

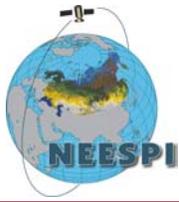


**Inter-agency
Northern Eurasia Earth Science
Partnership Initiative (*NEESPI*) and
Science Review Meeting**

NEESPI Overview

**History, Objectives, Strategy &
Meeting Objectives**

**Washington DC
December 9-10, 2004**



Interagency NEESPI Meeting

What is the NEESPI?



- The **N**orthern **E**urasia **E**arth **S**cience **P**artnership **I**nitiative, or NEESPI is
- An active, multidisciplinary program of research focused on critical Earth system science issues in Northern Eurasia
 - Current active partners primarily NASA and RAS
- and*
- a *strategically evolving* program of internationally-supported Earth systems science research,
- which has as its foci scientific issues in northern Eurasia that are currently relevant to regional and Global scientific and decision-making communities.

<http://neespi.gsfc.nasa.gov>



“Don’t sleep . . .”

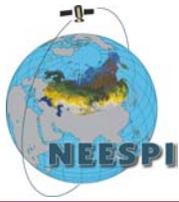
Northern Eurasia Earth Science
Partnership Initiative



- The changes in this region have the **potential to affect the entire Earth system** – *and may already be doing so.*
- The region has **unique features** that need to be better understood, parameterized, and accounted for
 - *Without clear understanding of them, the description and accurate modeling of the entire Earth system may not be possible.*
- Results from the study will have **benefits to the societies of the region as well as to the global community.**
 - *e.g., large-scale human land use change effects with potential for feedbacks for climate and human habitability)*

- **Unique features of Northern Eurasia:**
- **The world's largest cold region.**
 - 2/3 of global permafrost = 10M sq.km.
- **More than 1/2 of Global terrestrial carbon**
- **World's largest forest; with important Larch dominance**
- **The most continental climate.**
 - controls intensity of Eurasian monsoon.
- **Large landmass effects**
 - high levels of climate and weather variability and **highly vulnerable** natural and agricultural ecosystems.
- **Extensive, variable dry land areas**
 - largest source of dust in the extratropics.
- **Extensive wildfires**
 - potential for large climate change feedback

14% of global organic terrestrial carbon
25% of world forests



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What is so Important About Northern Eurasia ?



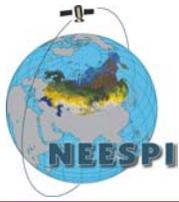
- Some of the main reasons can be *illustrated* with the following conclusions:

Soegaard, et al. 2004¹ of Denmark:

“The carbon budget of the High Arctic is one of the best indicators of the health of our planet . . .

“Because of strong feedback mechanisms in the Arctic even moderate temperature changes may be amplified and result in large environmental responses.

¹ Global Change Newsletter, No. 59, Sep. 2004



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The Need for the NEESPI?

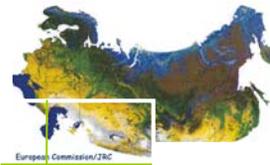


Fundamental problem: There is a lack of needed data and adequate understanding of the functioning of the biophysical system *of the Northern Eurasia region which points to the need for well-integrated projects with broad-scale international participation.*

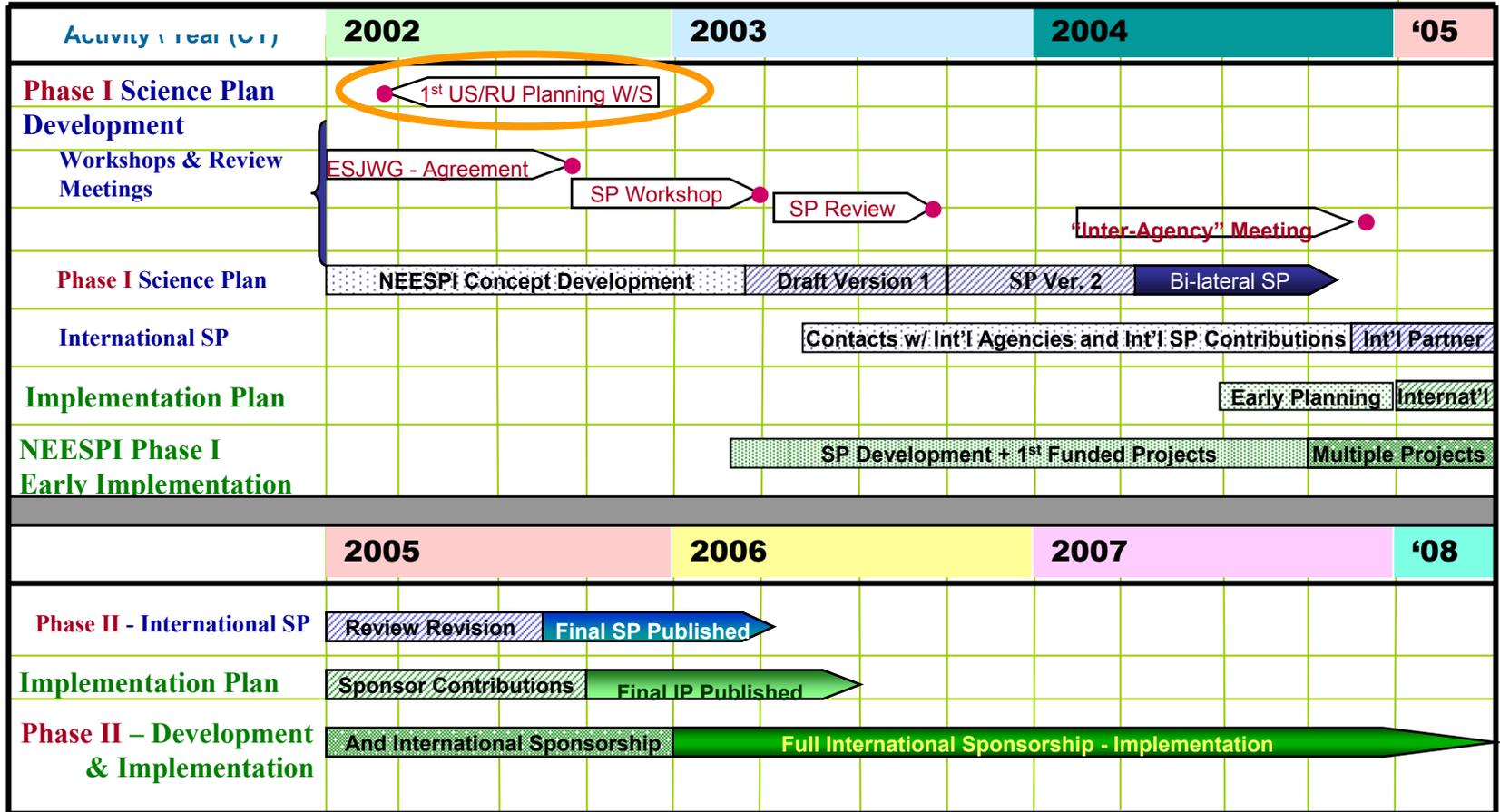
- **NASA and the RAS began an initial development of the NEESPI, formally initiating a dialog in January 2002**



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NEESPI Progress & Development Timeline

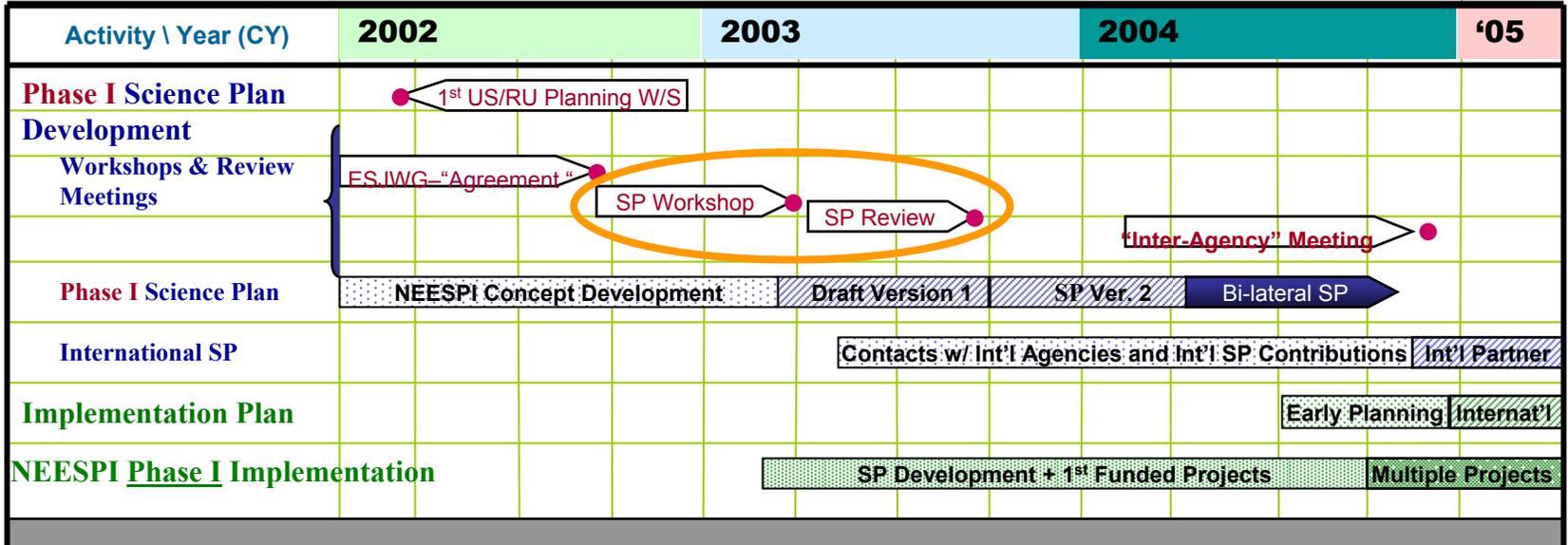
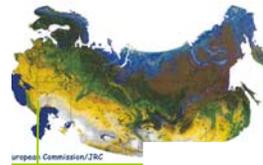




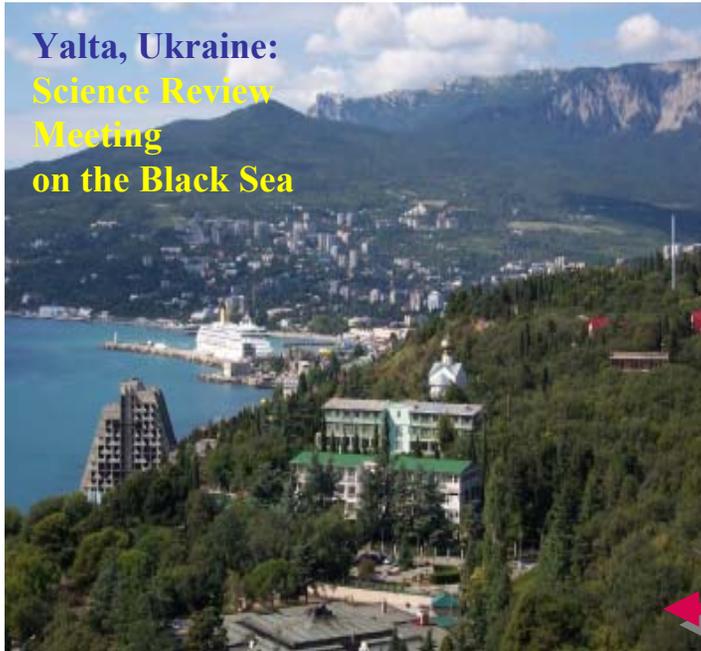
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NEESPI Progress

& Development Timeline



- **April 21 - 25 2003:**
**1st NEESPI Science Plan
Workshop**
Suzdal, Russia.



- **September 7-9, 2003:**
**NEESPI Science Review
Meeting**

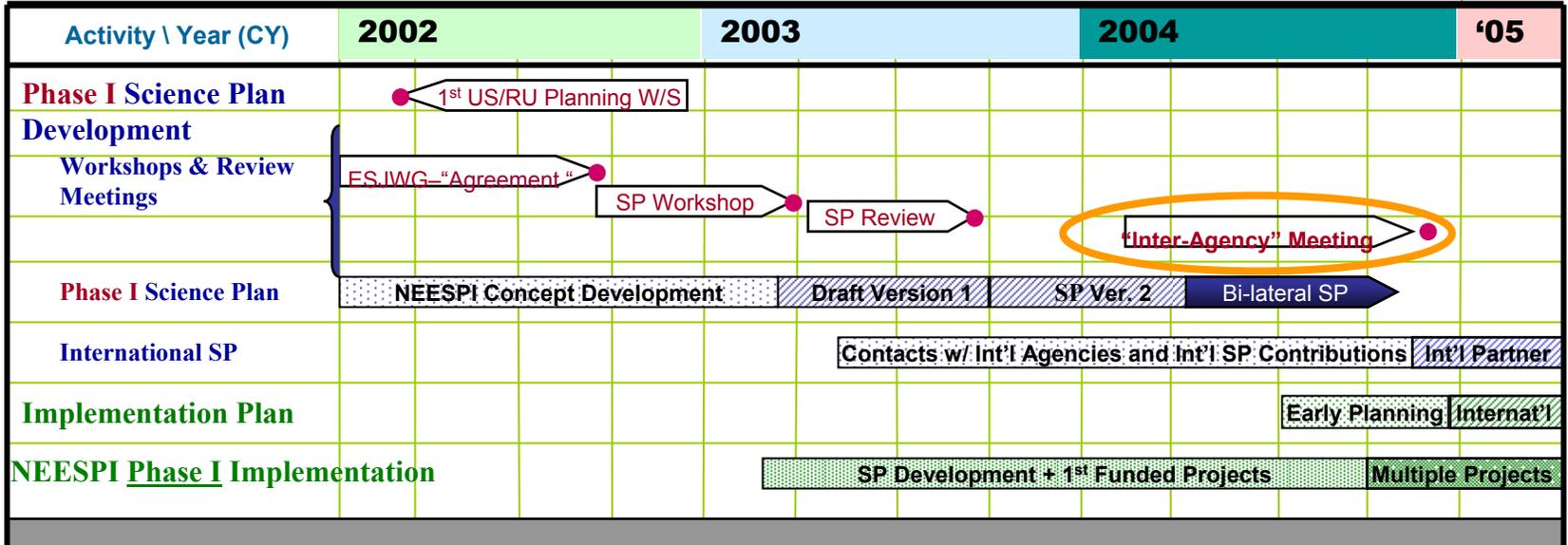
Yalta, Crimea -
Ukraine

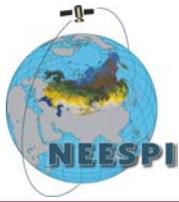


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NEESPI Progress

& Development Timeline





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The Need for the NEESPI?



Fundamental problem: There is a lack of needed data and adequate understanding of the functioning of the biophysical system of the Northern Eurasia region which points to the need for well-integrated projects with broad-scale international participation.

Potential result from satisfying this problem: Essential knowledge and that is critical to assessing global change and feedbacks for this region and tools to enable accurate predictions and develop wise national and international policies.

➤ **International Support is Required for:
Further Science Plan Development,
International Coordination,
Project Funding and
Integrated Implementation**

NEESPI's Vision for "Strategic Evolution"

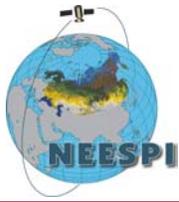
- ✓ **When NEESPI reaches its developmental maturation for full implementation, NEESPI should –**
- ✓ **Involve many, if not most, countries within the boundaries of Northern Eurasia**
- ✓ **Be multi-national**
 - ✓ in scientific **participation**
 - ✓ in project funding **sponsorship**
 - ✓ in project organizational **leadership**
 - ✓ Including,
 - ✓ multiple US gov't agencies
 - ✓ multiple Russian gov't agencies
 - ✓ multiple European gov't agencies, etc.

Interagency NEESPI Meeting Regarding . . . The Rationale for the NEESPI



In his first editorial (Sep.2004) as the new **Executive Director of the IGBP, Kevin Noone** made the following statements:

- “. . . to fully understand the Earth System ... We need both **integrative and disciplinary approaches** to make real progress.
- *Unfortunately, our educational systems and research infrastructure aren't well designed to promote interdisciplinary work...*
- *“It is often still difficult to convince both colleagues and **funding agencies that scientific integration requires more than collating results from a number of independent projects**, and must be planned and resourced from the beginning as a scientific activity in its own right.”*



Interagency NEESPI Meeting

Why are we here?

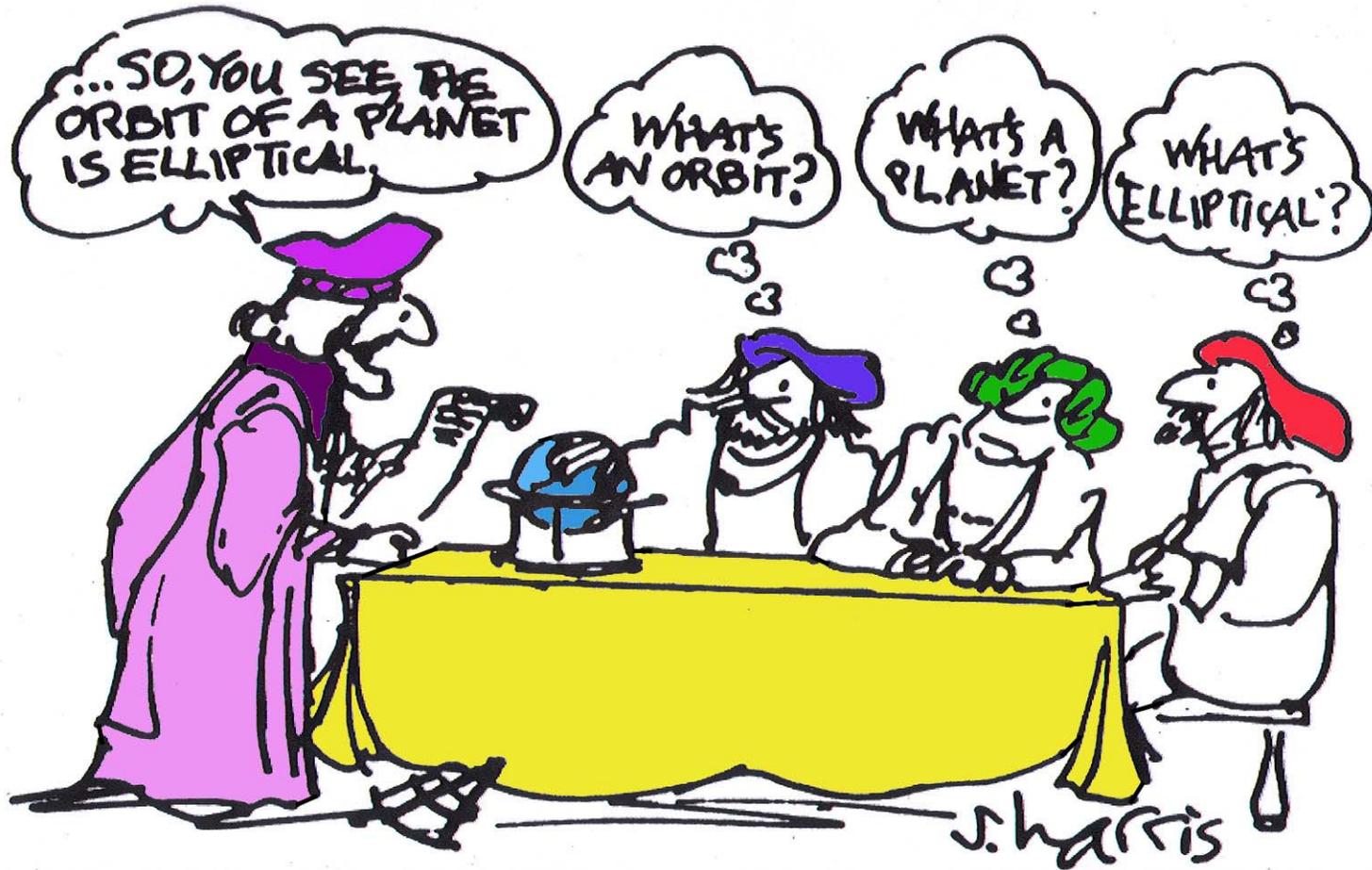


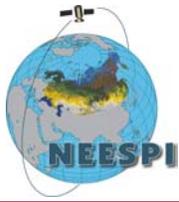
You were invited to this meeting because . . .

- we believe that **you are in a position to be able to “do something about it.”**
- There has been some misunderstanding about the NEESPI . . .
• what it is and what it is intended to accomplish -- and how . . .
•

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Have We Been Misunderstood ?





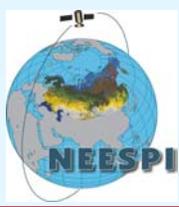
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Why are we here?



You were invited to this meeting because . . .

- We believe that you are in a position to be able to “*do something about it.*”
- There has been some misunderstanding about the NEESPI what it is and what it is intended to accomplish -- and how. . . ***so we hope to clear up some of that confusion.***
- Phase II of the NEESPI is designed to expand the active participants in the program by **engaging key research program leaders** in the planning process in order to:
 - Understand kinds of research they are supporting in N.E.
 - Begin discussions regarding shared interests in such research
 - Seek to **expand upon existing research capabilities for *integrated, regional research* through coordination and collaboration** while achieving mutual benefits to all groups involved.

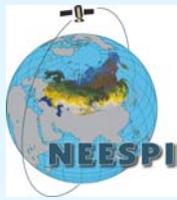


So ... What is the NEESPI?

... from a Pragmatic Perspective

- An instrument for **coordinating** with other countries and multiple government agencies on Northern Eurasian science topics of mutual interest - and defining the roles where each partnering organization can contribute effectively
- A tool for defining and developing a **prioritized science planning strategy** for optimizing allocation of scientific resources for the study of this enormous complex region of global importance
- A mechanism for **integrating** disparate Earth science investigations from many countries and agencies that are already working in the region of Northern Eurasia
- An opportunity to uniquely **draw together knowledgeable scientists** and develop mechanisms for **obtaining and sharing** sometimes difficult-to-obtain data and results about this large landmass and conduct critically important, unbiased Earth systems science





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NEESPI Development & Implementation

Strategic Evolution - *Continued*

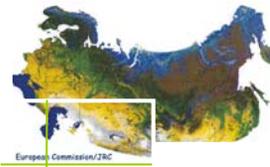


- **NEESPI is intended to be a broad-based international program of supported (funded) research**
 - *this meeting is directed toward initiating Phase II, which has a vision of realizing this goal.*
- **NEESPI seeks connections and will operate synergistically with**
 - Government agencies (Russia, Ukraine, China, Europe, U.S., Japan, . . .) and other research and support organizations,
 - National and international science (e.g., GEWEX, IGBP, GCCP) and other programs and projects (e.g., GOFC/GOLD; GLORIAD) – particularly those relevant to Global change research.
- **A NEESPI “strawman” *timeline* for this strategic evolution reflects the necessary phased approach.**

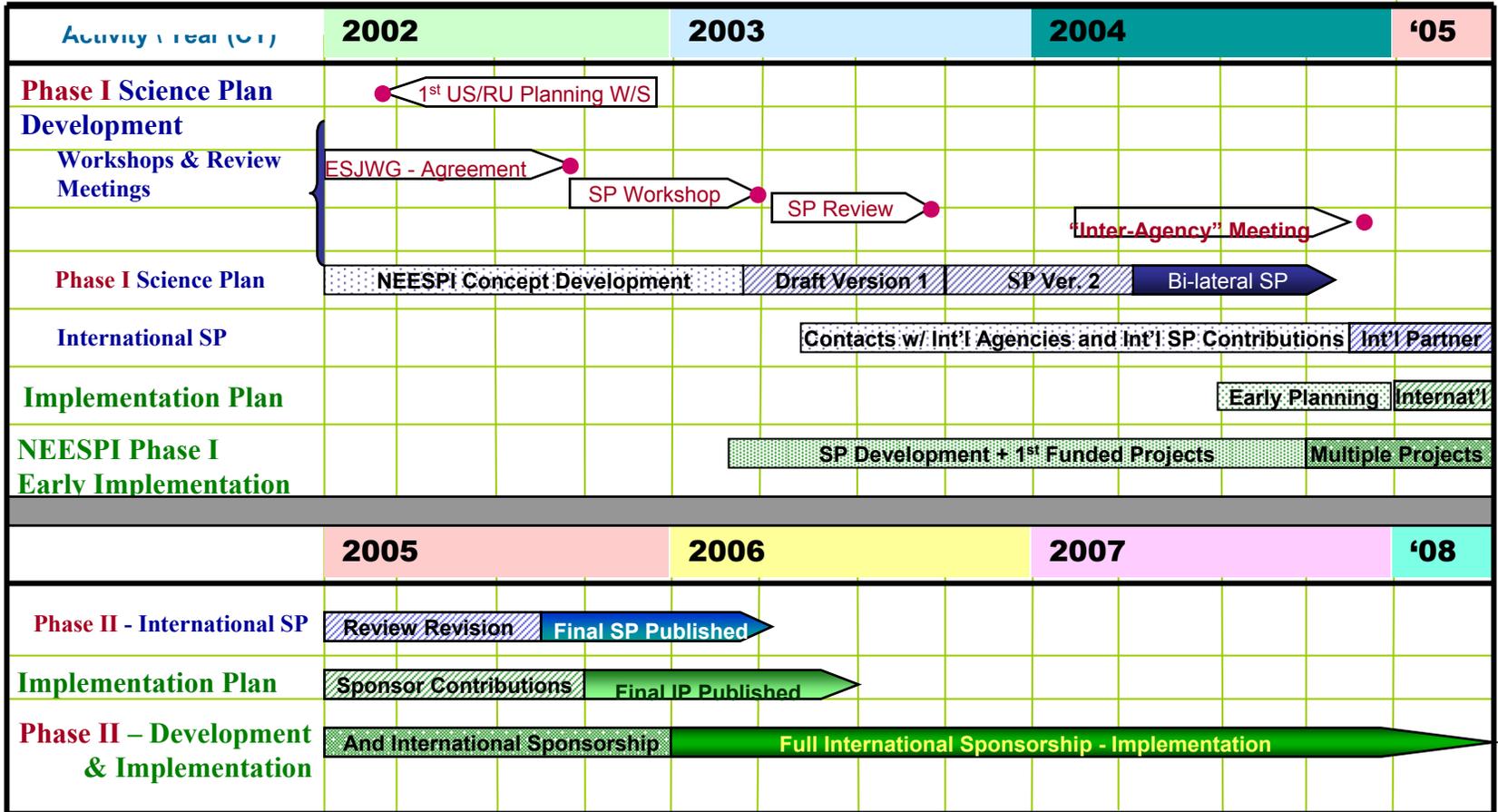
“If not we, then who?” - Ronald Reagan



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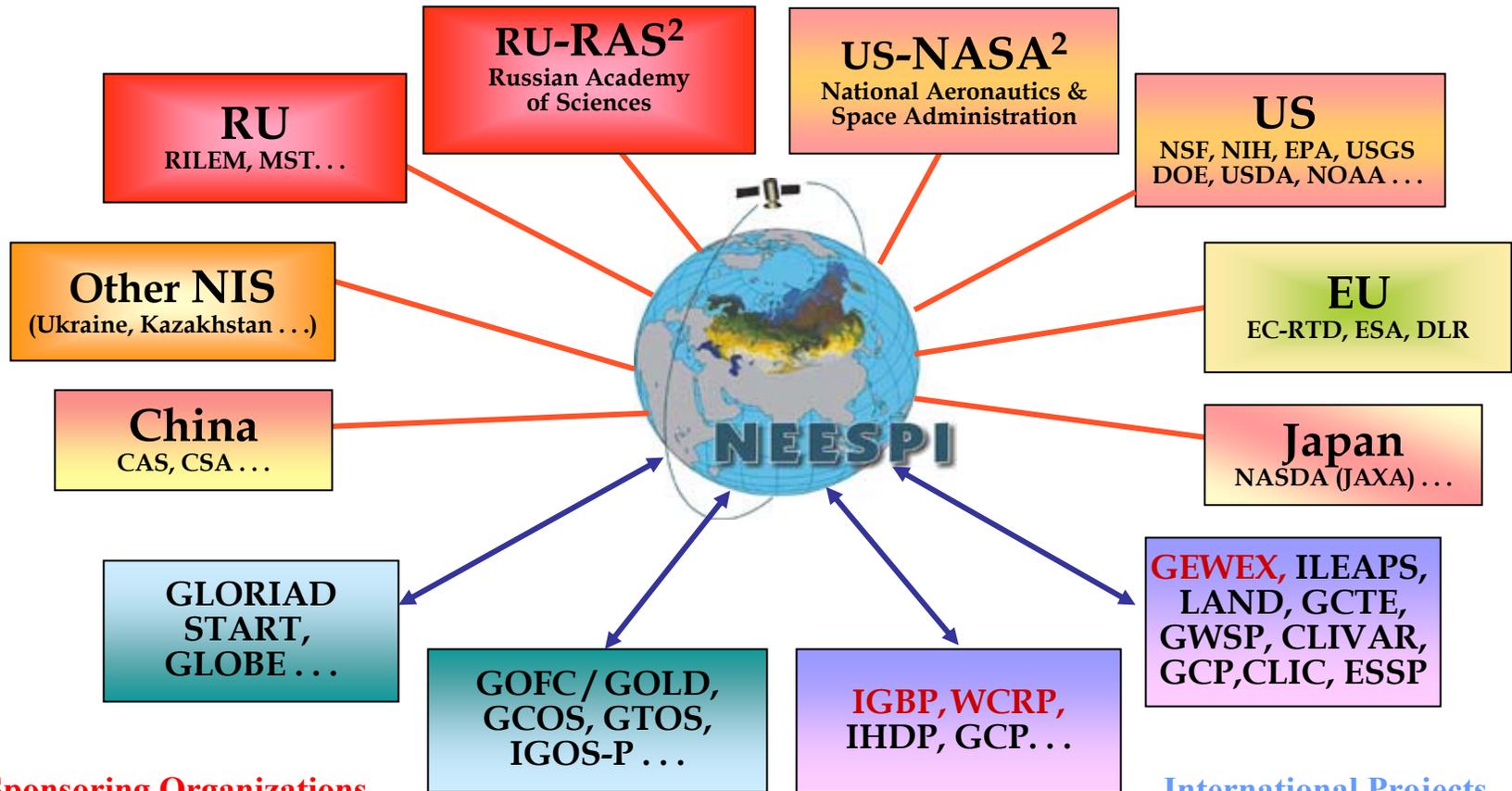


NEESPI Progress & Development Timeline



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Examples of Potential NEESPI SPONSORSHIP AND LINKAGES¹



Sponsoring Organizations

- NEESPI Program Development
- Research Funding Support
- Organization & Implementation Committee

International Projects

- Scientist Networks
- Data Sharing
- Data Analysis/ Synthesis

¹ anticipated participation with project maturation

² founding sponsoring organizations

Is Anything *Really* Moving ... or is it just an Illusion?

