



# Requirements of visualization tools for scientific applications on the grid

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# Presentation overview

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- Introduction
- A couple of use cases
- Requirements/issues



# Introduction

CCLRC is host to very large scale national and international experimental facilities

e-Science Centre has to grid-enable the facilities

Our group builds large complex applications using e-science technologies to exploit parallel, distributed data and compute resources

- simulations
- data analysis
- visualization



# Use case - I

Task : Materials science using

- X-ray
- Lasers
- Neutrons

Constraint: Preferred desktop tools are Matlab, IDL

- Not scalable
- Visualization is add-on and limited
- Data is often on a distributed resource
- User is a scientist, not a visualization technician
- Domain to logical specification of visualization



## Use case - II

### CSCW for Integrative Biology

Mixed ability users

Experimentalists and modellers

Application specific tools with differing internal data models

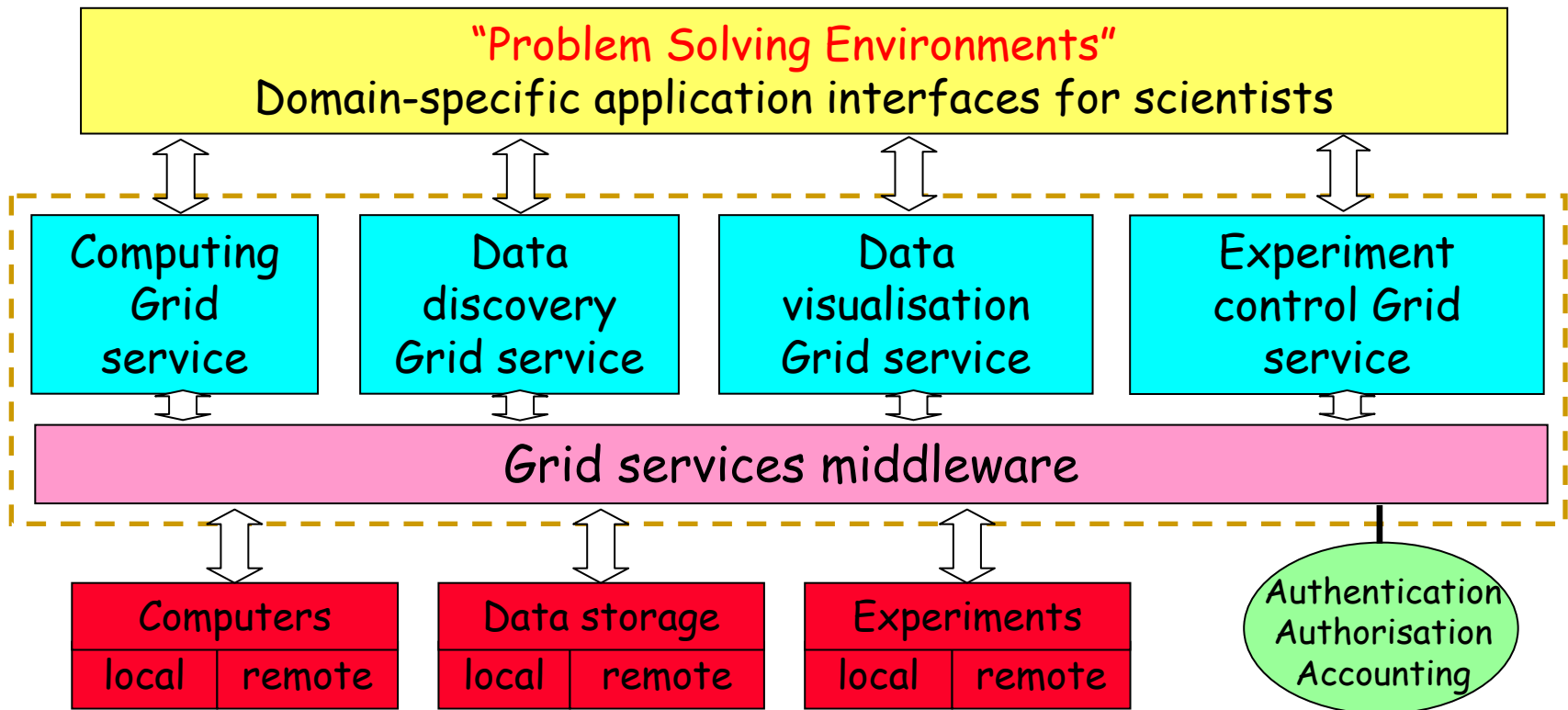
Data not easily expressed into other models

Scientists, not visualization experts or numerical analysts

Preferred tools – Web browser and Matlab



# Integrated e-Science Environment



Framework for distributed scientific computing and experimentation



# Requirements

- Tool for the task + inter process communication
- Domain level specification
- Ontology
- Agents for inter process communication
- Level of interoperability between systems
  - Pipeline?
  - Geometry data?
    - An interchange format?
    - Interaction and feedback
  - Rendering?