Background Characterization Database Design

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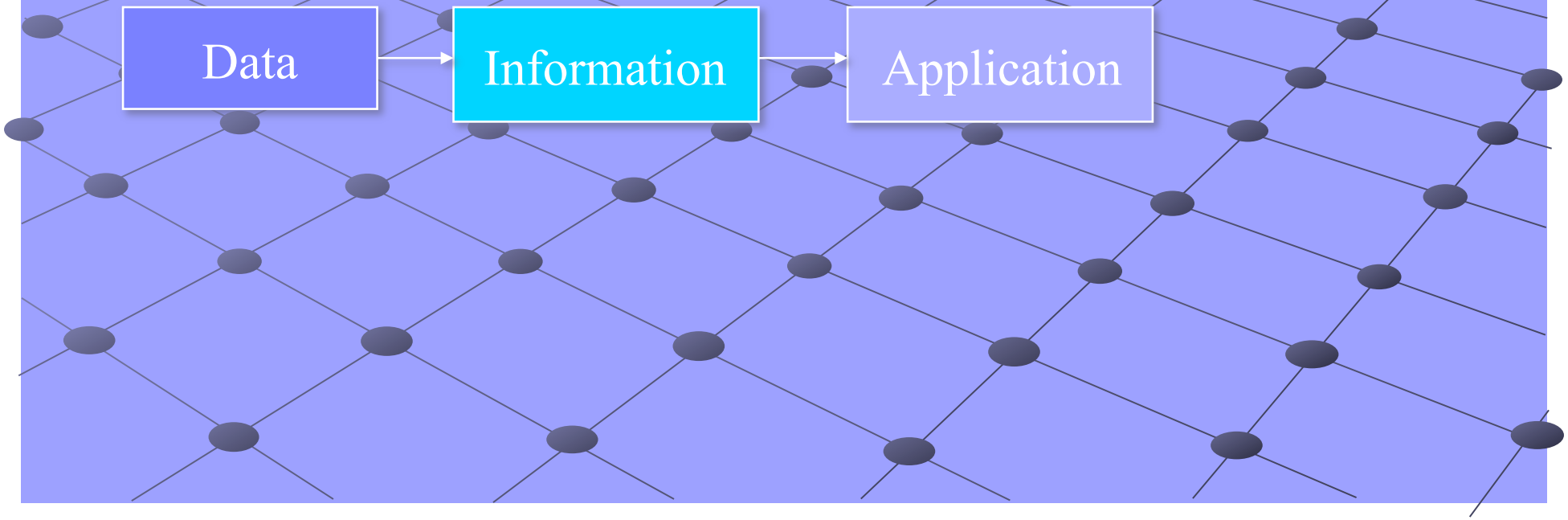
Objectives

- Database planning
- Requirements and analysis
- Database design
- Application design
- Implementation
- Data Conversion and loading
- Testing
- Operational Maintenance

Database components

- Gamma-ray fluxes in different areas
- Muon fluxes in different areas
- Neutron fluxes in different areas
- Rock chemical composition
- Rock distributions
- Radon levels
- Neutron yield
- etc

Ultimate purpose of a database

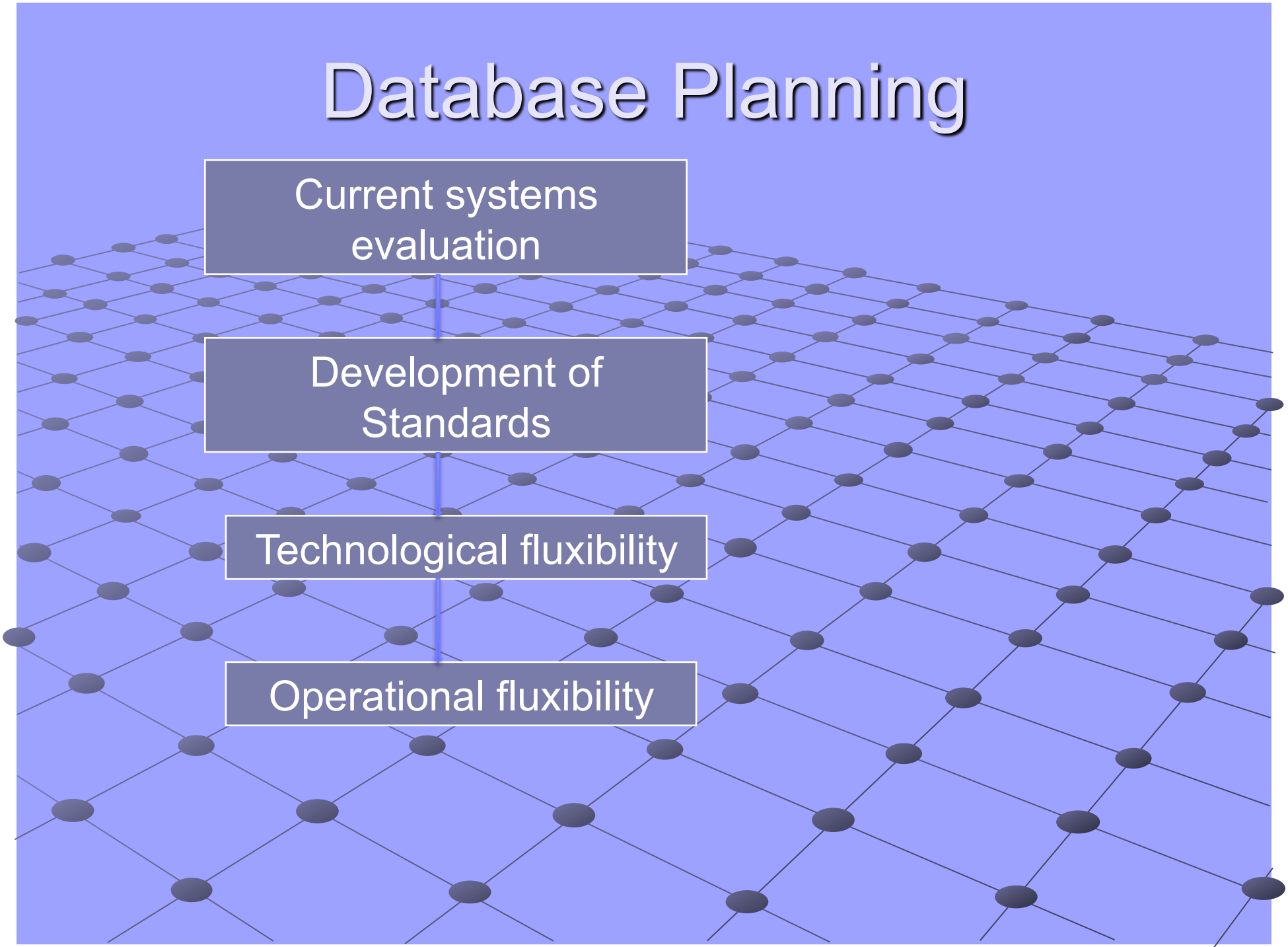


Selecting a database system: Need Analysis

The needs analysis process will be specific to your organization but, at a minimum, should answer the following questions:

- How many records we will warehouse and for how long?
- Who will be using the database and what tasks will they perform?
- How often will the data be modified? Who will make these modifications?
- Who will be providing IT support for the database?
- What hardware is available? Is there a budget for purchasing additional hardware?
- Who will be responsible for maintaining the data?
- Will data access be offered over the Internet? If so, what level of access should be supported?

Database Planning



Data Conversion and Loading & Testing

- Transferring any existing data and new data into the new database and converting any existing applications to run on the new database
- Finding errors and fixing errors

Database Evaluation

- Assign a few people to evaluate the database from time to time
- Evaluation report version control

Operational maintenance

- preventive maintenance (backup)
- corrective maintenance
- assignment of access
- regular monitoring & periodical check up

Example of the current database components

1. Neutron yield: neutronyield.usd.edu
2. Rock chemical composition: Excel file