Common Use Cases for a HEP Common Architecture Layer

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What is a Use Case?

- Set of *scenarios* tied together by a common user goal
- *Scenario:* sequence of steps describing interaction between a "user" and a "system"
  - *Note:* a "user" might be a piece of software; Workload Management System is a "user" of Replica Catalogs
- Amazon.com use case: three scenarios
  - New customer purchases product
  - Frequent customer purchases product
  - Purchase authorization fails

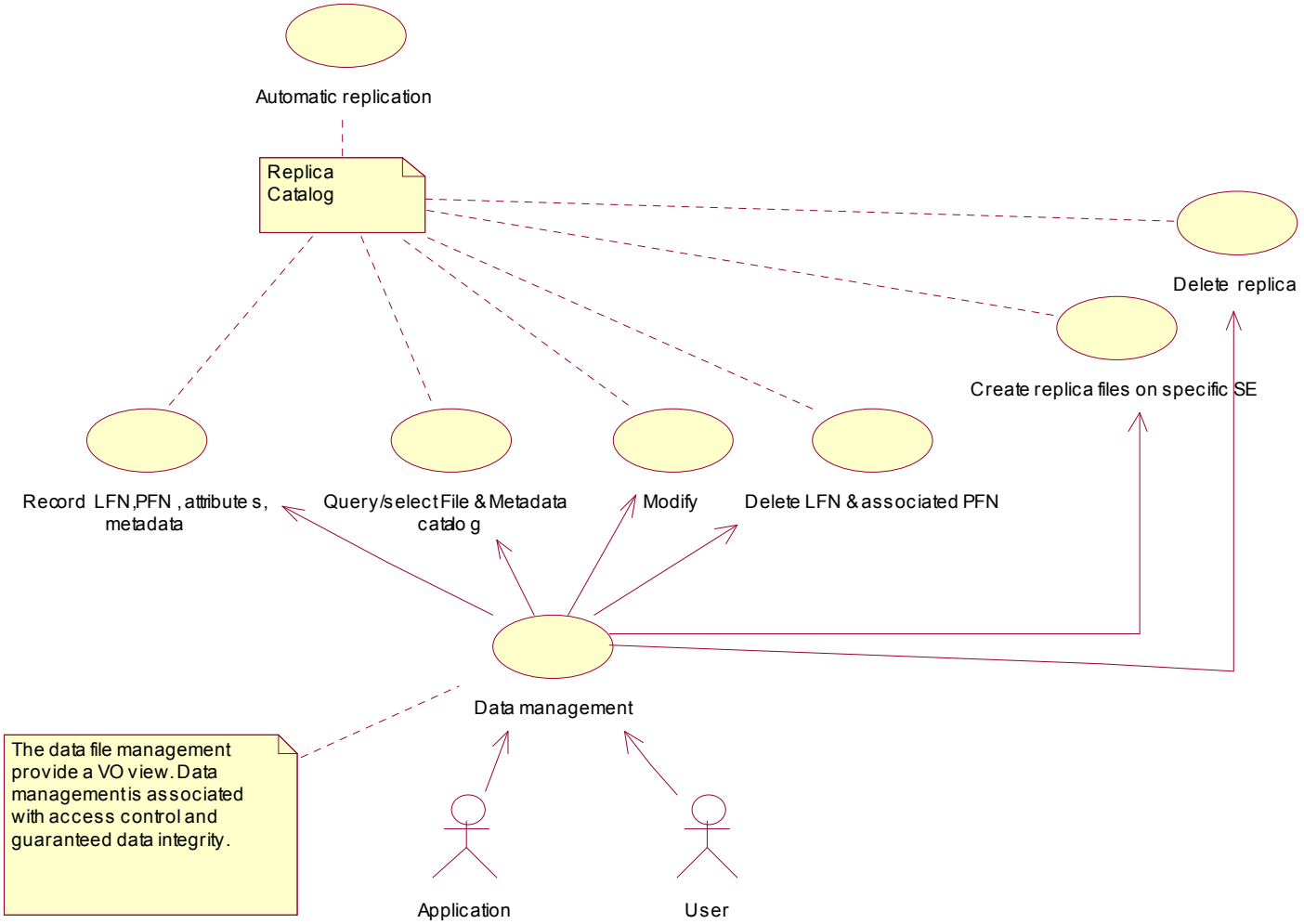
Use Case Example

- Amazon New Customer Purchase
  1) Customer browses catalog and selects items to buy
  2) Customer goes to checkout
  3) Customer fills in shipping information and choices
  4) System presents full pricing information
  5) Customer fills in credit card information
  6) System authorizes purchase
  7) System confirms sale immediately
  8) System sends confirming email to customer

Observations

- Implementation absent
  - Probably done via web, all sorts of database access (product catalog, contact shipping company for shipping prices, credit card company for authorization)
  - Only real implementation mentioned is "confirmation **email**"
- Simple
  - Only need a global idea to understand it
  - Goal oriented: "buy stuff"
- Captures interaction between User and System

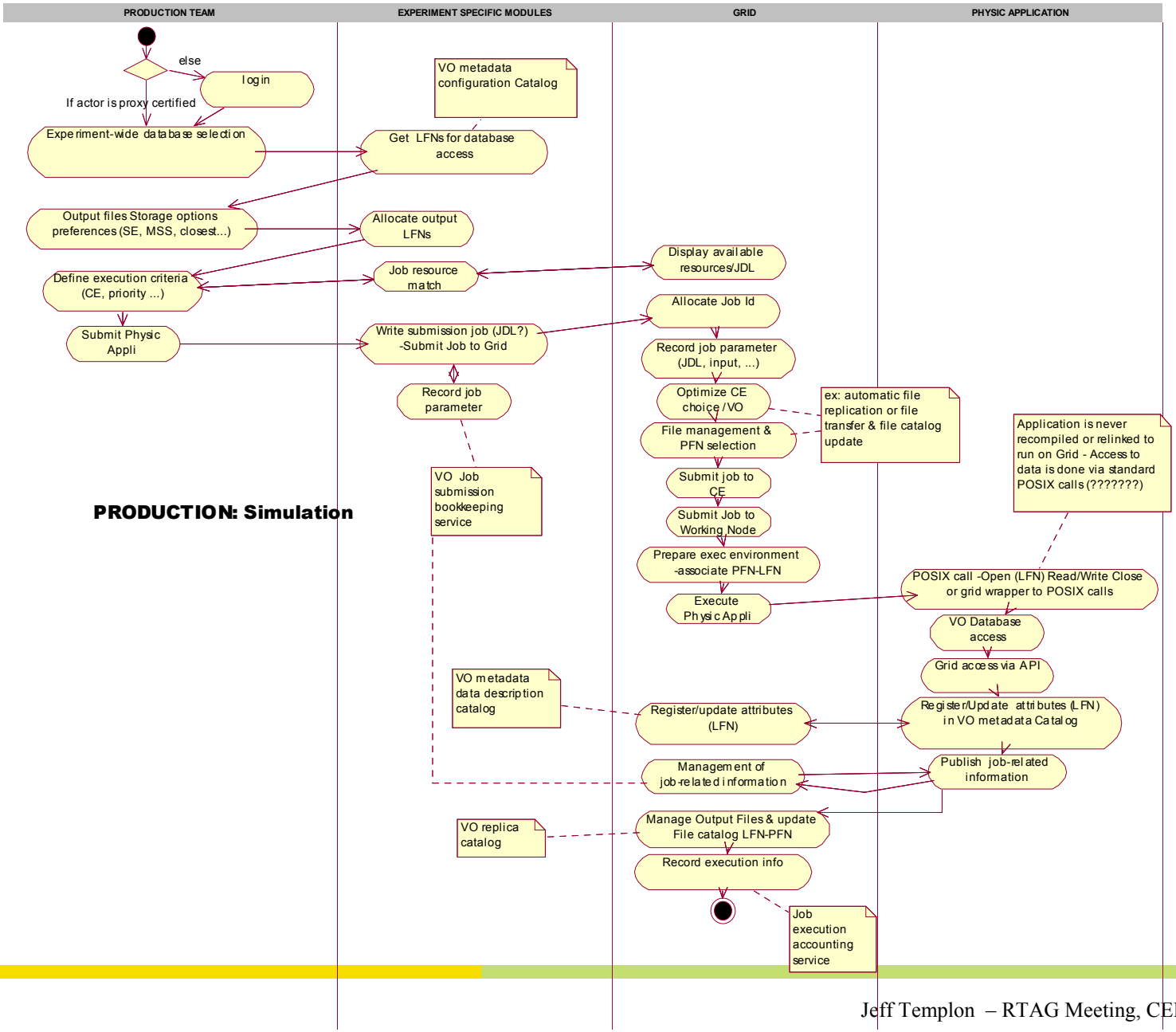
Data Management use case



Thoughts on RTAG Use Cases

- We should start at high level: system will be "Grid plus HEPCAL"
- Several classes of users:
  - Single Physicists
  - Production Teams
  - Possible "production daemons" which run massive reconstructions
- When we have HEPCAL use cases, we'll need to
  - Make sure they're really common
  - Go one level deeper: system becomes "Grid" (which Grid?)
  - At this point, it becomes clear where HEPCAL is:
    - *Part of the system* according to users
    - *One of the users* from the point of view of the Grid

Submit a Production job scenario (1)



Example Grid Use Case

- Use Case: Register External File to Grid
  - User logs into grid
  - User presents
    - physical file name
    - suggested logical file name
    - target storage element
  - system transfers file to specified SE and path
  - system registers file in replica catalog of user's VO
  - system confirms successful transfer