

# MISSION EARTH

## Agenda for Global Synergy

3/5/95

### I. Mission Earth Vision Statement

To promote progress toward a SUSTAINABLE GLOBAL SYSTEM:

"SUSTAINABLE", because of our concern for the future;

"GLOBAL", to counter the untenable imbalance between regions and nations;

"SYSTEM", because of inescapable interactions among all aspects of all sectors involved.

### II. Mission Earth Purpose; Goals and Objectives

The identification and dissemination of the unique benefits of computer based global models and world simulations to a fully international constituency, as the prime tool for use in planning, implementing, and monitoring a sustainable future for the planet. It is recognized that previous world simulations have indicated with considerable persuasion that Man has hit a very grave point in his expansion throughout the world. There are definite threats of ends of resources, threats of starvation, threats of gross ecosystem disdiversification, threats of unmanageable levels of populations, threats of fatal pollution of air, soil, and water by a variety of substances, etc., which forebode centuries of regression of civilization and bare survival of a remnant of organic life on Earth.

To reach out to other technical societies (such as the IEEE Computer Society) and nonprofits (such as the conservation organizations) with the intent of cooperation on projects of mutual interest. To be as effective as it must become, Mission Earth cannot act entirely within SCS alone; it needs the manpower, expertise, and facilities that other organizations might provide, and conversely Mission Earth could well serve the other organizations with its expertise in modeling and simulation, especially on a regional and worldwide scale.

To accomplish this by surveying and publishing information, both by print and digitally, on modeling and simulation work, in progress and completed, with results and comments, in an effort to reduce duplication of effort and improve the technology.

Our belief is that solutions to global problems, as well as others, are much easier to arrive at, and more likely to prove satisfactory, if there is a good understanding of the system in which the problem is embedded—AND, that modeling and simulation are among the best tools for imparting understanding that modern technology has produced.

### III. Mission Earth Background

The Society for Computer Simulation International, founded in 1952, is a technical society dedicated to the improvement of the art and science of computer modeling and simulation, and their application to the study and alleviation of the global and regional problems of our society and their impact on the Biosphere.

To this end SCSI organizes and cosponsors conferences and publishes a technical journal *SIMULATION*, and *TRANSACTIONS* of archival material related to its interests. "Simulation in the Service of Society" is a non technical, newsletter-type section of the journal *SIMULATION*, devoted to keeping readers informed as to what is going on in simulation and related fields.

MISSION EARTH is an Activity of The Society and was initiated in July 1992 at the SCS Summer Computer Simulation Conference in Reno, Nevada. The founder John McLeod, who has also the distinction of having founded SCS 40 years before, recognized a need to improve communications between world simulation investigators. From this initial aspiration, Ben Clymer, an active Society member since 1955, lead the Activity until his death at the 1994 Summer Computer Simulation Conference in La Jolla, California. This included quarterly Symposia at SCS conferences and the incubation of global modeling projects such as Global Energy Network International (GENI). A database of attendees at Mission Earth Symposia has been maintained and recently a E:mail List Serve was established to further communication between participants. Additional affiliations are being developed in the area of global communications such as the CERES Global Knowledge Network.

#### IV. Mission Earth Strategies, Activities, and Projects (by Committee)

##### *Steering Committee*

To encourage thinking about existing and new options in world modeling and simulation and to evaluate the options at least relatively and within definite domains.

Develop an improved organizational plan, and describe how Mission Earth should work,

To enlist voluntary contributions of modeling professionals (especially young professionals. who will live much of their lives in the 21st century) to contribute voluntarily to the activities of Mission Earth.

Lobby the NSF, SBIR, and other government agencies to support more work on global models,

Determine the meeting frequency that would best serve the Activity. Factors to be considered would include: How often should the entire committee meet? How many conferences should the Activity support? Should there always be some activity at every conference?

To involve global, regional and national decision makers in obtaining an appreciation of world simulation as the prime tool for world planning,

The Need for Funding for Mission Earth:

Mission Earth is unique among SCS activities in that it requires a much higher level of funding than do the other activities in SCS in order to accomplish its objectives. The detailed elements of cost and the committees responsible are:

##### Elements of Cost:

- Printing and postage Newsletter, Public Relations
- Purchased mailing lists Public Relations
- Long distance All
- Literature searches and copying Literature Search
- Public relations writing and Public Relations
- Mailing costs
- Travel Communications

The Society (SCS) cannot afford to pay all of the expenses now needed to allow Mission Earth to function and grow. To make up the difference, Mission Earth is making modest requests for funding by foundations with interests that are being served by Mission Earth.

Broad introspection about MISSION EARTH

What should we be doing that we are not?

To begin to implement a more fully international constituency, it is planned to solicit members for the Steering Committee who will be asked to work locally on behalf of Mission Earth.

Manage a MISSION EARTH Fund and the A. Ben Clymer Memorial Fund

Establish the organization of the Activity. This would include the Chair and an appropriate committee structure to enable activities and projects to be undertaken in meaningful packages. Oversee additions and changes to Committee List.

### *Symposia Committee*

Sponsor workshops and meetings to further the goals of the Activity by reporting on the advancements in the development of global and world models.

To organize an annual meeting of persons actively engaged in global modeling at the Summer Computer Simulation Conference and therein to provide forums for thorough discussion of world modeling and global simulations.

Employ Professional Development Seminars and handouts as channels of information.

Develop plans for future MISSION EARTH symposia.

Chairman's reports following each symposia

Collect papers from each Symposia in preparation for a Mission Earth Proceedings

### *Standards Committee*

Develop a hierarchy and a classification system for world simulation models.

Explore the possibility of and desirability of establishing standards for documentation of global models, or perhaps even more generally for global models themselves.

Specify the hardware and software and associated procedures needed for various world simulations.

Support the concept of interactive simulation models in order to improve the scope and fidelity of models.

Develop a set of standards, guidelines, and protocols for models and simulations with which to help in technical choices and decisions by world simulationists.

Promote this set of protocols and standards so that global simulations can become truly interoperable, so that people anywhere can assemble their own global model using components that have already been developed by others in conjunction with what they have developed to address their own particular question of interest.

### *Communications Committee*

Disseminate information concerning the activities of the Mission Earth Activity through such media as the Mission Earth List Serve, and in the future the World Wide Web and Mosaic, using the SCS Home Page.

Promote the Mission Earth List Serve to facilitate communication between Committee members and other interested parties.

Promote communication among global modelers through a newsletter published by E-mail and included in the S3 section of Simulation . ( Current list of persons receiving the newsletter needs to be expanded beyond the current 176.)

Promote increased public understanding of the importance of global modeling by offering the newsletter free of charge to other newsletters and journals and through organization of a speakers bureau.

Explore the possibility of establishing a system of commenting on global models

Explore the possibility of establishing a system for exchange of global models.

Work through the McLeod Institute and support projects with students in McLeod Institute colleges.

Communicate through such special channels as the journal Simulation, the Mission Earth newsletter, public relations releases, etc. with each of Mission Earth's publics, with the intent of informing people about the importance and nature of simulations for world planning.

Create a Special Issue of Simulation for MISSION EARTH

Prepare a Mission Earth Proceedings when 20 or more papers have been presented at Symposia.

### *Information Committee*

Achieve a technical understanding of the world system from simulations.

Generate and maintain a directory of Activity members and those interested in Mission Earth.

Promote education on global models by collecting publishing syllabuses for courses that have been taught previously and by developing a good bibliography on the subject.

Distribute reprints of S3 articles on current world models and related subjects.

Develop an international directory of persons engaged in global modeling.

Search the technical literature for information that could be useful in Mission Earth work.

Help to identify research problems in world simulation to be investigated by scientists affiliated with organizations other than Mission Earth.

Prepare a glossary for World Modeling and Simulation

Maintain a directory of people interested in MISSION EARTH

Create a Mission Earth Brochure for hand out at Symposia and for mailings. This could also be used as a tear out in each months edition of Simulation.

### *Model Projects Committee*

Stimulate the development of world simulation hierarchies.

Study the various semi-technical aspects of Mission Earth (model development process, how to use simulations in planning, intersimulation iterations, etc.)

Study the world system by simulations, and identify the critical systems and subsystems.

Define research projects that would answer the most urgent and important questions about the world system.

Develop, with all interested parties, plans for the world system by simulations.

Become the Registry of whole world system, sub world, and specialized world models, and disseminate this list of world/global models to interested parties.

## V. Mission Earth Organization

### SCS MISSION-EARTH ACTIVITY

Chair: Mark Clymer  
SCS Contact: Brian O'Neill

### STEERING COMMITTEE

Chair: Mark Clymer  
Members: All Interested Parties  
SCS Contact: Suzette McLeod

### SYMPOSIA COMMITTEE

General Chair: John Vossler  
North American Program Chair: Peter Meisen  
European Program Chair: Alfred Jones  
Committee Members: Lesa Bruning  
Rainer Rimane (SCSI)  
Marty Wildberger  
SCS Contact: Stephanie Owen - Program

### STANDARDS COMMITTEE

Chair: Jim Daly  
Committee Members: Peter Brecke  
Romeo Favreau  
Alfred Jones  
Jim McCoy  
Mary Lou Padgett  
Affiliations: Jim Isaak (IEEE)  
SCS Contact: \_\_\_\_\_

### COMMUNICATIONS COMMITTEE

Chair: Gottfried Mayer-Kress  
Committee Members: Ralph Huntsinger (MISS)  
Wayne Ingalls (M/E ListServe)  
Jim McCoy  
Hans Sieberg  
Craig Summers (Newsletter)  
John Vossler  
Michael Hess Wolfe  
Affiliations: H. Jurgen Halin (ETH, Zurich, Switzerland)  
Ali Riza Kaylan (Bogazici University, Istanbul, Turkey)  
Axel Lehmann (CERES)  
Carl Malstrom (ICEIS)  
SCS Contact: Hildy Linn

## INFORMATION COMMITTEE

Chair: Bruce Fairchild  
Committee Members: Peter Brecke  
Mark Clymer (M/E database)  
Roy Crosby (SCS Library - UC @ Chico)  
Jim May (SCS Historian)  
John McLeod (S<sup>3</sup>)  
Affiliations: Philippe Geril (SCSI)  
Peter Meisen (GENI)  
SCS Contact: Hildy Linn

## MODEL PROJECTS COMMITTEE

Chair: Peter Meison

### World Sub-System Models:

1. Communications
  - CERES - Axel Lehmann
2. Conflict/War
  -
3. Culture/Society (development, quality of life, world values)
  -
4. Economics
  -
5. Education
  -
6. Energy
  - GENI - Peter Meisen
7. Environment (ecosystem/resources, pollution, biodiversity)
  -
8. Food
  - Bernard Teiling – Nestle
9. Government (politics, legal system)
  -
10. Health/Medicine (AIDS)
  -
11. Population
  -
12. Transportation
  -

## VI. Mission Earth Affiliations

### World Models:

2050 Project - Allen Hammond, World Institute  
Digital Chart of the World  
Gen. Long-Term Options By Using Simulation (GLOBUS) - Stuart Bremer, Binghamton U.  
Geosphere- Biosphere Project - Stockholm  
Global 2000 Revisited: What Shall We Do? - Gerald Barney, Inst. for 21st Century Studies  
Global Early Warning System (GEWS) - Akira Onishi, Inst. of Applied Economic Research  
Global recall 2.0 - Nathan Gasser, World Game Institute  
IEA/ORAU Long-Term Global Energy-CO2 Model - J.A. Edmonds, Battelle Pacific NW  
IFIAS - Ian Burton, U. Toronto  
Integrated World Model - Frederick Kile & Arnold Rabehl, AAL  
International Futures (IFs) - Barry Hughes, University of Denver  
Mission to Planet Earth  
Regional World III - Frederick Kile & Arnold Rabehl, AAL  
Renewable Energy: Sources for Fuels & Electricity - Thomas Johansson, Lund Inst.  
SARUM - Richard Gigengack, University of Groningen  
SIM/GDP - Sergey Dubovsky, Inst. for Systems Analysis, Russian Academy of Sciences  
SimEarth: The Living Planet - Will Wright & Fred Haslam, MAXIS  
STRATEGEM - Dennis Meadows, Inst. for Policy & Social Science Research  
The Global Dilemma: Guns or Butter - Chris Crawford, Mindscape  
Towards a Fossil Free Energy Future - Michael Lazarus, Tellus Inst.  
UNCED Global Model - John O'Conner  
WIOM - Faye Duchin, Inst. for Economic Analysis, NYU  
World Integrated Model (WIM) - Barry Hughes, University of Denver  
World2 - Jay Forester, MIT  
World3 - Dennis Meadows, Inst. for Policy & Social Science Research

### World Games:

Fish Banks Game - Karen Burnett - Kurie, U. of New Hampshire  
Freeway Planning Game - University of New Hampshire  
Impasse - University of New Hampshire  
Money in the Middle - University of New Hampshire  
Perestroika Game - University of New Hampshire  
Roger's Game - University of New Hampshire  
Rope Game - University of New Hampshire  
Trading Game - University of New Hampshire

### Other Affiliations:

American Library Association  
GLASNAS  
Inst. for Applied Systems Analysis, Vienna, Austria