

# Information Systems

from an operational perspective

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- 4 observations from an operations guy
  - Bootstrapping
  - We're not all islands
  - Structure matters
  - Provenance

# Bootstrapping



- GOCDDB has a site list ...
- ... which feeds a top level BDII ...
- ... which is used to configure SAM ...
- ... which is used to test sites ...
- ... from which Gridview calculates status  
...
- ... from which FCR removes sites from  
VO BDIIs !





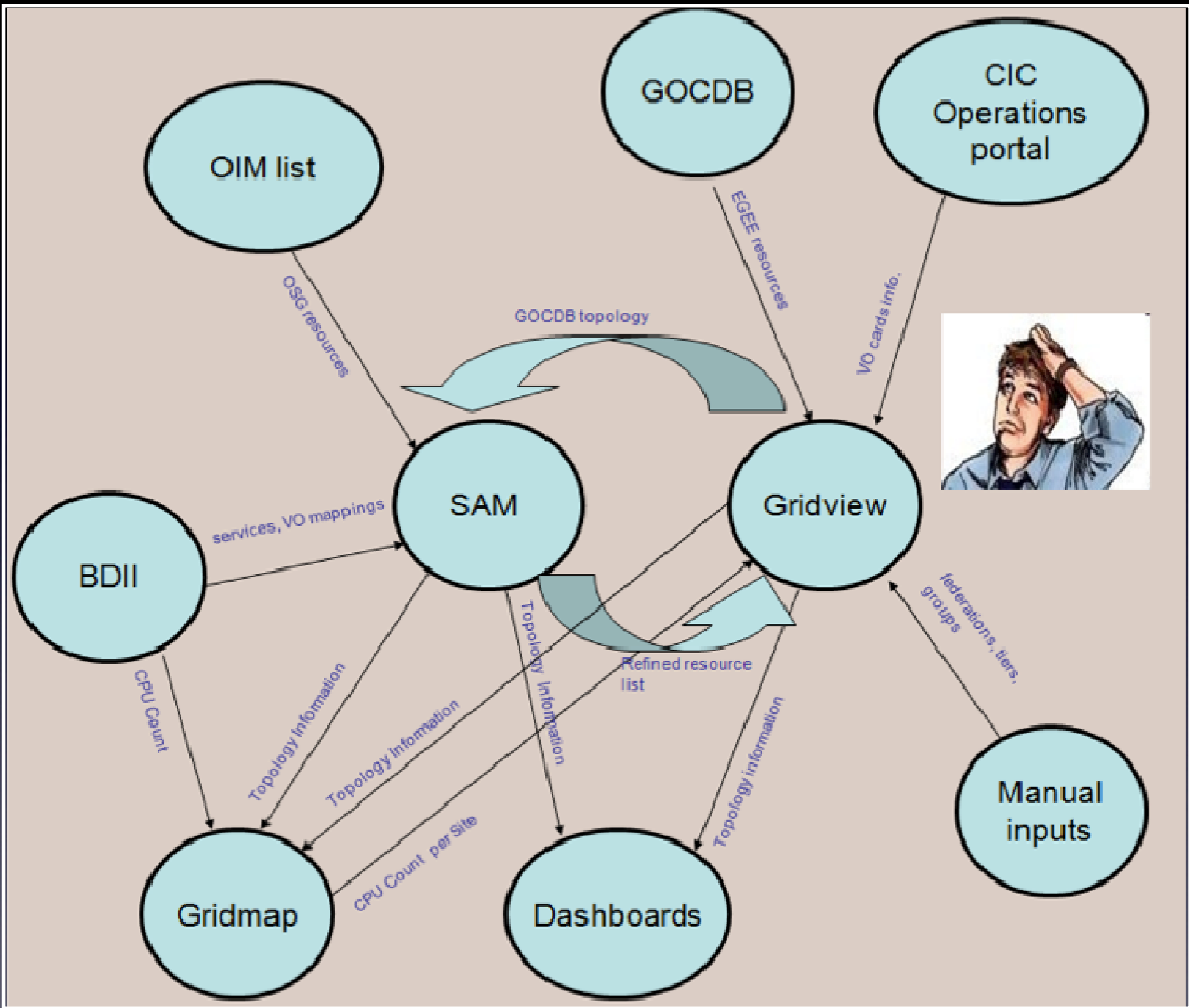
How we configure our grids



How can we make this simpler ?

We're not all islands







Inconsistencies kill  
operations



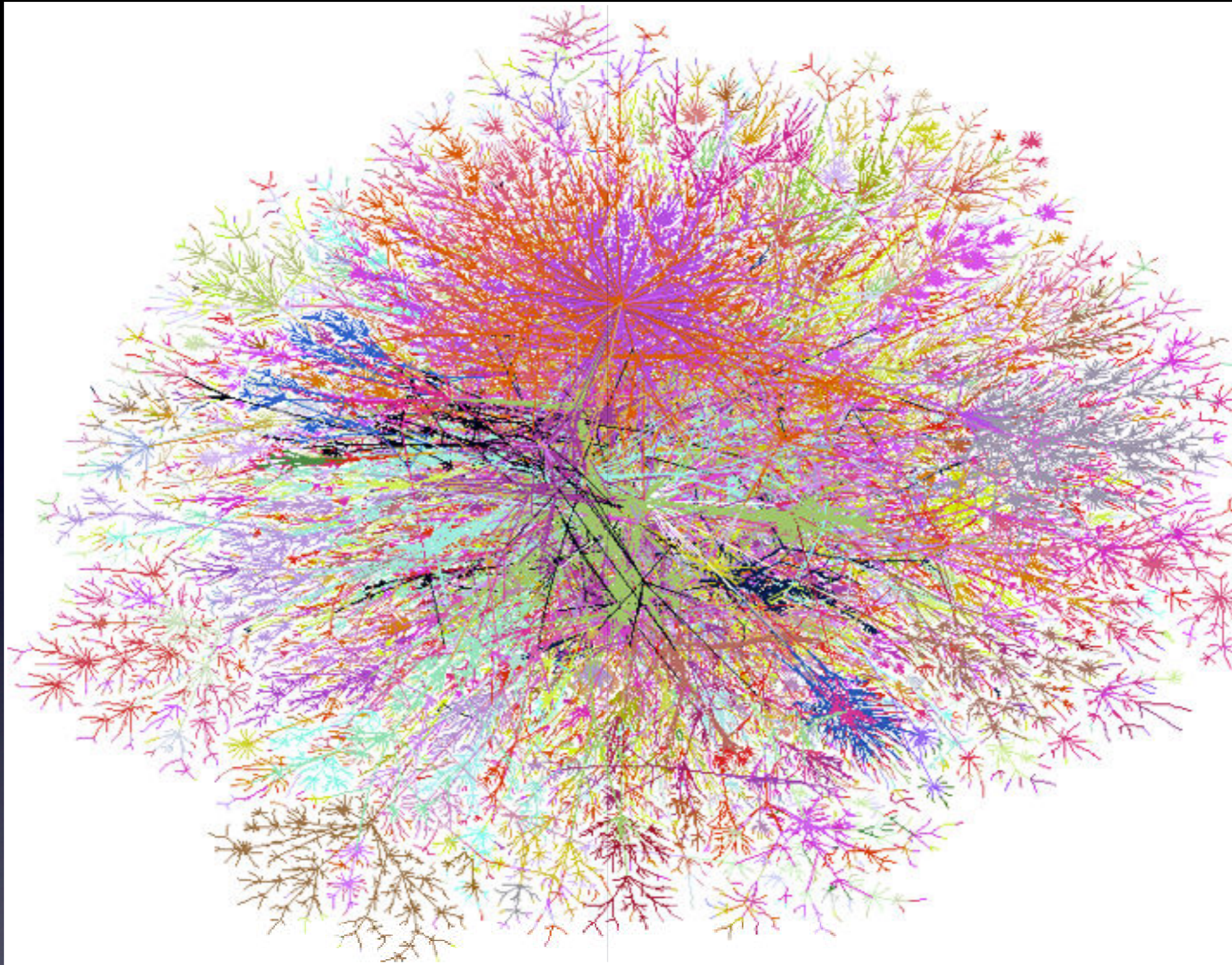






# Roles and responsibilities





Structure matters



- Attributes are very important for middleware
  - “Exactly what do you do and how are you doing now”
- Relationships are very important for operations
  - “Who are you related to. What groups do you belong to”

Everyone's  
relationships are  
different

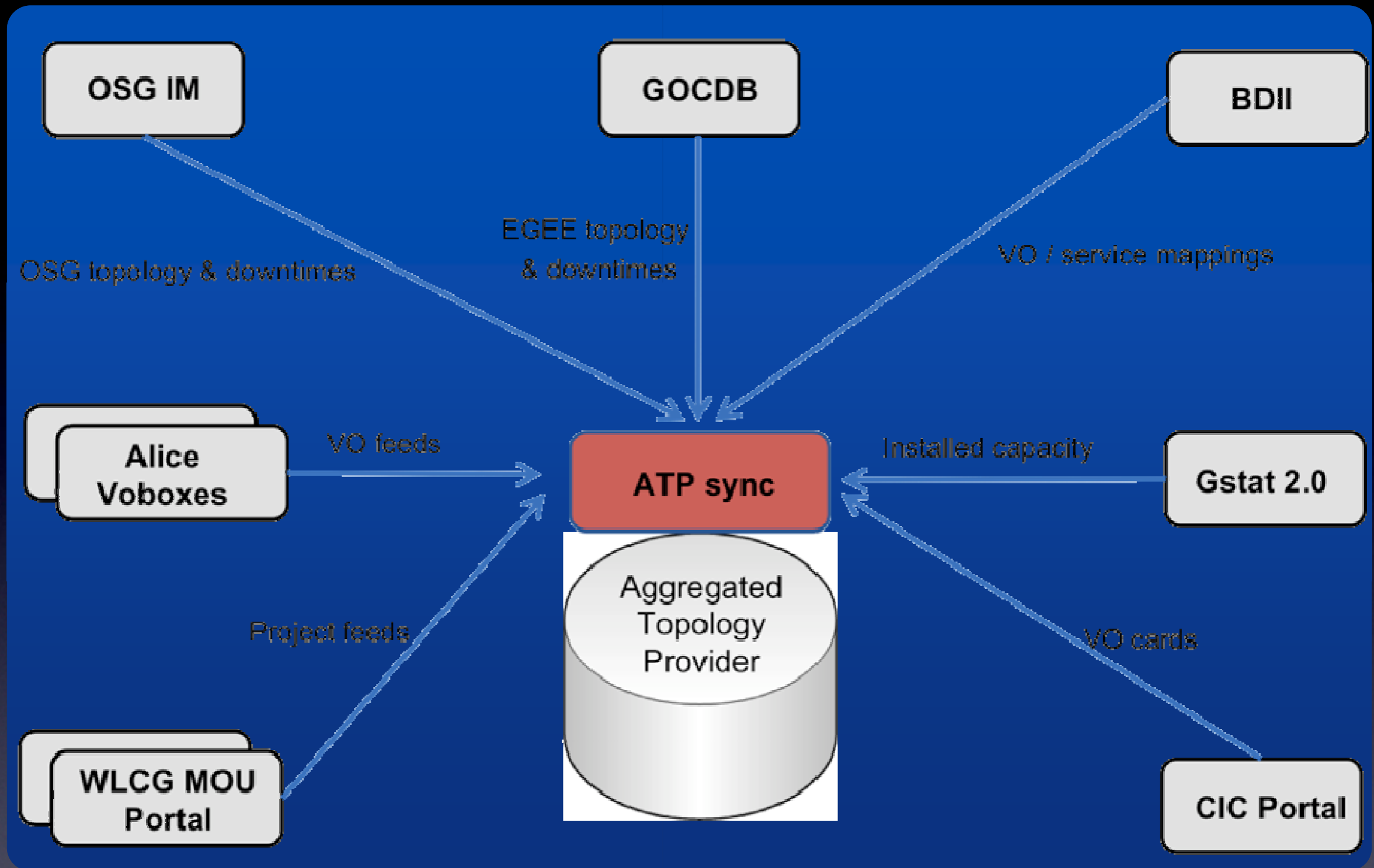


Infrastructures 'own'

resources

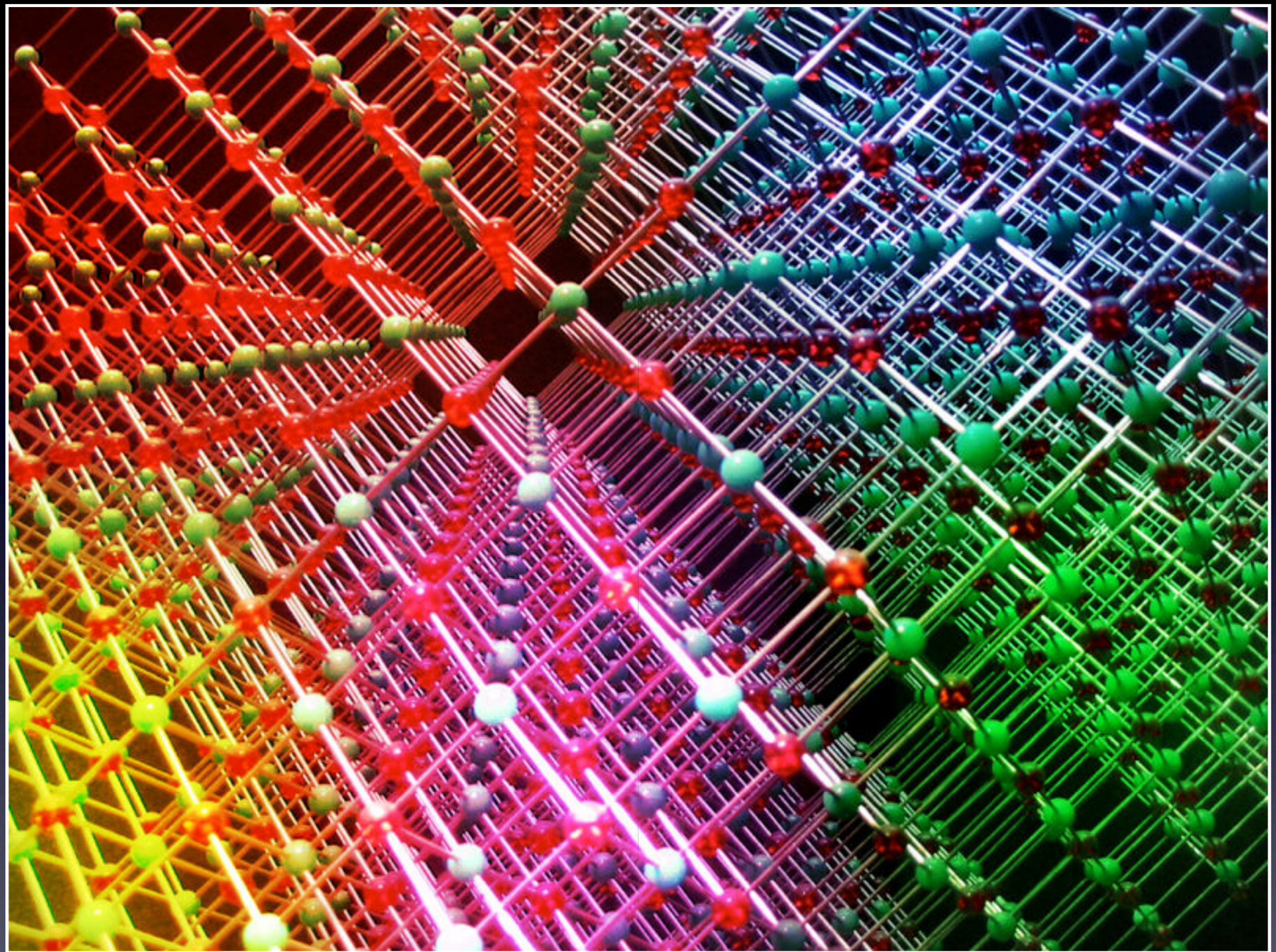
VOs 'name'

resources



# Aggregate topology provider





More connections are better



# Provenance



- Who really published this data and should they have ?
- Canonical Example: Single LFC for a VO,
  - but anyone can publish one
  - ==> Operational problems ;(



- How do we allow anyone to publish but allow the act of publication to be 'signed off' by another entity?





# What is @ the Grid?



**BDII**

**VO**

**display**

Total sites: 597

Total CEs: 551

Total SEs: 482

Total gCEs: 0

Total LFCs: 0

Total RBs: 0

Total FTSs: 13

Total gRBs: 0

Total GridICEs: 0

OPS VO sites at lcg-bdii.cern.ch

OPS VO services at lcg-bdii.cern.ch

- UKI-SOUTHGRID-OX-HEP
- GRIF-APC
- FNAL\_FERMIGRID
- BG04-ACAD
- TUDresden-ZIH
- FZK-LCG2
- UKI-SCOTGRID-GLASGOW
- IFIC-LCG2
- LCG\_KNU
- RWTH-Aachen
- SE-SNIC-T2
- PAKGRID-LCG2
- NO-NORGRID-T2
- UKI-LT2-Brunel
- pic
- UFlorida-PG
- DESY-HH
- TW-NTCU-HPC-01
- CFP-IST
- UKI-NORTHGRID-SHEF-HEP
- IN2P3-CC-T2
- CNR-PROD-PISA
- UKI-SCOTGRID-GLASGOW
- CERN-PROD

# What is at the Grid ?



What should be on  
the grid ?



Proposal :  
What should be on  
the grid ?



- Summary :
- Structure and relationships
- Consistency
- Single (traceable) source of information
- Allow VO/Projects/ops to annotate
- Provenance
- Things we can write tests against





Make your grumpy ops guy happy



Thank you.



