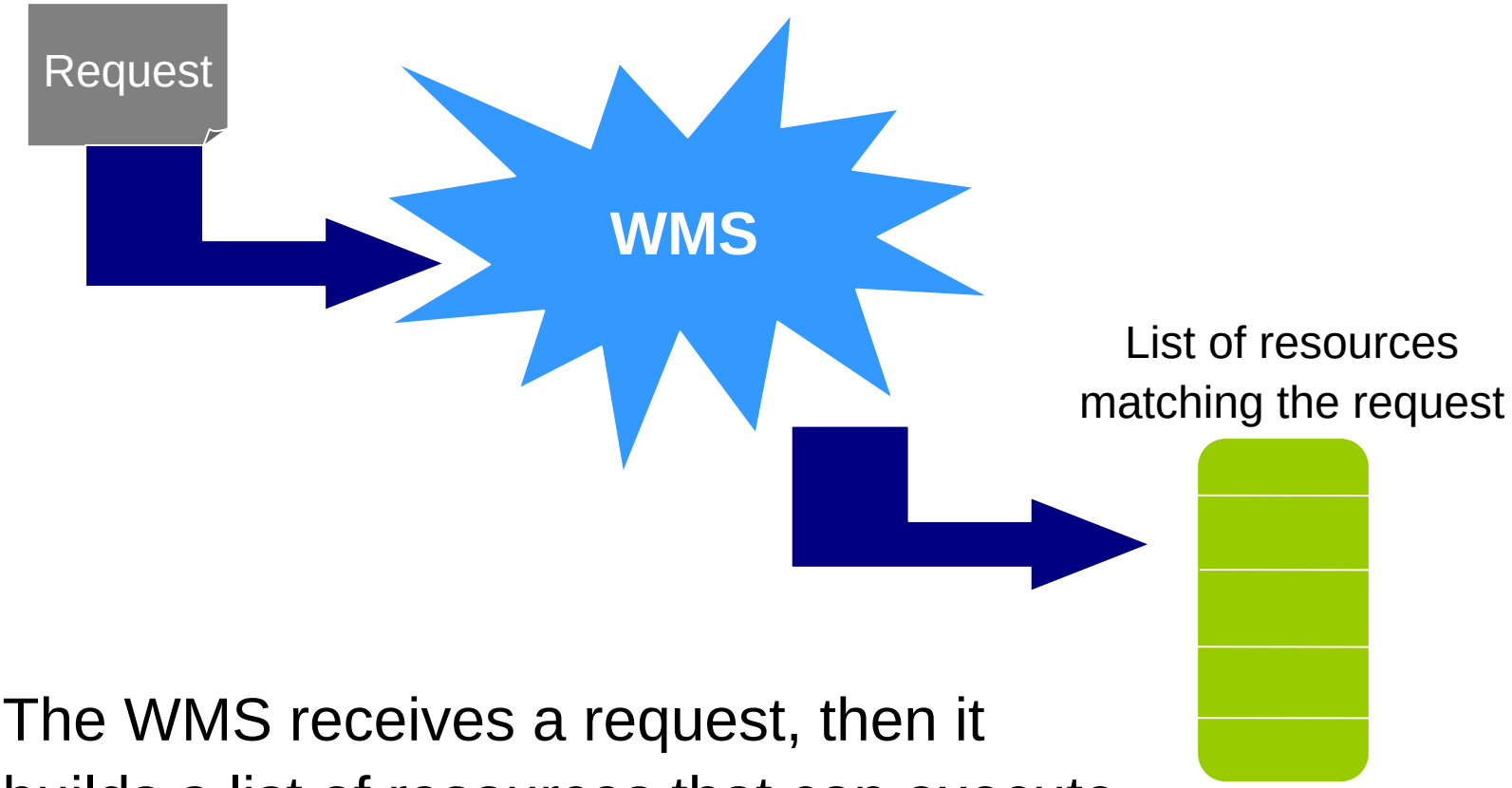
- **A policy framework for Grid environments**
- **Independet set of modules that can be “plugged in” the current architecture**
- **Standards compliant (ex. Oasis XACML for policies, GSI for communication, etc.)**
- **Distributed architecture**
- **Leveled list of G-PBoxes**
  - Based on administrative domains.
  - Able to express many types of policies depending on environmental parameters:
    - ACLs Policies (just deny or allow responses)
    - Management Policies (complex responses)

G-PBox and WMS

XACML request

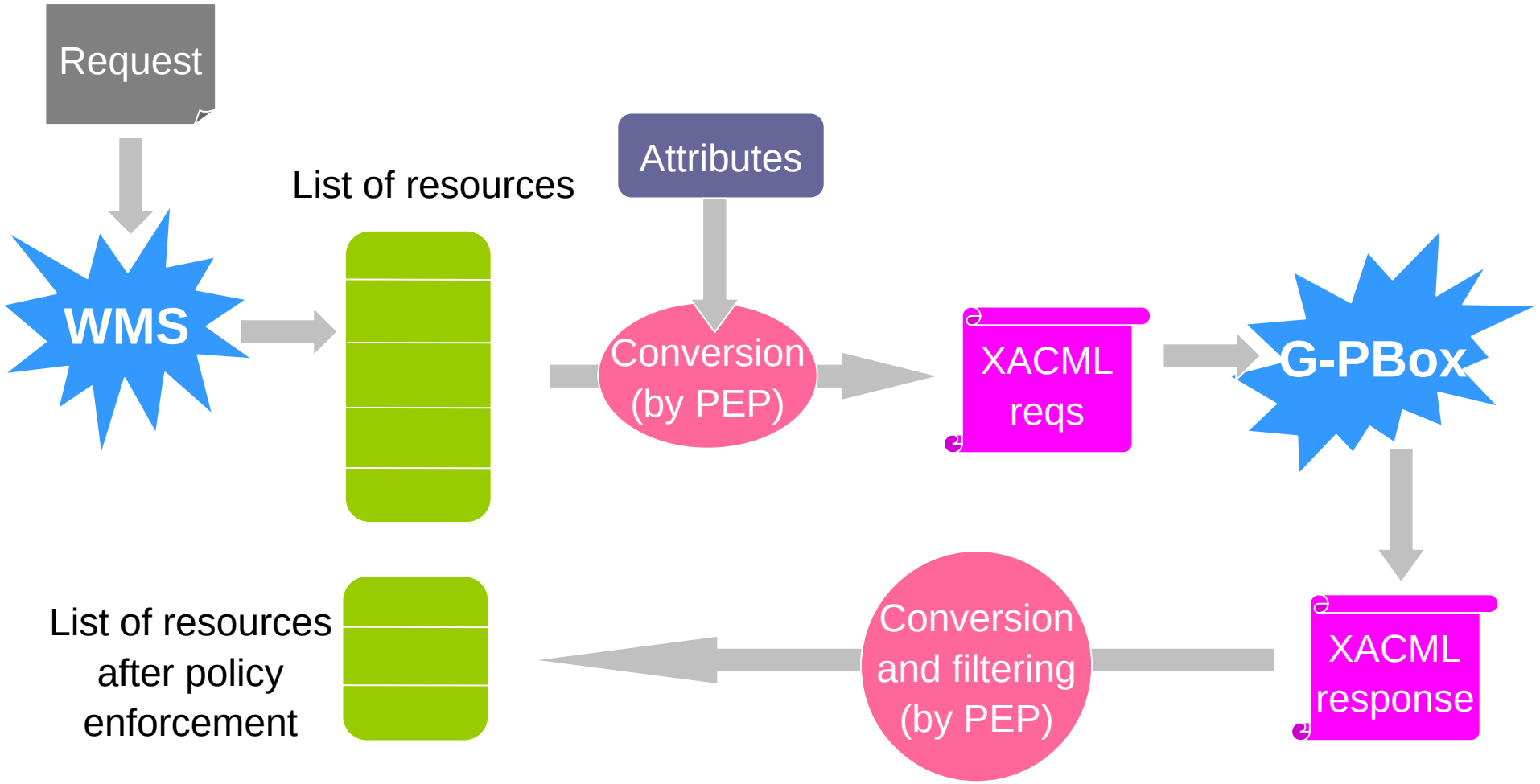


G-PBox and WMS (2)



The WMS receives a request, then it builds a list of resources that can execute the job.

G-PBox and WMS (3)



Intra-VO priorities and fair-share mgmt.

- **Now we describe a scenario where G-PBox is used to define and implement scheduling (priority and fair-share) policies.**
  - Will hinge on the fact that each VO has one or more subgroups
  - Will be easier if there is a separate queue for every VO

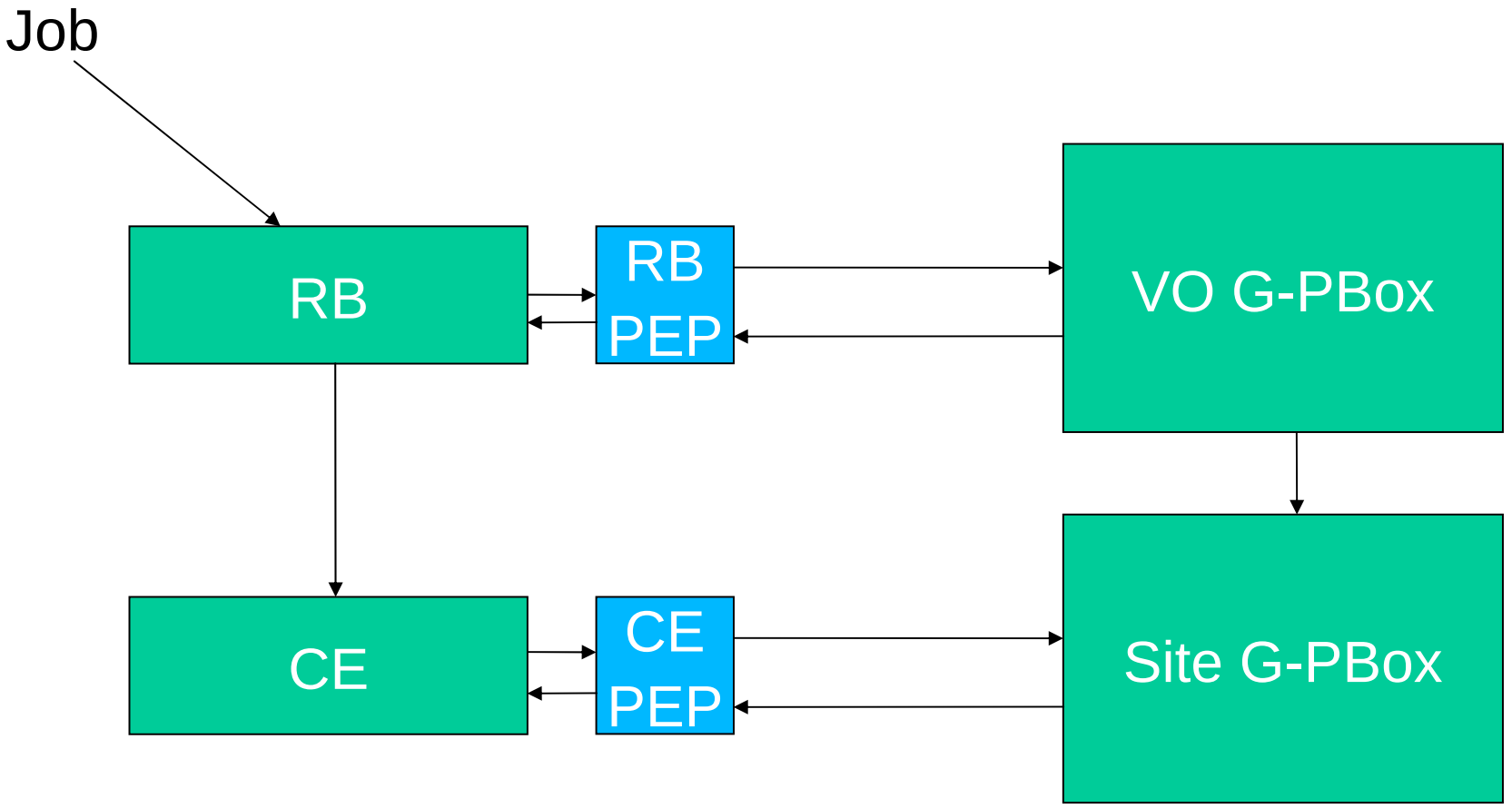
Intra-VO priorities and fair-share mgmt.

- **We define, for example, three type of services: GOLD, SILVER and BRONZE**
  - By leveraging the new VO-view feature of the GlueSchema
- **The local batch system (such as LSF) is configured to manage these service types: the 100% of resources assigned to the VO is divided as (following the VO-Site agreement)....**
  - GOLD get (statistically) 70% with priority on Silver and Bronze
  - SILVER get (statistically) 20% with priority on Bronze
  - BRONZE get (statistically) 10%

Intra-VO priorities and fair-share mgmt.

- **In the Information Service,**
  - we publish a Computing Element per VO
  - Within each CE, a VOView per service class
- **Users can be mapped on a specific usage class by policies depending on group/role membership.**
  - e.g: members of /atlas/prod get mapped on silver class on CEs.
  - Mapping between classes and local accounts is done by LCMAPS.
  - No changes of LCAS/LCMAPS files are ever required.
- **The “fair sharing” at the site level is obtained using the local batch system facilities, if they support it.**
  - E.g: LSF and MAUI

Validation Flow



Site G-PBox also contains policies mapping usage levels to local batch accounts.

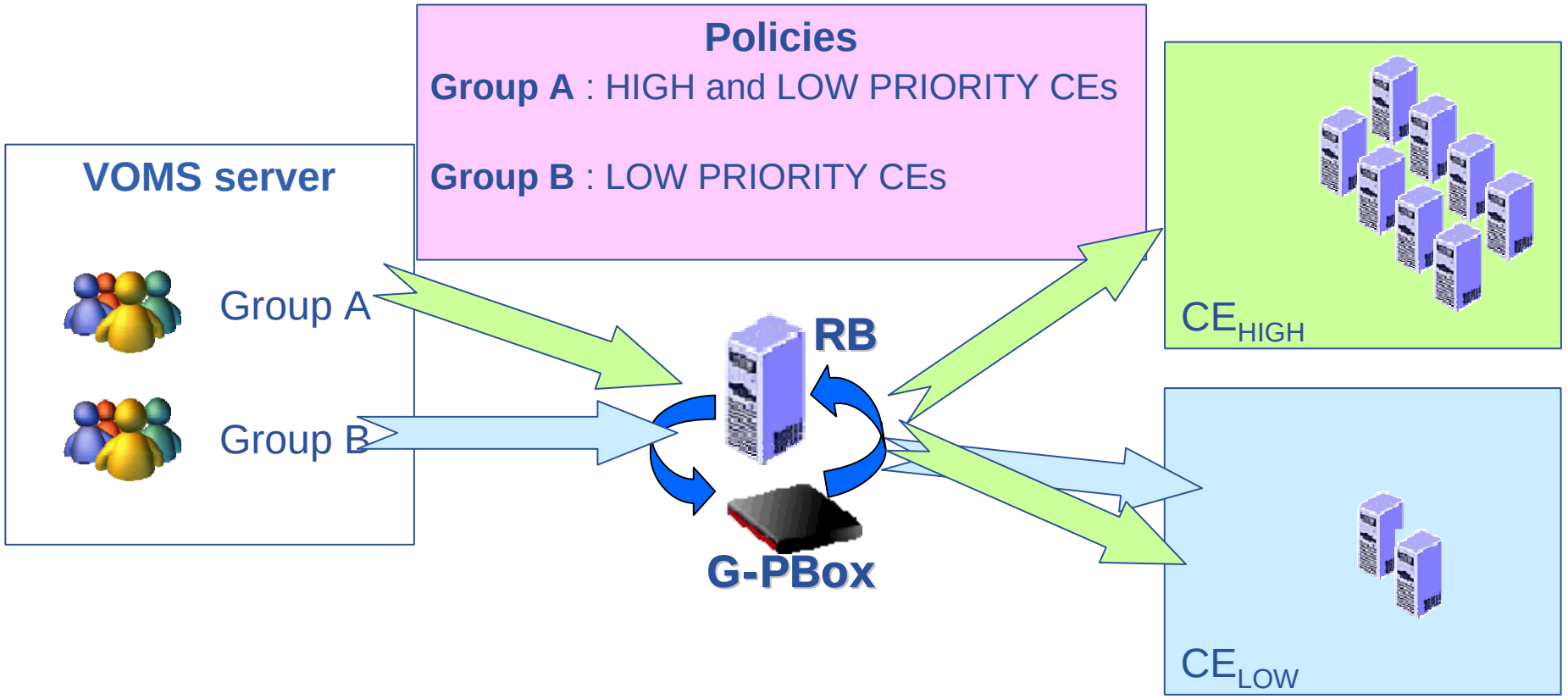
Report on past G-PBox tests

G-PBox tests: Effective policies

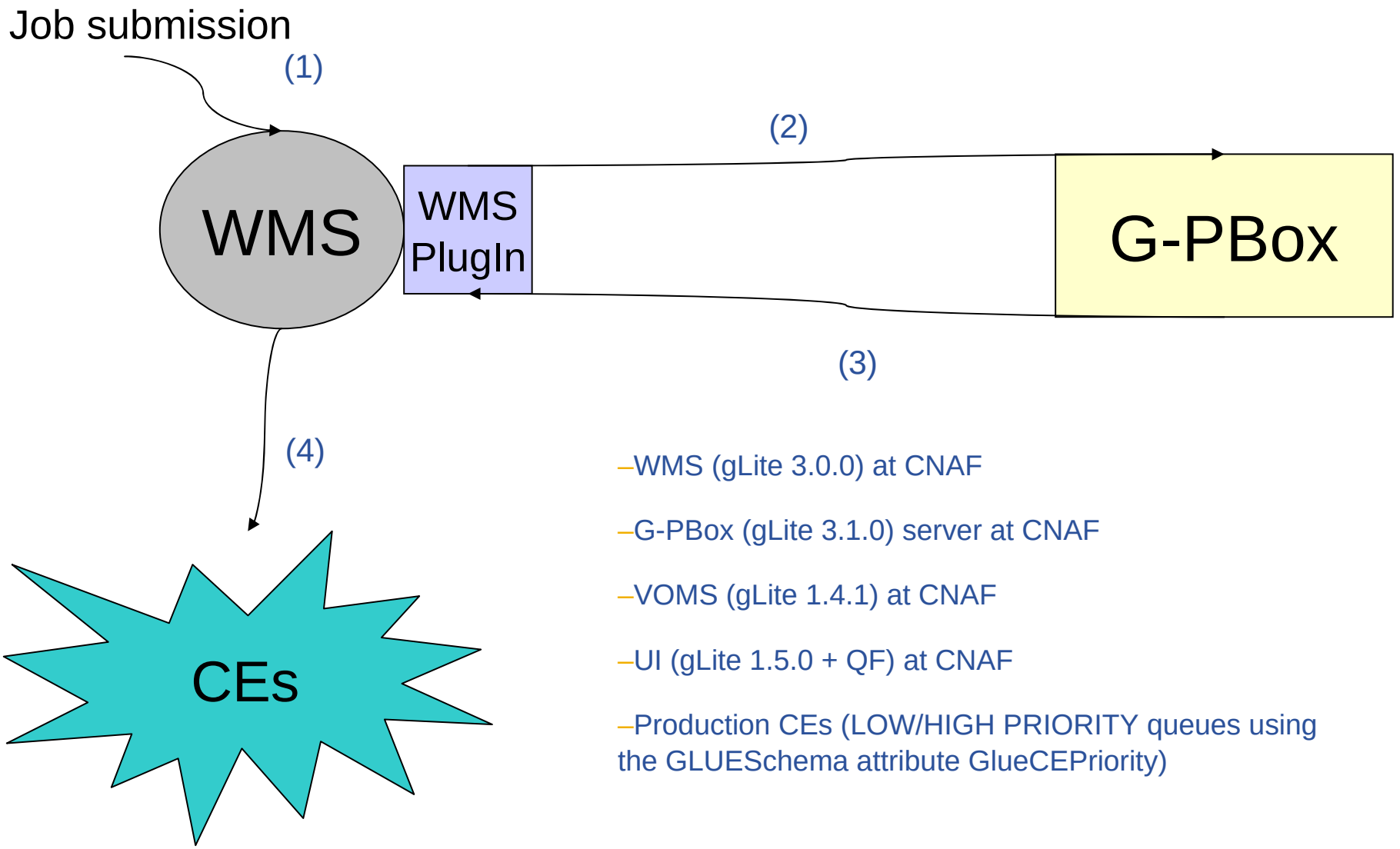
- /atlas/analysis — LOW PRIORITY CEs
- /atlas/production — LOW AND HIGH PRIORITY CEs

G-PBox tests: policies

Job submission Policies (for Atlas VO)



G-PBox tests: G-PBox and WMS



- WMS (gLite 3.0.0) at CNAF
- G-PBox (gLite 3.1.0) server at CNAF
- VOMS (gLite 1.4.1) at CNAF
- UI (gLite 1.5.0 + QF) at CNAF
- Production CEs (LOW/HIGH PRIORITY queues using the GLUESchema attribute GlueCEPriority)

G-PBox tests: results

- The G-PBox XML-DB was populated with 256 policies: the effective ATLAS policies plus 250 fake policies
- ATLAS submitted:
  - **518 jobs by /atlas/production users**
  - **915 jobs by /atlas/analysis users**
- Atlas jobs were near-real experiment jobs and were submitted through the ATLAS own submission system
- All Atlas requests submitted to the WMS were correctly elaborated by the G-PBox server and the average WMS/G-PBox interaction lasts 0.03s

Questions?

- **G-PBox team**
  - Vincenzo Ciaschini
  - Gian Luca Rubini
  - Andrea Ferraro
  - Andrea Caltroni
  - Marco Cecchi (WMS interaction)
- **Intra-VO Fair-share and priorities proposal**
  - The above, plus:
    - Sergio Andreozzi, Antonia Ghiselli, Francesco Giacomini, Alessandro Italiano, Davide Salomoni,
- **G-PBox home page**
  - http://infnforge.cnaf.infn.it/gpbox/