I. Aims of Earth Explorer simulation for education ……

- Aims to meet the pedagogical needs of Earth System Science education
- Student-initiated and scenario-driven Earth exploration to simulate real Earth processes with actual observations
- Simulations able to use large data sets including satellite imagery
- Active learning environment in which student inputs drive simulation models
- Simple and modular structure allows instructor to implement any type of simulation
- Accessible by students individually or in multi-site interactive groups

II. Internet-enabled Earth Explorer Simulation prototype ……

- Login as individual learner and/or join a study group – remembers details of last session
- Introduction offers Earth System Science-relevant links, hot topics, and describes Earth Explorer Simulation provided
- Explore existing simulation scenarios or initiate new scenarios
- Adjust simulation variables or make changes to the study area
- View the simulation results to see impact of changes made and assess the outcomes
- Interact with simulation making changes to parameters and input variables
- Understand the simulated processes through further interactive changes and assessment of effects

III. Principles of system architecture ………

- No specialist software needed by end user, only Internet browser and broad-band connection
- Flexible and modular system architecture - allows the instructor to customize both interface and learning contents
- Open framework to make addition of new Earth Explorer Simulation model simple
- Realistic Earth System Science simulation models
- Makes use of NASA science, technology and data, access to extensive geospatial data
- Student-engaged learning experience
- Data collected by students can be used
- Students can investigate their own neighborhoods
- Learning material and tools are science and policy relevant
- Learning contents are presented in attractive formats with intuitive interfaces