

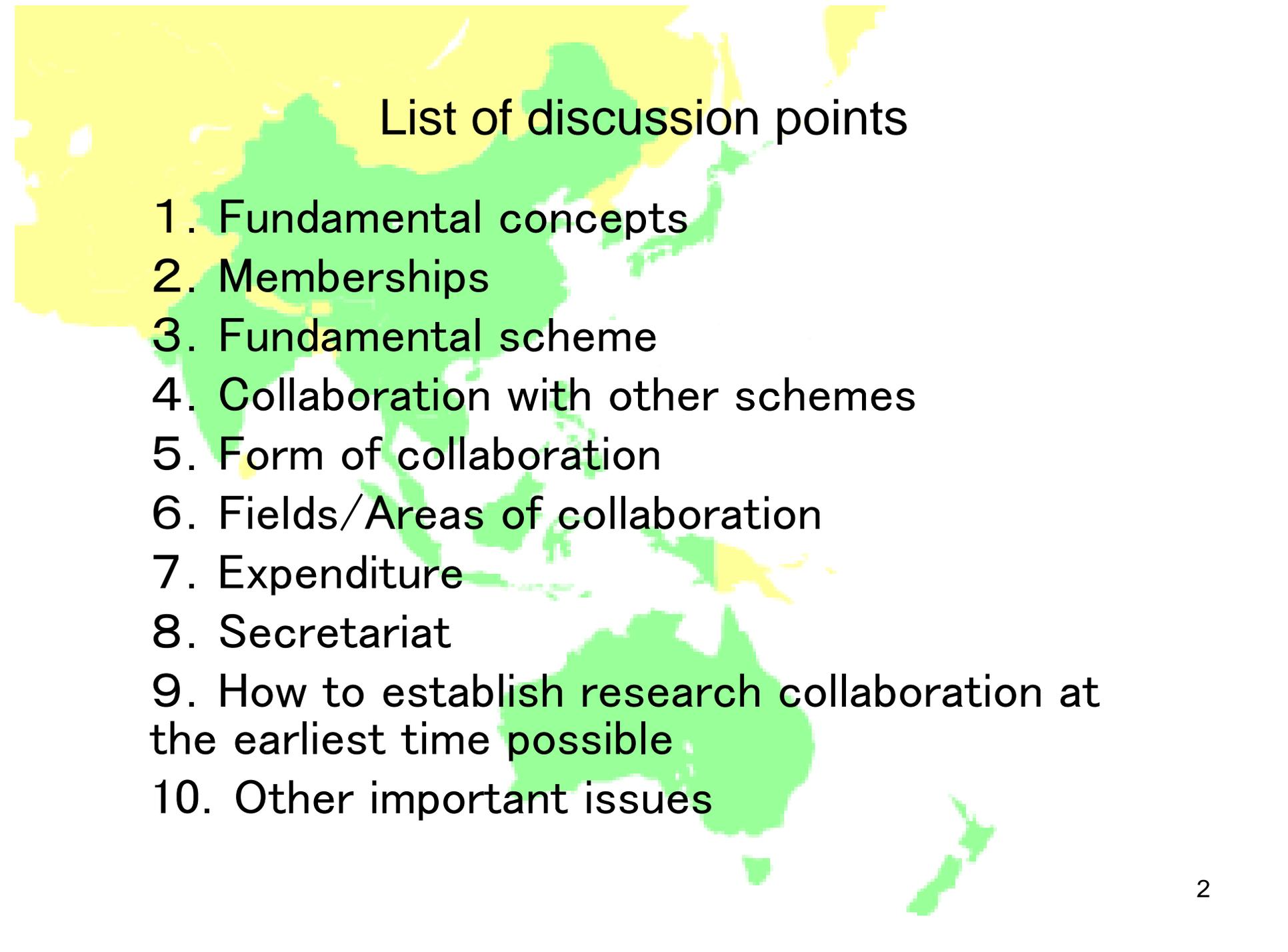


**Discussion points for the e-ASIA
Joint Research FORUM
(Toward "The East Asia Science and
Innovation Area")**

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**Ministry of Education, Culture, Sports, Science
and Technology (MEXT)**

Japan Science and Technology Agency (JST)



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1. Fundamental concepts

1-1. Concept for establishing a scheme for joint research in the East Asia (hereinafter referred to as the “e-ASIA Joint Research Program”)

□ Objectives of the “e-ASIA Joint Research Program”:

○ The “e-ASIA Joint Research Program” pursues, in the politically prioritized fields, the state-of-the-art technologies as well as solutions to common issues to realize innovative and robust economy and society in the region.

□ Bring about the Asia Science and Technology Community:

○ To realize development of economy and society in the East Asia, it is inevitable to lift up the level of science and technology in the whole region and connect it to the performances of industrial activities and reforms of social systems.

○ The “e-ASIA Joint Research Program” sets out to be a loose and flexible collaborative opportunities in science and technology which are indivisible from economic and social development. E-ASIA Joint Research Program is a concept or policy for promoting science and technology community in the east Asia and is nothing to do with an organization for political and social integration.

○ The “e-ASIA Joint Research Program” is a science and technology community where the best brains can get together to formulate the best research collaboration.

□ Bring about e-ASIA Joint Research Program:

○ Research collaboration will be feasible by the “matching fund system”, and no need for establishing a new foundation such as HFSP.

□ Lift up the level of science and technology in the East Area region and realize innovative economy and society

○ Make use of abundant human resources in the East Asia and generate “novel knowledge”, “competitive technology” and “reforms of systems” which are the source of dynamics in the economy and society.

□ Respect and utilize the diversity in the East Asia region

○ Diversity in the East Asia region in the history, people and culture are the source of creation, which will be respected and combined as competitiveness.

1. Fundamental concepts (Cont'd)

- ❑ Pursue synergistic, supplemental and leveraged effects by multilateral cooperation.
 - Achieve these three effects, which is possible not by a single nation but by combination of best potentials in the East Asia.
- ❑ Establish and amplify “equal partnerships”
 - In the “e-ASIA Joint Research Program”, genuine partnerships for mutual contribution and mutual allotments of outcomes are called for.
- ❑ Establish and amplify “scientific management”
 - Decisions will be made based on data and rational judgments supported by experiences and consciousness of scientists. Embeds the “scientific management” approach in the East Asia research activities.

1-2. Japan's engagement in the East Asia Science and Innovation Area

- ❑ Japan takes initiative to promote the “e-ASIA Joint Research Program”. In this initiative, participating countries formulate a mutually beneficial framework which is also open to countries outside the region, jointly implement research and development to promote innovations in the region, overcome common issues and facilitate capacity building and mobility of human resources.
- ❑ For this purpose, in accordance with their own roles to play, MEXT (Japanese Ministry of Education, Culture, Sports, Science and Technology) with assistance of JST (which aims at comprehensive propulsion of basic research for creating scientific and technological knowledge to be the source of innovation and formulate infrastructure for promotion of science and technology) is preparing a scheme for the “e-ASIA Joint Research Program” in order to implement joint research for economic and social innovation as well as overcome of common issues in the region.

2. Memberships

❑ Memberships and roles of members:

○ The initially assumed members are the ten countries constituting the “ASEAN”, plus six countries which are Australia, China, India, Japan, New Zealand and South Korea (by an alphabetical order) (hereinafter referred to as the “ASEAN+6”). The “e-ASIA Joint Research Program” will be inaugurated by pronouncement of participation by more than (5) countries.

○ Participating countries will be the constituent members of Board Meeting and be involved in fundamental decisions in managing the “e-ASIA Joint Research Program”. Some of the examples to be included in fundamental decisions are ① Revision of objectives and fundamental concepts in setting up the “e-ASIA Joint Research Program”, ② Decision on the basic mechanism of managing the “e-ASIA Joint Research Program”, ③ Change in the “initially assumed” members participating in the “e-ASIA Joint Research Program” (accession, secession, etc), ④ Decision on guest partners and observers, ⑤ Termination of collaboration by the “e-ASIA Joint Research Program”, ⑥ Decision of collaborative fields.

○ Decision-making by Board Meeting shall be made in principle by consensus. When necessary, votes will be taken. (Basically by simple majority rule. On important matters, majority by the 2/3 rule.)

❑ Positioning of quasi participating countries and guest partners:

○ Within the “initially assumed” members (“ASEAN+6”), those who need take time for official internal procedures will be quasi members of Board Meeting as quasi participating countries and will be assured with opportunities and functions same to those of participating members. However, they will not participate in decision makings of Board Meeting.

○ Nations or regions other than the “ASEAN+6” may be guest partners of the “e-ASIA Joint Research Program” with the consent of Board Meeting and be involved in the “e-ASIA Joint Research Program” activities with the same capacity as member countries. However, they will not be constituent members of Board Meeting.

❑ Observer Countries/regions:

○ Nations or regions other than the “ASEAN+6” may be observers of the “e-ASIA Joint Research Program” with the consent of Board Meeting and collect information on the “e-ASIA Joint Research Program” activities.

3. Fundamental scheme

□ Board Meeting by members :

○ Board Meeting consists of participating countries. Decides on the fundamental issues regarding management of the “e-ASIA Joint Research Program”. Fundamental issues are ① Revision of objectives and fundamental concepts for setting up of the “e-ASIA Joint Research Program”, ② Decision on the fundamental mechanism for managing the “e-ASIA Joint Research Program”, ③ Change in the assumed participants in the “e-ASIA Joint Research Program” (accession, secession, etc), , ④ Decision on guest partners and observers, ⑤ Termination of collaboration by the “e-ASIA Joint Research Program”, ⑥ Decision of collaborative fields.

□ Advisory Council :

○ Advisory Council consists of senior researchers recommended respectively from each member country. A body to give advice on fundamental issues for science and technology regarding activities of the “e-ASIA Joint Research Program”. Its main functions are to make recommendations or advices to Board Meeting relating to ① Deciding research areas, ② Choosing advisors in respective areas, ③ Appointing peer review panel members in respective areas. Recommendations or advices by Advisory Council will be respected by Board Meeting.

□ Peer-review Panel :

○ Evaluate and select projects in response to calls for proposals in determined collaborative areas, review progress of selected projects and conduct post evaluation.

○ Peer-review Panel consists of experts who have expertise in the respective collaborative areas and be fully responsible for project evaluation. Project evaluation will be conducted with viewpoints of ① scientific and technological superiority, ② scale of impacts on economy and society, ③ effects of research exchanges and contribution to brain circulation.

□ Management of research activities by scientists :

○ **Introduction of leading principal investigators:** A research project will be conducted by a collective body of research teams, with a principal investigator (a research team leader) heading each team. “Leading principal investigator” selected from principal investigators will manage the research project with leadership to assure integrity within the entire project, flexible implementation of research, decision making in a timely manner and securing best human resources, etc.

○ **Introduction of area advisors:** Area advisors will be introduced to perceive progress of projects which are supported under respective collaborative areas and to give advice to lead principal investigators. It is desirable that the chairperson of Peer-review Panel be the area advisor.

4. Collaboration with other schemes

❑ ASEAN COST:

○ If ASEAN COST were a member of the “e-ASIA Joint Research Program”, then it would be necessary for ASEAN COST as one entity to discuss and make decisions on each activity of the “e-ASIA Joint Research Program”. It is desirable that a proper governmental body or funding agency from each country will directly participate in the “e-Asia Joint Research Program”.

○ It is ideal but not very practical that all of the 10 countries of ASEAN participate in the “e-ASIA Joint Research Program” from the beginning, so that each country should decide whether they will participate in the “e-ASIA Joint Research Program” or not.

○ For ASEAN COST, the “e-ASIA Joint Research Program” is a framework which offers valuable opportunities for collaboration with participating other countries than ASEAN area. Close collaboration between activities of ASEAN COST and the “e-ASIA Joint Research Program” is important. Specifically, it is desirable that ASEAN COST participates in the “e-ASIA Joint Research Program” as an observer.

❑ ASIAHORCs:

○ While ASIAHORCs is a platform among organizations for the promotion of science to strengthen the network through exchanges of views and information among the heads of agencies and symposia for fostering young researchers, the “e-ASIA Joint Research Program” forges a joint framework with regard to policy-oriented research and development for promoting innovation and solving common issues in the region. Close collaboration between ASIAHORCs and the “e-ASIA Joint Research Program” is envisaged.

❑ APEC ISTWG:

○ As for APEC ISTWG, the “e-ASIA Joint Research Program” is a framework which offers valuable opportunities to develop joint activities regarding common issues within the region (exchange of information, symposia, etc) to joint researches. Close collaboration between APEC ISTWG and the “e-ASIA Joint Research Program” is important.

5. Form of collaboration

❑ **Joint Research by Matching Fund:**

○ Organizations which wish to participate in particular projects provide the same amount of financial support per one research team leader (Principal Investigator: PI) from their respective countries. Each PI forms a research team with multiple researchers from his/her own country.

❑ **Research Exchange by On-top Fund with existing project as the core:**

○ Countries/organizations B or C which wish to have research exchange with an existing project of a country/origination A will, with the consent of A, provide fund to researchers of B or C for research exchange. It is desirable if A could give out additional fund to the organization which is conducting this existing project to accommodate this research exchange. In case A, B or C are conducting similar projects at the same time, more effective collaboration, rather than research exchange among projects, is expected.

❑ **Information Exchange Regarding Best Practices:**

○ Each country presents successful case practices which are beneficial to the “e-ASIA Joint Research Program” regarding support systems for research and development, social implementation of outcomes and international collaboration. Holding a symposium which is open to the public is desirable. Travel and accommodation fees will be borne by participating organizations while local costs will be borne by host country.

❑ **Promotion of Research Exchange Among Young Researchers:**

○ In the course of above-mentioned collaboration such as implementing the joint research program, young researchers will be given priority on participation or a special consideration in expenses.

Note: Workshop or networking is sometimes necessary for formulating international collaboration among researchers to develop joint proposals. Affiliated/interested countries provide fund to preparatory activities to develop ideas to propose for international joint research. 8

6. Fields/Areas of collaboration

❑ **Concept of collaborative field:**

○ Necessary to have the mutually interesting fields among participating members. “Challenges to issues which are the basis for economic and social developments in the region” as well as “solutions to common issues within the region” will be the focal areas.

○ Collaboration in competitive fields such as industrial technology will be consigned to collaboration among enterprises. The “e-ASIA Joint Research Program” will focus on pre-competitive fields which would at later stage definitely contribute to the competitiveness of the industry.

❑ **Examples of areas for “challenges to issues which are the basis for economic social developments:**

○ Novel materials supporting advanced technology (alternatives for rare earths, materials for ICT, etc)

○ Achieving sustainable energy (dramatic rise in efficiency, cost deduction, etc)

❑ **Examples of areas for “solutions to common issues within the region”:**

○ Preparation for and mitigation of massive natural disasters and emergency situations.

○ Advanced systems for materializing a secure society (ICT security, prevention of epidemics and pandemics, etc)

❑ **How to decide on collaborative fields/areas :**

○ Fields will be decided by the consensus of Board Meeting. Specific collaborative research areas in the set field will be determined by three or more interested countries. Acceptable to set-up many areas.

❑ **How to call for proposal, evaluate and decide on supported projects**

○ In the determined areas, funding agencies of interested countries (or the e-ASIA Joint Research Program Secretariat) call for international collaborative proposals. Of the submitted proposals, projects to be supported will be chosen by Board Meeting with viewpoints for ①scientific and technological superiority, ②scale of impact on economy and society, ③effects of research exchange or contribution to brain circulation, especially building up young research human resources, paying due consideration to the results of evaluation made by peer review panel.

○ Evaluation will be conducted by a peer-review panel, which is set up in each area. Members of peer-review panels are selected on the basis of recommendation from advisory council. Peer-review panel could include reviewers from countries interested in the area.

○ Researchers from countries which are not interested in the determined areas may participate in projects in these areas, but have to recognize and accept that they may not be provided with research funds from their country.

7. Expenditure

❑ Principles for budget expenditure:

- Funding agencies financially support activities of research teams (PIs) from their countries. Support amount will be determined in accordance with number of supported research teams.
- Activities of Secretariat and secretariat members will be covered by voluntary in-kind contribution and overhead cost will not be collected from participating countries.
- Following amounts of expenditures are model cases of standard activities and subjected to discussions among researchers based on actual activities.

❑ Joint Research by Matching Fund:

- 50,000USD/year per a research team (a PI) from own country
- Research funds will not basically cross borders. In case researchers gather at core research institute in other countries, research funds may be commissioned to the core institute.

❑ Research Exchange by On-top Fund with existing projects at the core:

- 10,000–25,000USD/year per research team from its own country in hope for research exchange.

❑ Support for Building Up Partnerships:

- 10,000–15,000USD per PI from its own country in hope for building up collaboration with partner candidates.

❑ Symposium Regarding Best Practices:

- In case of hosting a symposium, 10,000–20,000USD per symposium.

❑ Promotion of Research Exchange Among Young Researchers:

- In case of preparing special expenses for young researchers, 5,000USD per person.

❑ Contribution to secretariat functions (image):

- In case of voluntary in-kind contribution for activities of secretariat members (office rental, office operation cost, expenses for travel and stay, etc, but excluding personnel), 50,000USD/year per person.

- In case of holding such meetings as Board Meeting, Advisory Council, Peer-review Panel,¹⁰ etc, to be prepared by secretariat, 20,000USD per meeting.

8. Secretariat

❑ Functions expected from Secretariat:

○ Secretariat supports entire administrative matters of the “e-ASIA Joint Research Program” activities. Details of supports are ①to organize Board Meeting, Advisory Council and Peer-review Panel ②to organize symposia/workshops, implement outreach activities of research outcomes, ③to support for science advisors or leading principal investigators, ④to survey/analyze research collaborative fields, make plans regarding cooperation and coordinate among members.

❑ Scale of Secretariat and Management:

○ For the time being, three members (1 senior leader and 2 coordinators) will be sufficient. Member countries will in turn provide their personnel after every 3 years. JST is preparing to offer one personnel.

❑ Location of Secretariat:

○ Suggest to locate Secretariat in Singapore, which is in the center of the member countries of the “e-ASIA Joint Research Program”. If possible, Secretariat will have legal personality in accordance with local law and be able to make contracts (such as to make legal contract). When it is difficult for Secretariat to acquire legal personality, then it would spare some space at a host organization or the host organization would take over to make contracts for Secretariat.

❑ Alternative when Secretariat will not be established:

○ Fund-providing organizations of member countries will offer substantive functions of secretariat in turn after every three years. Other members in turn provide personnel (2 coordinators) for Secretariat. A fund-providing organization will execute above-mentioned Secretariat functions.

9. How to establish research collaboration at the earliest time possible

It is projected that at least two years will be necessary to establish and operate the above-mentioned “e-ASIA Joint Research Program” scheme, including to conclude MOU, to formulate mechanism of management, to determine collaborative fields/areas, to call for proposals, to evaluate and select project and finally actually implement joint research. It is necessary to establish research collaboration at the earliest time possible to address urgent issues in the East Asia region. To correspond to this need, we propose preceding actions as follows.

□ Expansion of existing joint research :

○ For example, JST is conducting in total 33 research exchange projects with India in “Information and Communication Technology”, with Australia in “Marine Science”, with New Zealand in “Bio Science and Biotechnology”, with South Korea in “Bio Science”, with Thailand in “Biotechnology”, with Singapore in “Functional Application in Physical Sciences” under the framework of a research exchange program (SICP). Regarding these as “existing projects”, we can conduct “Research Exchange with existing projects as the core” as described in “5. Form of Collaboration (P8)”.

○ To be more specific, countries/organizations willing to have research exchange with any of the 33 projects will, with the consent of research institutes already conducting research exchange, offer funds for research exchange to their own researchers. It is desirable that Japan and its counterpart countries will provide necessary additional funds to research institutes conducting these projects so that these institute can accommodate research exchange with new partners.

○ In this way, practical multilateral research collaboration among ASEAN+6 will be possible at a relatively early stage.

□ Preceding actions for launching urgent joint research :

○ Three or more countries sharing interests will launch urgent international collaborative program and accumulate performances of multilateral collaboration in the East Asia region. Urgent issues with regard to Japan are, for example, preventing disasters caused by earthquakes and tsunamis, nuclear safety and alternatives for rare metals.

○ In this way, multilateral research collaboration by the “AEAN+6” will be partially realized as preceding action.

Note: After the establishment of the e-ASIA Joint Research mechanism, above preceding multilateral projects needs to be treated as a part of e-ASIA Joint Research activities through due process such as approval of Board Meeting.

10. Other important issues

❑ Handling of Intellectual Property Rights:

○ In principle, scientific knowledge will be made open or publicized jointly by contributors and shared by the entire members afterwards. Intellectual property rights will be shared in accordance with scale of contribution. Incomes earned by implementation or necessary costs for acquiring or holding intellectual property rights will be shared by members in accordance with set quota.

○ Quotients of intellectual property rights will be determined by each project team and will not be intervened by any country/funding agency.

❑ Schedule onward/milestones:

○ Higher working-level meeting: Utilize the occasion of “STS Forum in Kyoto” scheduled in early October. Organized in Kyoto or Tokyo. Targeted at formulating consensus at higher working-level staffs. Also discuss and coordinate interesting collaboration fields and areas.

○ Higher working-level meeting: Organized in Feb. next year. Venue to be determined. Formulate fundamental agreement for inaugurating the “e-ASIA Joint Research Program”. Review MOU/guidelines. Signing will be expected to be completed at an early stage in accordance with internal procedures in each country.

○ Later on, determination on specific collaborative areas, calls for proposals, evaluation and selection of projects will take about one year. Actual expenditures for research will be expected to start in 2013.

❑ Signatory of MOU

○ Appropriate organization shall sign MOU or the e-ASIA Joint Research Program framework to be agreed upon in accordance with national laws and regulations. Though ministries responsible for promotion of science and technologies and/or funding agencies for research and development are expected, it depends upon the decision of member states.