# The etomic active probing infrastructure
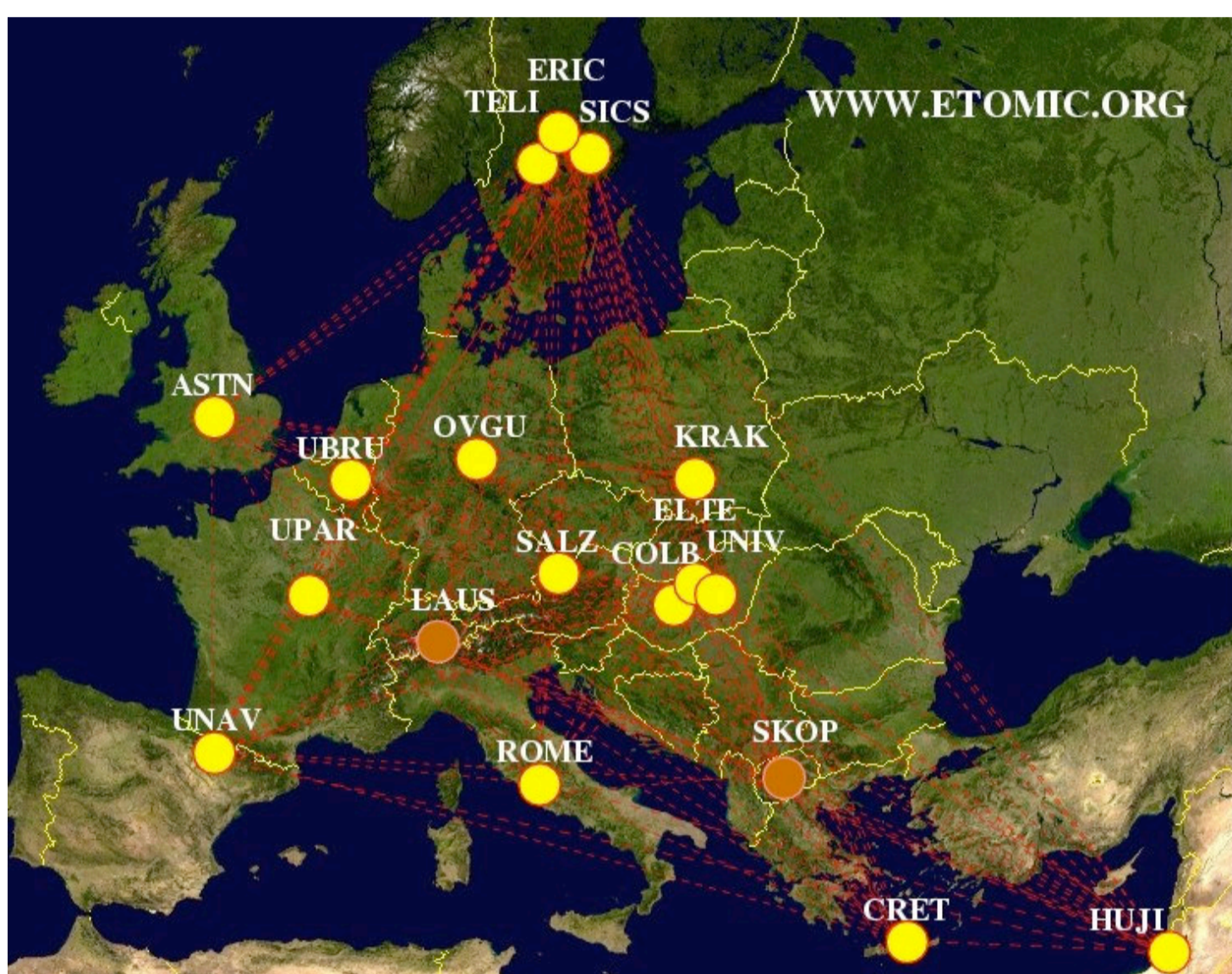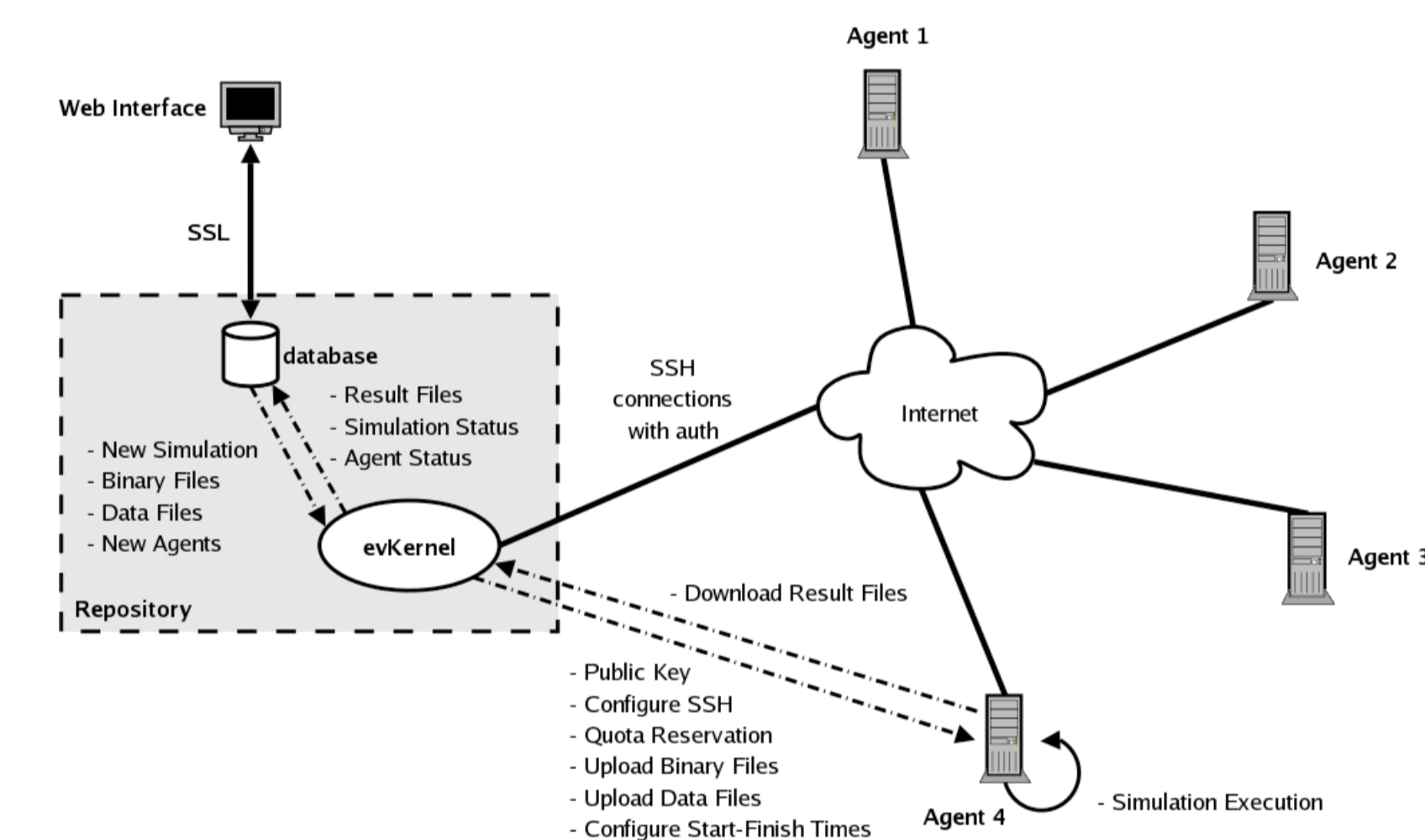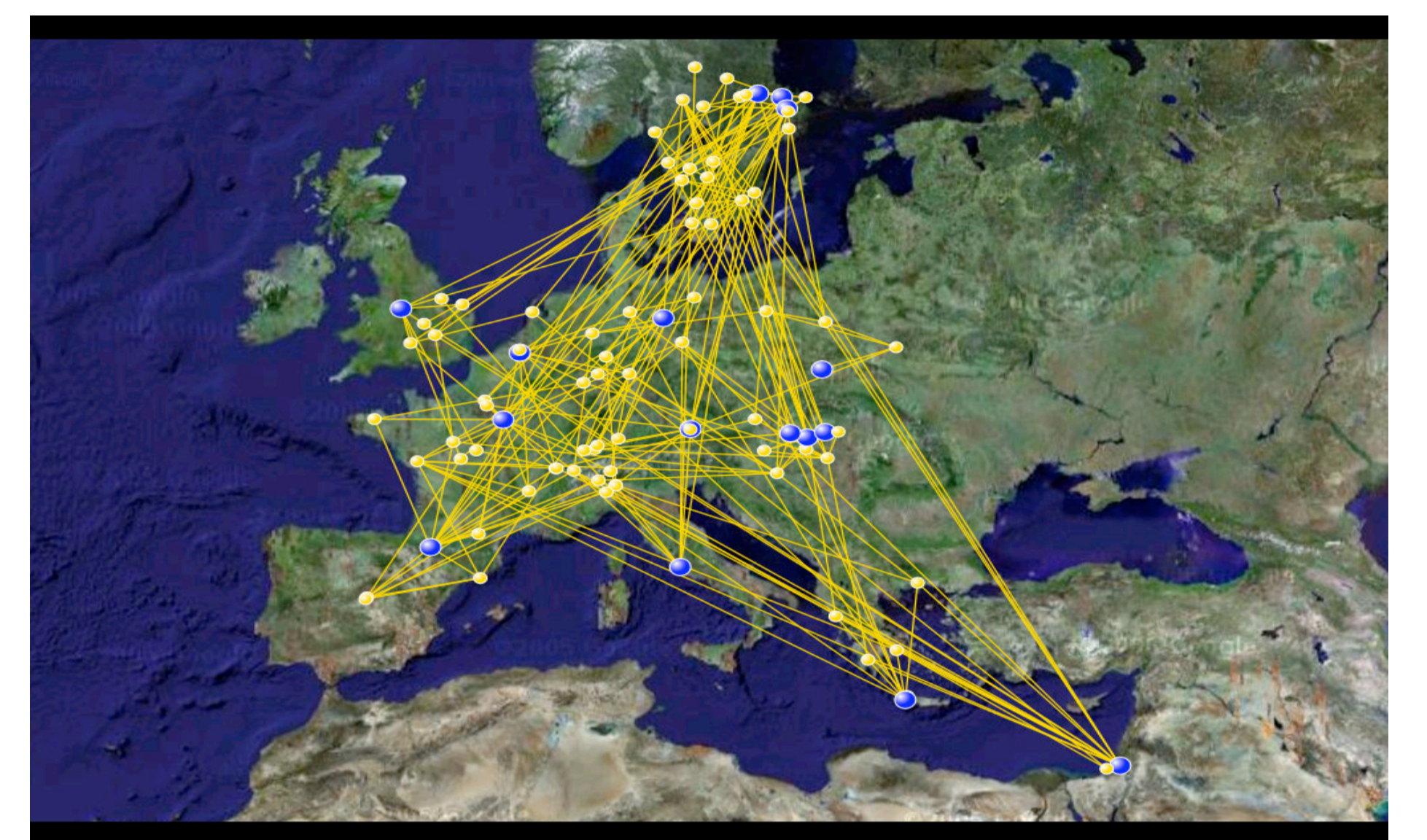
I. Csabai, P. Hága, G. Simon, J. Stéger, G. Vattay,
E. Magana, D. Morato, M. Izal, J. Aracil

tridentcom'05
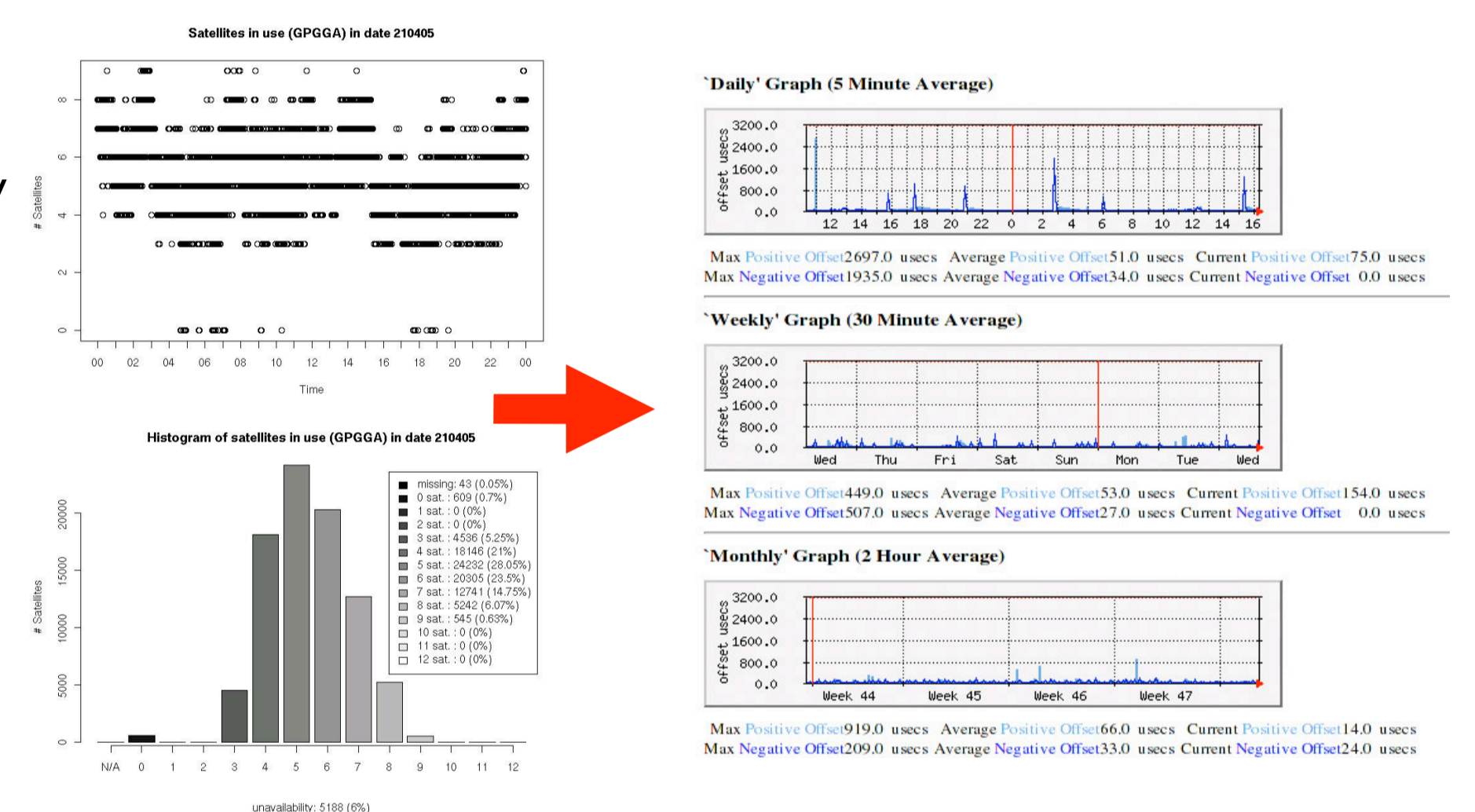Best Testbed Award



## History

- The European Traffic Observatory Measurement InfrastruCture (etomic) was created in 2004-05 within the Evergrow Integrated Project launched by the Future and Emergent Technologies Programme of the European Union.
- Its goals:
  - to provide an open access, public test bed for researchers investigating the Internet with active measurement methods
  - to serve as a Virtual Observatory active measurement data on the European part of the Internet
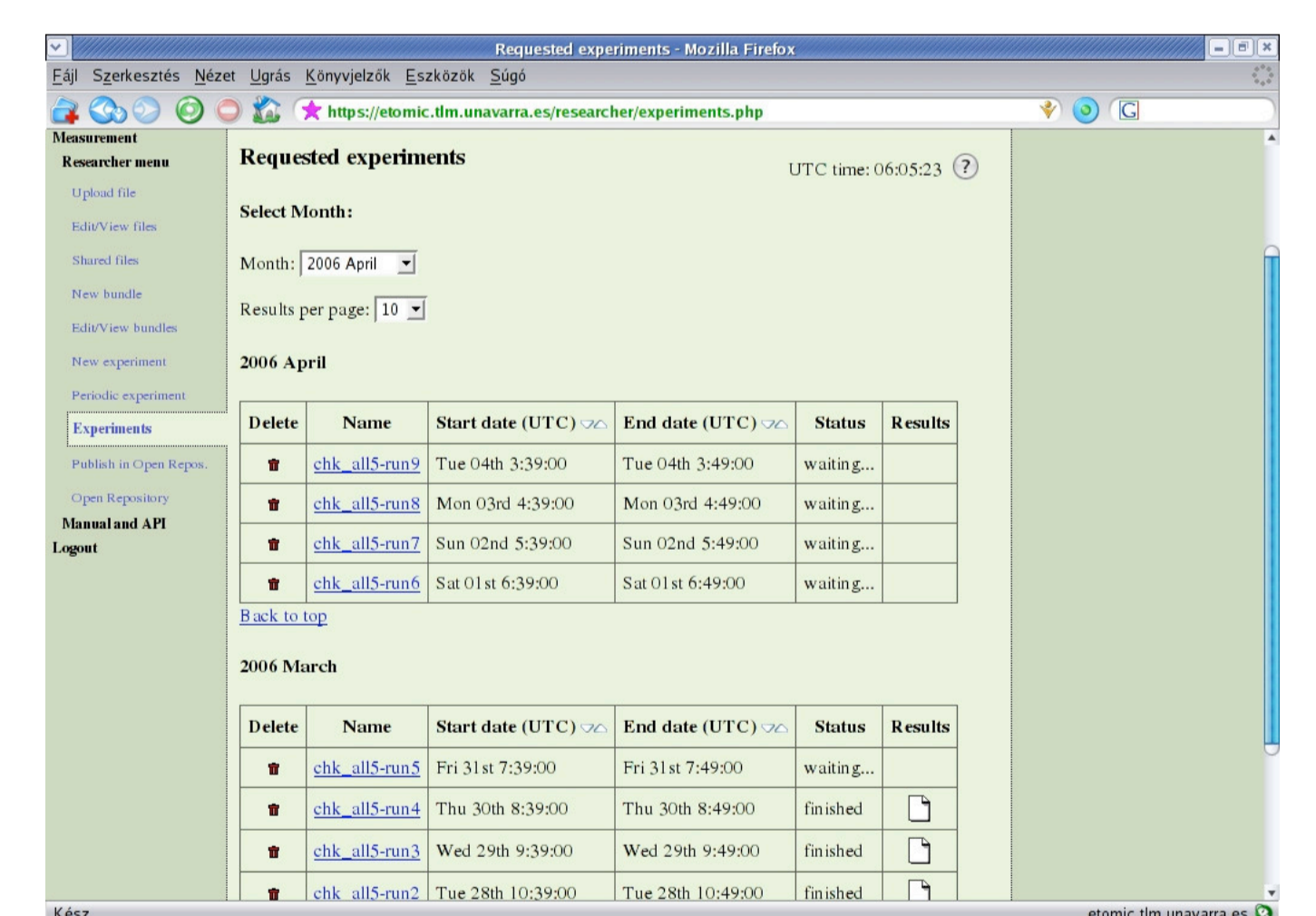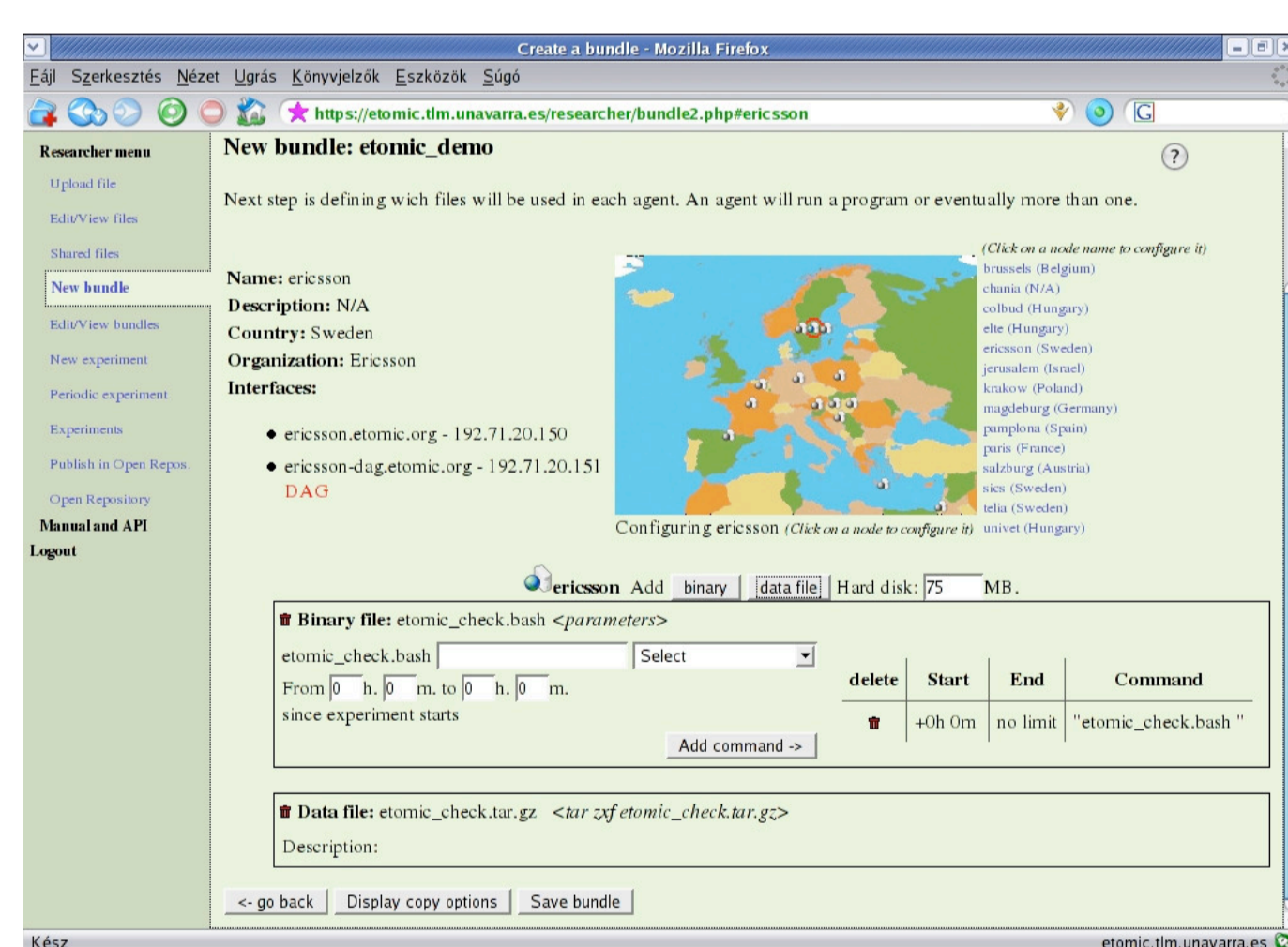


## Hardware architecture

- Each measurement station consists of:
  - standard server PC architecture
  - DAG 3.6 GE card with packet sending capability
  - own GPS antenna (Garmin 35 HVS)for time synchronization
- Repository and data processing:
  - Everlab IBM blade center (112 blades)



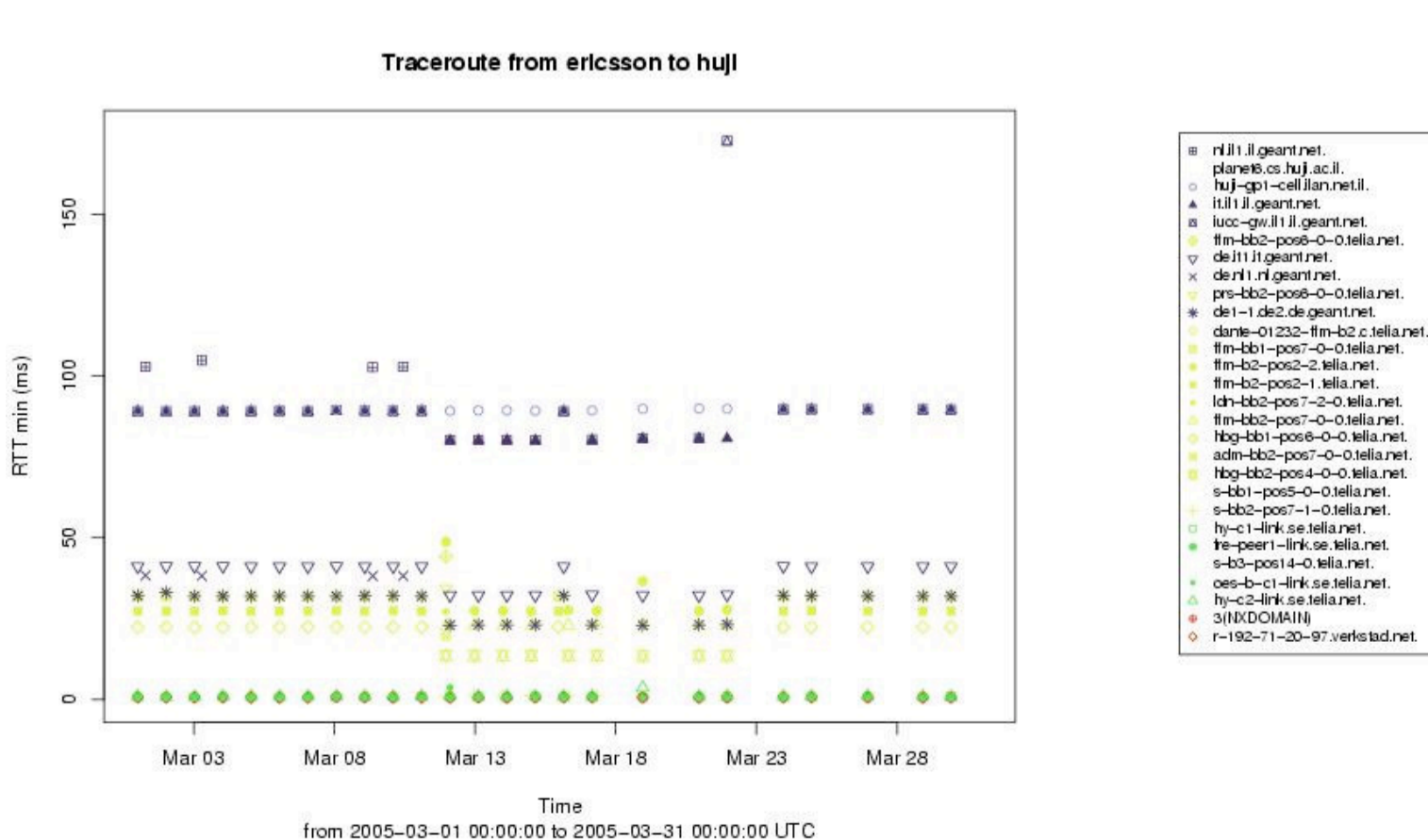## GPS visibility information



## Web interface

- Available via www.etomic.org
  - account application -> own measurement design
  - free access to periodic measurement end-to-end data
- Measurement time slot reservation for registered users
- Programming DAG card via the user friendly Application Programming Interface
- Measurements are distributed automatically to the measurement stations
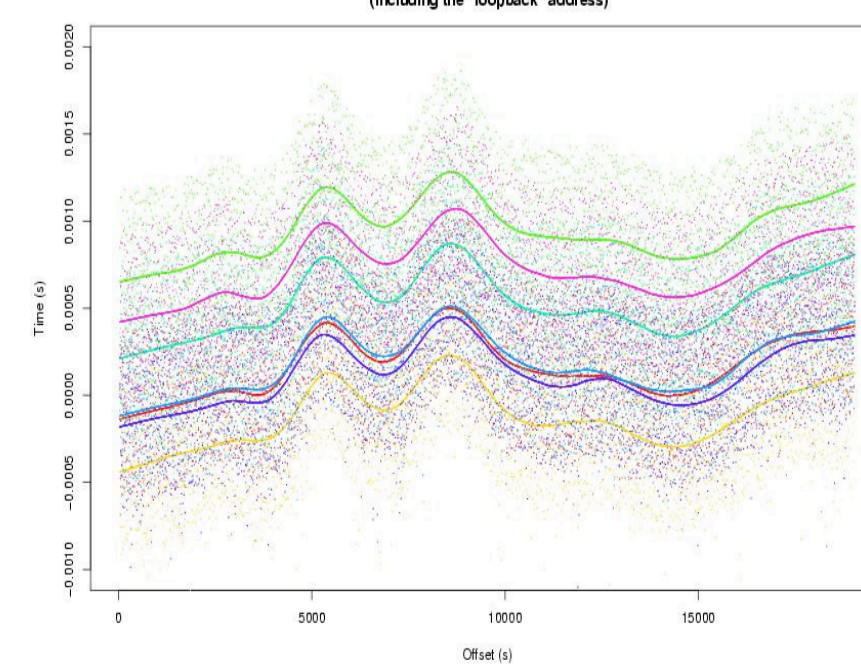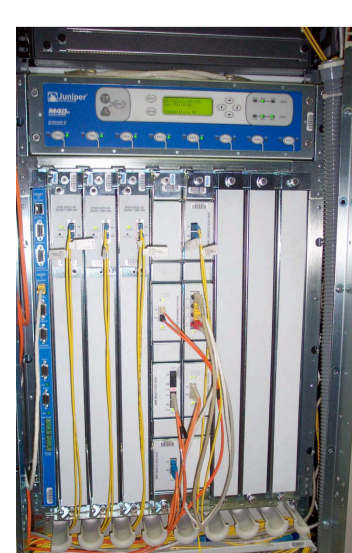




## Tracking topology changes



## Remote router fingerprinting

With our high precision measurements the clock skew of routers can be detected and interfaces of the same router can be identified.



## Delay tomography



# www.etomic.org