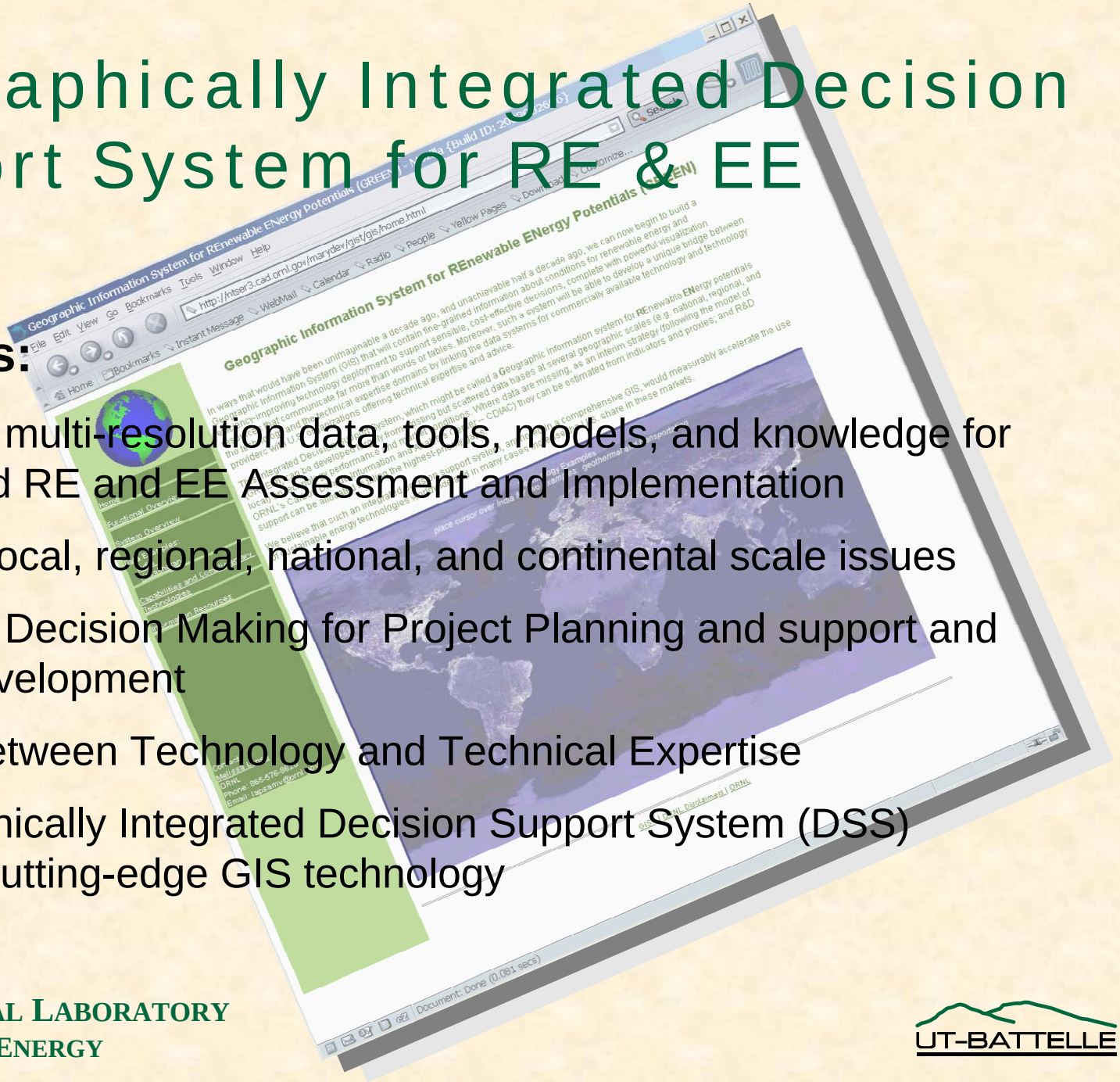
Geographically Integrated Decision Support System for RE & EE



- **Objectives:**
  - Integrate multi-resolution data, tools, models, and knowledge for enhanced RE and EE Assessment and Implementation
  - Support local, regional, national, and continental scale issues
  - Informed Decision Making for Project Planning and support and policy development
  - Bridge between Technology and Technical Expertise
  - Geographically Integrated Decision Support System (DSS) utilizing cutting-edge GIS technology

Functional Overview

Enter by Technology

Define → Search → Search → Candidate Locations

Technology performance: size ranges, energy delivery form, costs, variability	Market conditions by Location: energy demand, price, boundary conditions	Energy resource conditions/endowment by location

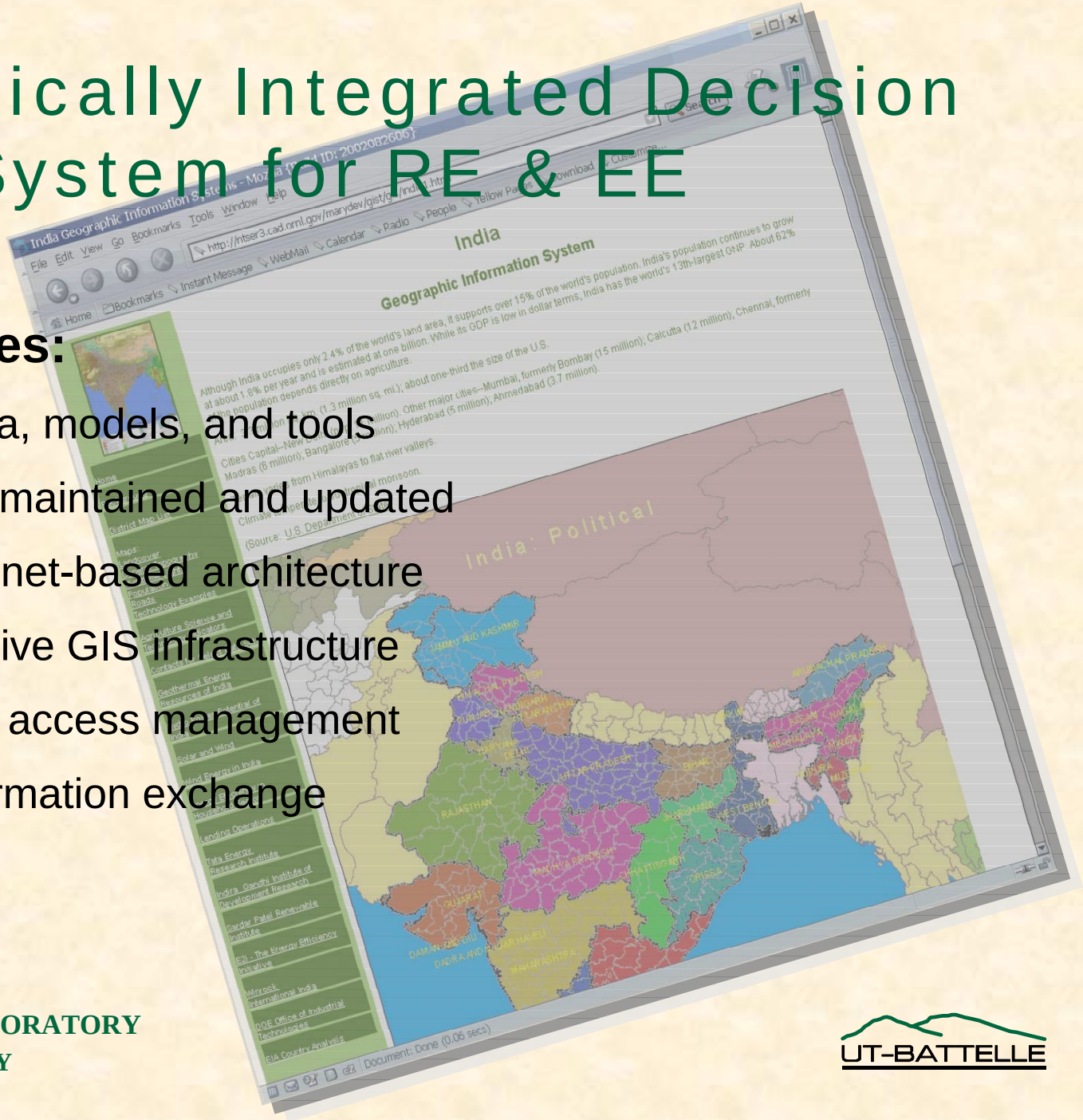
Candidate Technologies ← Search ← Define ← Define

Enter by Location

GREEN

Geographically Integrated Decision Support System for RE & EE

- **Functionalities:**
  - ❖ Integrate data, models, and tools
  - ❖ Dynamically maintained and updated
  - ❖ Flexible Internet-based architecture
  - ❖ Comprehensive GIS infrastructure
  - ❖ User friendly access management
  - ❖ Efficient information exchange



System Overview

Physically Distributed

Data

Models

Tools

Modeling

Search & Retreival

Integration

Geographic Information System

Centerlines

Hydrography

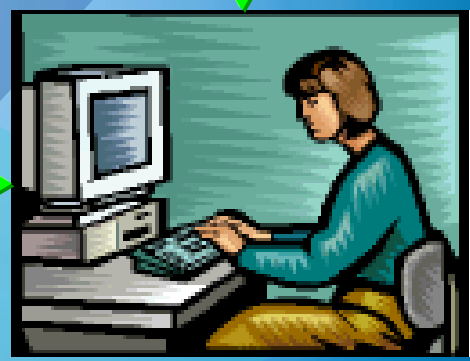
Vegetation

Orthoimagery

OAK RIDGE NATIONAL LABORATORY

GREEN

Browse
Convert
Download
View maps
Create maps
Print maps



Users

Geospatial Software Agents
Geospatial Software Agents
Land Cover
Analysis
Multivariate Data Visualization
Multivariate Data Visualization
Geographic Information Science
GREEN
Climate
Dynamics
Economic
Analysis
Massive Data Management
Massive Data Management
LandScan
Population
Decision Support Tools
Decision Support Tools

UT-BATTELLE

Role of ORNL

- **Geographic Information Science & Technology**
  - Innovative technology for large scale spatial data development, modeling, and management
    - Geospatial software agent framework
  - Advanced geospatial modeling and simulation
    - LandScan global population distribution
    - Coupled climate dynamics and land cover analysis
  - Spatial integration of socio-economic data, models, and tools
  - Advanced Visualization