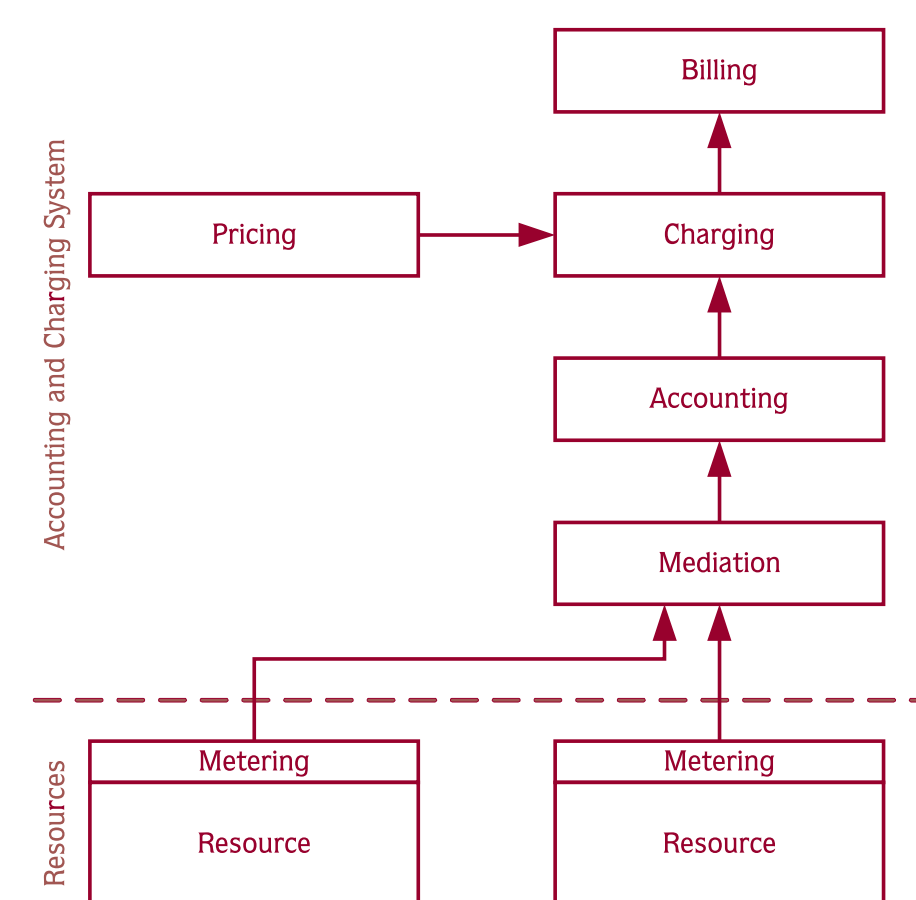


Grid Accounting Concept Based on the Model of Public Utility Pricing

Csongor SOMOGYI, Imre SZEBERÉNYI
BME Department of Control Engineering and
Information Technology, Budapest, HU

Concept

- The concept is developed originally for the Internet (CATI project) and is later applied for the Grid in GACS
- The accounting/charging process is decomposed into its subprocesses: metering/mediation, accounting, pricing, charging and billing



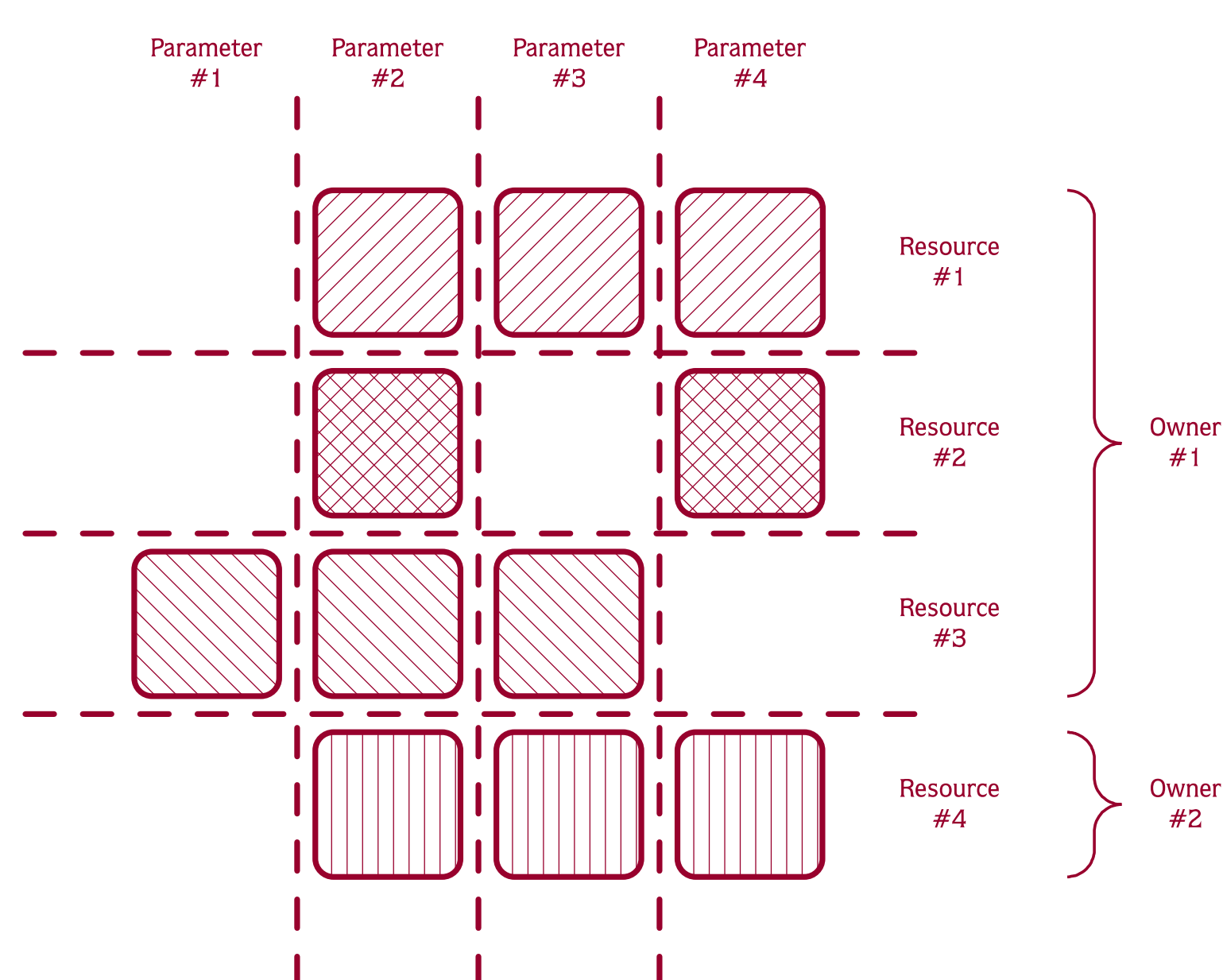
Pricing Scheme

- Pricing scheme follows the tariffing model of **public utilities**
- Rates can be applied for each resource and for each metered parameter in a given time interval

$$TC_j(t) = (\bar{T}^r)^T \cdot \sum_{i=1}^M \left((\bar{C}(\bar{t}_{j,e,i}) - \bar{C}(\bar{t}_{j,b,i})) \vee \bar{0} \right) \bullet \bar{q}_i \cdot \bar{T}^p$$

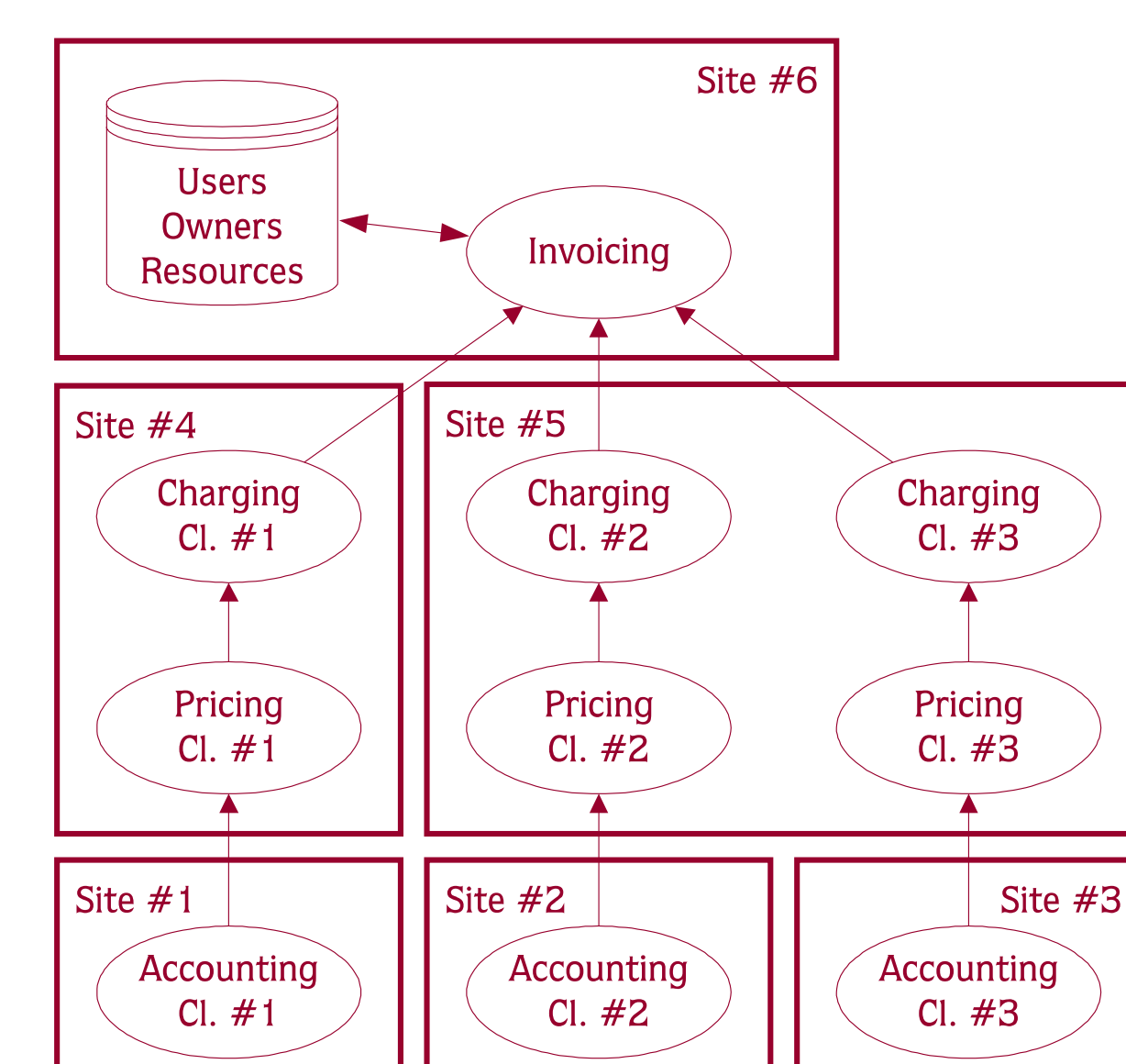
Data Partitioning

- Accounting/charging data should be partitioned because the amount of data collected can grow rapidly
- Vertical** partitioning along the modules
- Horizontal** partitioning by grouping the data per resource and per metered parameter



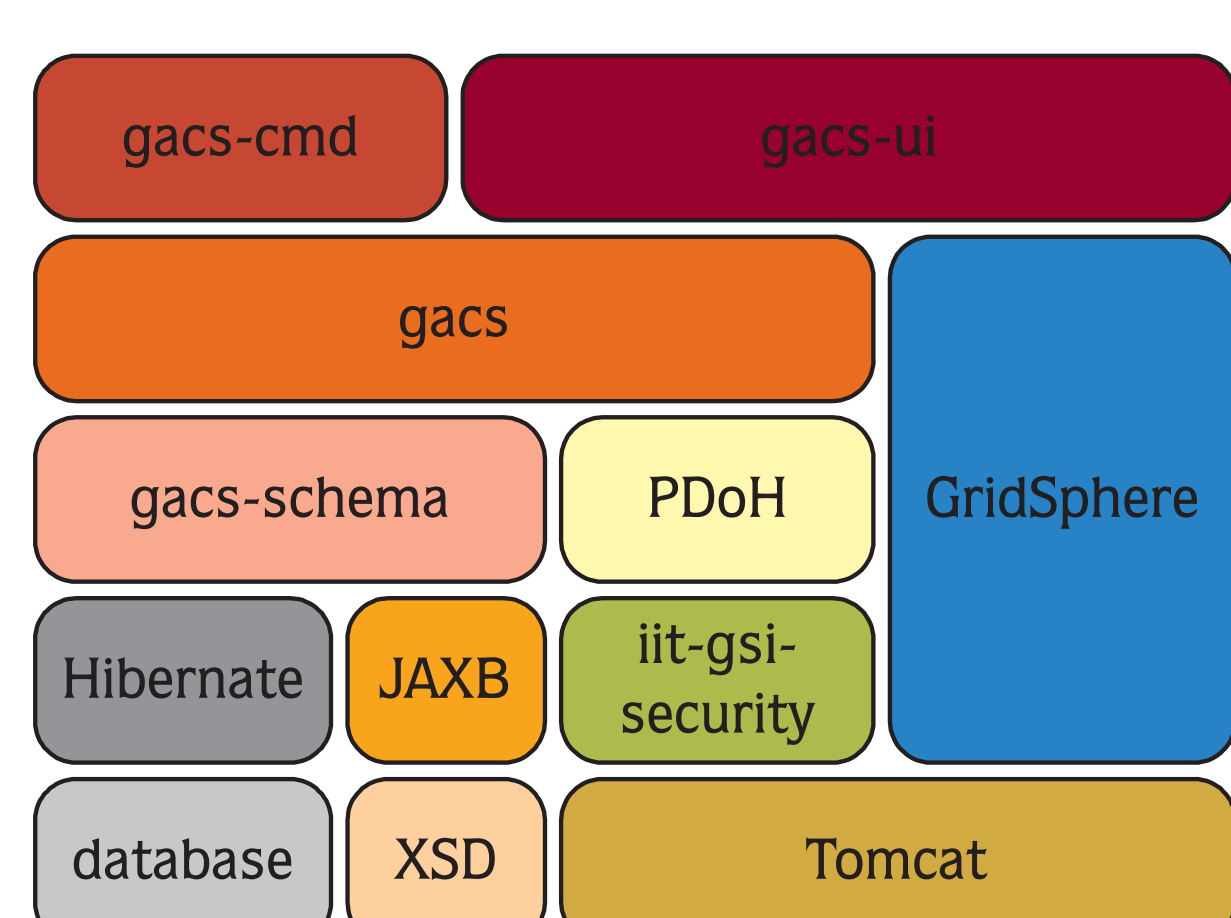
Deployment

- After deciding how the accounting/charging data will be partitioned, a multisite configuration can be established

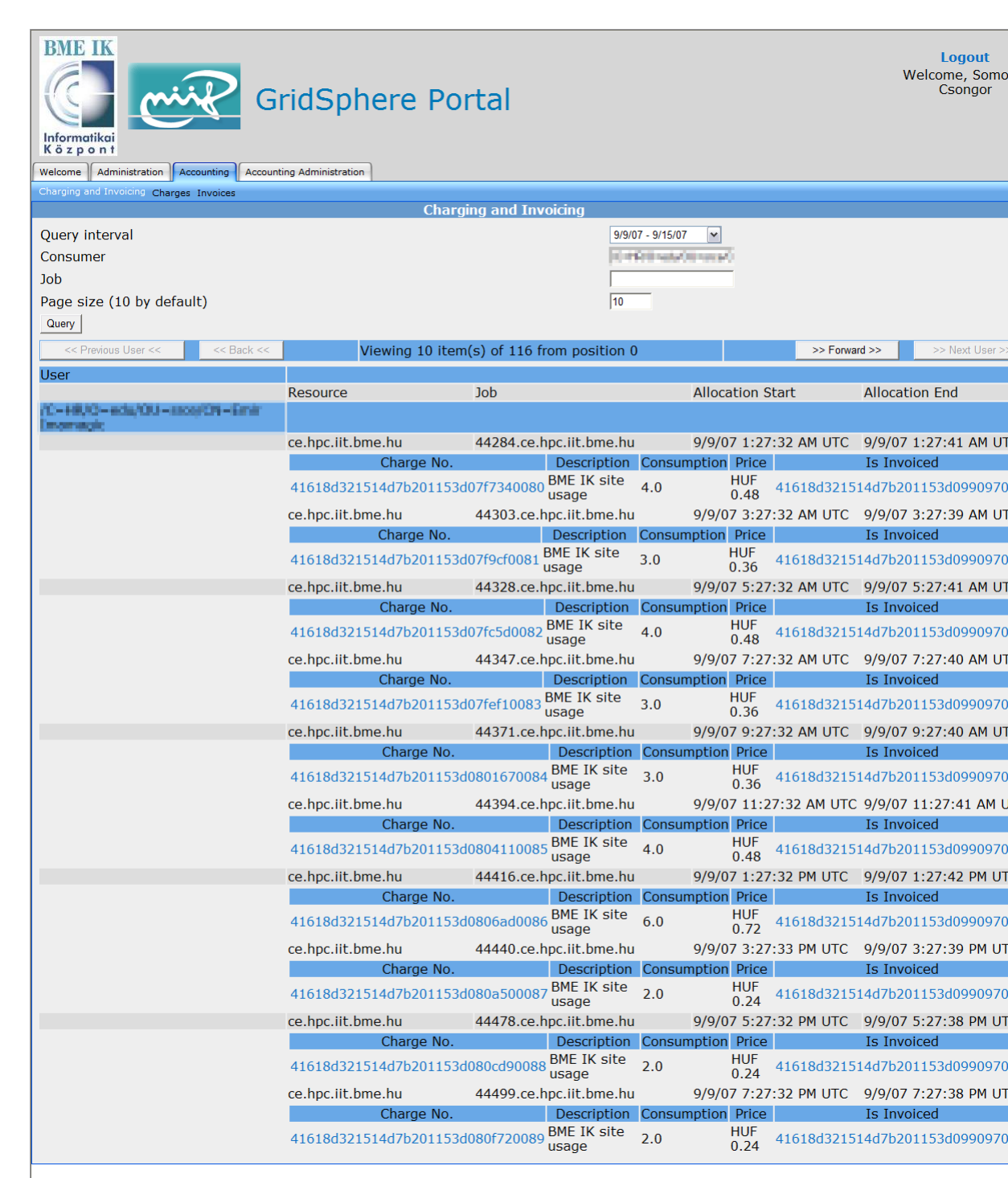


Architecture

- Multilayered and multisite
- XSD schema based protocol description
- Secured communication using GSI and PDoH
- Unified data structures allow to integrate GACS with various Grid solutions (e.g. with gLite/APEL)



- GridSphere portlets
- Job and time interval (per month or per week) based billing



User Interface

