



## STRENGTHENING COOPERATION ON ICT RESEARCH BETWEEN EUROPE AND SOUTHEAST ASIA



# Cooperation priorities First inputs from the Advisory Committee

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## SEACOO in a nutshell



SEACOO is an initiative aiming at strengthening cooperation on ICT research between Europe and the countries that are members of the Association of Southeast Asian Nations ([ASEAN](#)): Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

This initiative is supported since 2004 by the European Commission ([Directorate General Information Society and Media](#)) through its Framework Programme for Research and Technological Development (FP6 and [FP7](#)), and by the ASEAN Secretariat since 2008.

Among planned SEACOO activities over the period 2010-2011:

- Identification and analysis of ICT policy and research priorities, at bilateral and regional levels, and provision of recommendations for future cooperation initiatives,
- Organization of cooperation events in Europe and in Southeast Asia synchronised whenever possible with policy dialogue meetings,
- Development of synergies with dialogues and activities launched under EU-funded programmes, at the initiative of EU Member States and Associated States, and at the ASEAN level,
- Development of promotion, dissemination and awareness-raising activities.

One of the main expected outputs of SEACOO activities is logically a strengthened development of concrete cooperation projects in ICT research, namely under FP7.

SEACOO is coordinated by [Sigma Orionis](#), a company based in France and devoted to supporting cooperative research in ICT and global ICT developments, and includes, on the Southeast Asian side, the organisations playing a key role in ICT policy and research in each of the ten ASEAN countries:

- Advanced Science and Technology Institute ([ASTI](#)), Philippines
- Agency for the Assessment and Application of Technology ([BPPT](#)), Indonesia
- Institute for Infocomm Research ([I<sup>2</sup>R](#)), Singapore
- Multimedia Development Corporation ([MDEC](#)), Malaysia
- National Authority for Science and Technology ([NAST](#)), Laos
- National Council for S&T Policy ([NCSTP](#)), Vietnam
- National Science and Technology Development Agency ([NECTEC](#)), Thailand
- National ICT Development Authority ([NiDA](#)), Cambodia
- University of Brunei Darussalam ([UBD](#)), Brunei Darussalam
- University of Computer Studies, Yangon ([UCSY](#)), Myanmar

For further information, please visit the [SEACOO web site](#) or [contact us](#).

## The SEACOOP Advisory Committee



In order that SEACOOP activities can take advantage of the experience of key organisations from Europe and Southeast Asia involved in cooperation in ICT research between the two regions, and can also be of the greatest benefit to them, a SEACOOP Advisory Committee has been created.

This Committee is composed of representatives from over 20 leading constituencies, companies, research institutes and academia, including the main European Technology Platforms in the ICT area, and key European initiatives in Southeast Asia. Beyond this core group, presented below, other individuals or organisations will be invited on a case-by-case basis.

The members of the SEACOOP Advisory Committee are expected to contribute to SEACOOP activities, particularly regarding the identification of cooperation priorities, and the provision of recommendations for future cooperation initiatives.

It is also foreseen that useful synergies between SEACOOP activities and the ones developed by the organisations represented in the Committee will develop over the 2010-2011 period.

The present document constitutes a first contribution of this Committee, its members having kindly provided answers to three key questions raised by the SEACOOP partnership, related to the perspectives of cooperation in ICT research between Europe and Southeast Asia.

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## Inputs from Advisory Committee members

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

In recent years we have witnessed a rapid increase in the flow of people that are moving into urban centres to be closer to emerging wealth opportunities. However this also exposes them to the risks associated with city life including traffic accidents, air pollution and other health issues. This influx of people is also placing even higher demands on civic infrastructure including transport and utility networks, which has been particularly evident in regions of the world like, for example, South East Asia.

The opportunities that advances in ICT research in Europe could bring to the provision of lasting solutions to these emerging regional problems cannot be underestimated. In particular, recent advances in sensing systems and flexible service-orientated platforms with common architectures offer a number of attractive properties. Underlying joint EU-SEA research cooperation should focus on the development of distributed sensing and computing networks that are flexible to deploy and re-deploy, use cheaper technologies and that can scale to enable new services. For example, ICT solutions developed in the EU to enhance mobility, environment sustainability and energy efficiency might not be transportable without changes. However, relatively simple modifications may allow innovative region-specific solutions in which state of the art technologies are adapted to suit regional policies and priorities and social wealth realities.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

We should address similar problems to the ones highlighted as priorities for Europe. In my opinion the following two points summarises what I consider to be priorities:

- Management for environmental sustainability & Management for climate change adaptation.
- Management of increasing demand for energy & reduction on CO2 emissions.

Environmental services and climate change adaptation

Examples:

- Environmental sustainability: a) urban environmental monitoring; b) traffic congestion management; c) durability of the underlying utilities and civil infrastructures; d) new environmental services.
- Climate change adaptation: a) robust solutions for urban planning and roadmap to future evolution: b) monitor environment degradation due to climate changes of facilities structures and services on which they depend e.g., water supply and treatment, transport and electricity; c) risks associated with the interconnected nature of transport, water, electricity and civic infrastructure.

Novel ICT solutions for smart electricity distribution networks

Examples:

- Intelligent support operations/decision systems for electricity distributions power systems which include renewable sources and storage.
- Interconnects and cooperative systems for electrical distributions.
- Robust solutions for urban centre evolution.

Mobility of the future

Examples:

- Clean and intelligent vehicle systems as part of cooperative interconnected utilities networks: a) reduction in CO2 emissions; b) Electric vehicle and its impact on evolving power grids; c) alternative modal mobility.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

- Awareness of regional and country policies and research initiatives/priorities: creation of hubs where support for partnership creation can be facilitated.
- Strengthen Intelligence on relevant and focused research networking.
- Identify key overseas institutions with complementarities and high synergies to EU framework research priorities.
- Identify profiles, expertise and key personnel and establish web-networks and encourage/organise web-forums etc
- Sponsor visit and meetings between key institutions to understand complementarities etc.



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Due to economic developments in this region in the last decades, it is obvious that Asia is a quick developing market and ICT is key enabler which has a direct link to the strategically important areas for the key position of the region such as transport and energy. Moreover, as stated in the report of i2010 High Level Group<sup>1</sup>, ICTs contributed to about a half of European productivity gains in the second part of the 1990s and in the first half of the present decade. Therefore, strengthening the cooperation between EU and South-East Asian policies is in the interest of both regions' economic development.

In addition, information technology and electronic communication networks and services are major topics for economic and social development of the region. Due to its ICT strength, the region is an important partner for EU.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

Before answering this question, previous cooperation activities among South East Asian and European researchers should be scanned and the tendencies should be determined.

In addition, when one considers the database of Southeast Asian excellence centers in ICT research which is given in "[http://www.eurosoutheastasia-ict.org/research\\_centers\\_2.php](http://www.eurosoutheastasia-ict.org/research_centers_2.php)" and ICT research potential of Turkey in particular and Europe as a whole, the following research areas can be proposed:

- The Internet network technologies and architectures will be used in the next years for supporting vital services such as transport, health, environment, government, transport and education. This is a global

<sup>1</sup> The Economic Impact of ICT: Evidence and Questions, i2010 High Level Group, 2006

concern and a great challenge for Europe to achieve Internet of Future in a sustainable and inclusive way. Trustworthy networks, high speed communication, mobile web are some examples of SEA region's priorities and challenges for future. Thus, Network of the Future, Trustworthy Network and Service Infrastructures can be considered as priority research topics.

- Developing public policy objectives for an e-society by using ICT as an instrument of social development is a key challenge for the SEA region; therefore e-learning, technology enhanced learning, ICT for governance and policy modelling, e-inclusion, e-health can also be considered as priority research topics.

- Research Infrastructures can be a priority to facilitate the integration and structuring the scientific community.

- ICT will be used in the next years for safer and more efficient mobility, new ICT technologies will be applied to transport and logistics systems to achieve sustainable development thus ICT for Mobility can be considered as another priority topic.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

In order to support the emergence of cooperation projects on ICT, the following instruments are kindly proposed:

- Researchers may be encouraged to better benefit from the Marie Curie Actions namely "the International Outgoing Fellowship" and "International Incoming Fellowship for Career Development" which will reinforce international cooperation between Southeast Asia countries and Europe.

- There may be some actions to make the cooperation established via International Outgoing Fellowship and International Incoming Fellowship sustainable by encouraging researchers to have joint projects within the context of ICT thematic Area.

- As an outcome of INCO-NETs; S&T priorities of mutual interest and cooperation policy orientations are determined with the participation of policy makers and stakeholders of a given region or group of countries with the EU partners. The successful implementation of those strategy papers is the main point which will lead to an impact for closer cooperation in S&T field. An action plan may be required to monitor for instances how those strategies are integrated to the Work Programmes of Thematic Areas and to monitor if the expected and targeted outcomes achieved.

- The activities promoting potential cooperation projects which are achieved through the website of EuroSoutheastAsia-ICT.org should be continued. However, there are not any examples for best practices which may encourage researchers further to cooperate. There may be some flagship projects or major cooperation initiatives which have been already realised.

- There may be also some public statistics indicating the usage of that website and the number of successful cooperative activities which are seen as an outcome of this project.

- Moreover, SEACOOP includes the key organisations in ICT policy and research field of each country, thus the bilateral S&T agreements between SEA countries and EU countries can be benefited to initiate cooperation events.



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Global challenges such as intensified techno-economic globalization, the rise of new global S&T players and changing geography of science reinforce the case for a strategic approach to international networking and cooperation in S&T. Within this framework we believe that the following strategic approaches are crucial for the future:

- Intensifying bilateral R&D partnership for knowledge sharing
- Creating avenues and opportunities through generic schemes for international mobility of researchers aimed at complementing and supplementing ongoing national networked research efforts
- Creating a global networking by launching cutting edge JOINT (EU-ASIA) research programmes with rules that are accessible to both sides in different thematic areas of common interest (i.e. environment, energy, nanotechnology etc). These must be based on matched S&T roadmaps from both "sides". Roadmaps based on a bottom up (industry users etc...) and top down national (or regional) strategic interests (including political ones) and long term development & visions. This last input could come from organizations like the ETPs but Asian.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

In relation to the European roadmaps as well as the priorities established by the ETPs the research topics to be considered as priorities are in our opinion the following: IPV6/ NGN/ Open Source Software/ RFID, Biometric and Smart Card/ Asia-EU research network connectivity and e-Infrastructure/ 3G development/ Frequency Management, Internet Governance, Universal Service.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

Primarily THE RECIPROCITY principle. EU FP 7 & 8 that is open to ASIA participation must have a mirroring rule of access in the Asian S&T programs in each Asian country. The EU should be, gradually, not the only "donor".

Secondly: address, sustain, develop etc... the network of support organisations and the NCPs that are the key elements to leverage the potentialities and skills of the ICT area and connect the whole IT constituency to concrete and structured co-operation opportunities with Europe in the perspective of FP7.

Help the local research system to structure an adequate network of support organisations. This includes ETPS "like" approaches but in Asia.

Directly address research organisations, companies, SMEs and facilitate their participation into RTD project consortia within the FP7 ICT programme by organising awareness rising and stimulation actions (i.e. mentoring workshops/ trainings).

New practical "ad hoc" tools for cooperation (in FP7 and 8).

Bilateral tools where National Asian funding match EU money (for example: facilitating networking of specialised IT clusters with the EU ones).



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Two major reasons:

- Research institutions from Southeast Asia are not adequately represented and do not often participate in international standardization organizations such as W3C. This leads to a lack of penetration and adoption of standards in Southeast Asia region on one hand, and on another hand, the lack of feedback and requirements from the region during the development of standards.
- For all researches on the use of ICT in socio-economic development, Southeast Asia institutions are naturally well situated to offer interesting use cases, requirements and application of EU ICT research results. This is not really happening for now

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

As mentioned in the previous question, research in the area of ICT4D (ICT for Development) are one area that should be leveraged. More specifically the current penetration and usage of mobile phones in Southeast Asia, and the current research trend in EU on mobile services could be a domain of mutual synergies.

Research on low-cost technologies in devices (e.g. low-cost laptops), telecommunications, etc. is also a domain of potential synergies.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

As a first step, identifying domains of synergies in terms of topics, and then resources/institutions/teams that are major actors in Southeast Asia and Europe on these themes might be useful.

Initiatives similar to what is done in Africa, like EU-Africa summit, on the different themes identified might also be interesting.

As a second step, promoting the development of specific research programs by the EU focused on identified themes might create a momentum

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*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

The focus you be on topics of highest interest for the European community and therefore corresponding to the FP7 strategic objectives. Example of key areas could be:

- Pervasive and Trustworthy Network and Service Infrastructures
- Communication services and services based on machine-to-machine communications
- Networks of the Futures and their applications
- SaaS, Internet of Services, Software and Virtualisation

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

The coordination with European technology Platforms could be encouraged to bring together European and Asian partners stakeholders together in a focused research domain.

Organisation of joint events proved very useful in the past for bringing together European and Asian scientists.

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

The Networked Electro Media European Technology Platform has the objective to share its vision and the related Strategic Research Agenda outside Europe in order to identify which research topics are the most relevant. South East Asia is a large area where multimedia is key for people (e-Education, e-Government, e-Health, ...). The NEM sector has to build a strong relationship with these countries helping the NEM community to collaborate with SEA researchers.

Multimedia content management is one of the key sector for the next decade, emerging countries have special needs that we can try to elaborate with SEA partners, it is a good opportunity for Europeans to understand these needs which could then be used by European industry all over the world. Another key aspect is standardisation, altogether with SEA partners we will be powerful at ITU-T to push news standards that we should identify as key.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

The Internet today has several weaknesses regarding the future NEM application requirements mainly in the field of security, privacy, routing efficiency. NEM is really active in the Future Internet design, specific requirements from South East Asia researchers could be a way to collaborate. NEM has identified end of 2009 30 research topics and has put a priority on the 6 following ones:

- User satisfaction and quality of experience
- Home and extended home networks
- Network architecture
- Intelligent delivery
- Representation of content
- Tools for content creation and manipulation

The first step should be to revisit that list with SEA partner vision in order to identify these common interests. These topics have been contributed to the European Commission, they should be part of the next work programme, potential common projects could be setup between European NEM members and SEA partners.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

From the Global NEM activity perspective, we would like to share the list of research topics as well as their priority. If one or several topics are key for both regions, it could be easier to set up projects in those fields. Another aspect is the Grand Societal Challenges that every country has to take into account (climate changes, economy crisis, food, water, health, ...), it could be useful to establish a common vision of a set of actions ICT based which can help in these fields. A first discussion sharing a common vision where ICT could help in those fields: Smart Energy, Smart City, Smart Transport, Smart Health, Smart Content.



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

- Research area of mutual benefit and strengths
- Relatively low cost research area
- Provides benefits for other research areas (Health, Food, etc)
- Direct benefits for the economy, esp. for developing countries
- Good basis of existing infrastructure cooperation (TEIN III) to be used
- Research area without standardisation problems

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

- ICT for development

- Remote sensing applications
- Distance learning
- ICT to optimize logistics and mass transportation
- E-government, E-Health (esp. to provide services to remote areas – f.e. islands of Indonesia)
- Climate Change (Adaptation, Mitigation, Resilience)

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

- Develop applications for TEIN III (like web-based communication platform for scientists, policy makers and science administrators)
- Creating synergies between FP7 funded research projects and capacity development projects (Infrastructure, Human resources)
- Development of distance learning courses
- Continuous and increased support through coordination efforts (like SEACOOOP/SEALING)
- Uptake of SEA research strengths and interests in FP7 calls



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Southeast Asia is one of the world's main manufacturing hubs. Over the years more advanced SE Asian economies such as Malaysia, Singapore and Thailand have focussed on moving up the value chain and developing indigenous RTD (Research and Technology Development). These provide numerous opportunities for the EU and SE Asian to cooperate in ICT research. SE Asian countries have strengthened their regional cooperation through ASEAN, which in turn will result in better unified mechanisms and priorities for ICT research cooperation between the EU and SE Asia.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

- ICT for sustainable production
- ICT for environmental management
- ICT for energy management
- ICT for air and noise pollution control
- ICT for coastal and inland water management
- ICT for health care

These are priority areas in both regions where ICT application has substantial scope to support decision making for both short and long term remedial action.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

- Improve participation opportunities for developing and least developing countries. These can include:
- Developing specific thematic priorities for developing and least developing countries
  - Research on reducing cost of RTD and RTD localization.

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Southeast Asia can profit much from research collaboration with Europe. This is particularly true for Malaysia, Thailand, Philippines, Cambodia, Laos and Myanmar. Singapore has a well developed research infrastructure and does not depend on stimulus from Europe.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

ICT, Healthcare, Transport, Culture, e-Learning, Robotics, Tourism and Ageing. Precision Agriculture would be important. But one basic problem is that many researchers in these countries are not well educated in research methodology and do not understand what it takes to publish journal articles.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

As mentioned not just funds for research, but education in research methodology is essential. I receive many articles for review from editors of journals of Applied Ergonomics, Ergonomics and ICT journals (these are my specialties). Most of the articles are rejected because of poor research methodology. This is the basic problem. Funding to support teaching of research methods is essential. The problem starts at the universities in these countries, where faculty members are often not well educated. The European training institute (in Brussels) can perhaps address some of these problems.

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

In general, the main reason is to develop links and widen communication channels to gain strategic advantage in globalization. ICT research is just one among many other means to achieve that.

Specifically for ICT, research culture and strengths in Europe and Southeast Asia are different. Europe is more fundamental and Southeast Asia more pragmatic, application-oriented. Europe and Southeast Asia can learn from and complement each other.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

Some research and analysis is required to identify such areas. Ideally, collaboration should facilitate that methods developed in Europe would be applied, validated and improved in Asia, benefiting from exposure to different cultural and technical environment. And vice versa, for methods developed in Asia, Europe could play similarly beneficial role.

Not many researchers may work on some ICT area in Asia, but many may work in Europe (and vice versa). This would be another factor to identify areas for useful collaboration.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

Most important: formalization of Asian researchers as possible partners in EC projects. For that, I think Asian countries could provide funds to support Asian partners while EC would support European partners.

A similar scheme existed once for Singapore-Ontario collaboration: Singapore side was supported by NSTB, while Ontario researchers were supported by Ontario government (at the same level, around S\$200,000). A similar scheme was recently announced to support Singapore-France collaboration.



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Following are ten reasons (in no ranked order) why cooperation on ICT Research between Europe and South East Asia should be strengthened:

-SEA countries are investing in significant stimulus programmes following the economic downturn, the timing being an excellent opportunity for the EU to engage and add value to SEA with joint research programmes.

-Wealth is flowing increasingly from West to East and cooperation between Europe and SEA has the potential to benefit both regions; also for Europe to capitalise on SEA's increasingly ever deeper links with China, Japan and Korea.

-New ICTs for rural development contribute not only to a combination of nation and capacity building, increasing socio-economic inclusion, but also provide opportunities for research cooperation between SEA and Europe to address common challenges.

-New ICTs are imperative to handle the impact of climate change, including disaster management and recovery, given SEA's vulnerability to natural disasters, and the need for global response strategies. Smart Energy Management in homes, factories, commercial premises contributes to carbon reduction and economic savings.

-New ICTs for education and lifelong learning can help strengthen skills and productivity in the workplace, also the need for better collaboration tools/technology should facilitate deeper and more extensive research cooperation between Europe and SEA.

-New ICTs for boosting productivity of companies in SEA should help lead to increased 2-way trade and investment flows between Europe and SEA.

- New ICTs for the digitisation of culture heritage can make SEA's rich culture more easily accessible not only in the Region but also to the world.
- New ICTs for systems biology - pharma research - should help capitalise on SEA's very rich biodiversity and facilitate research into and discovery of new medicines, e.g. to manage illness, the ageing society.
- New ICTs for eGovernment should help the public sector in SEA to be more efficient and effective, as well as more transparent; also enabling financial waste to be reduced and enabling reallocation of resources to other parts of the economy, thereby contributing to socio-economic development overall.
- Country specific examples: Singapore and Thailand's investment in the Creative Industries and requirement for skills from Europe; Singapore represents an ideal laboratory for trialling ideas and research in a mixed East and West setting; Indonesia has the potential to provide lessons for Europe on the deployment of ICTs in large scale given the size of its population.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

ICTs for:

- Rural Development
- Education (e-Learning)
- Digitisation of Culture Heritage
- Systems Biology
- Smart Energy Management
- eGovernment

This is as outlined in Q1 with brief explanation.

To highlight some other ICT research areas, some of which are underpinning:

-ICTs for Business: e.g. Advanced Manufacturing, Supply Chain Logistics, 'Internet of Things' (RFID).  
Reason: Boosts productivity and competitiveness; facilitates trade.

-Future Internet, e.g. 3D Internet with new forms of simulation, visualisation and interactivity, e-Commerce.

Reason: 3D applications including social networks, games, serious games, virtual worlds are the next phase of the Internet's revolution and likely to have the same impact as the first web explosion. These converging, more immersive technologies are changing the way we live, work, play and learn because of their powerful capacity to engage people in new ways. There is great potential for innovation and applications. For example, the implications for new approaches to collaborative learning and working, e.g. in education, business, health, culture, e-Government and enhanced visualisation of the 'Internet of Things'. Society and the economy as a whole have great potential to benefit from these applications beyond purely leisure. This will require policy makers, the research community and industry to embrace the wide range of challenges and opportunities in this highly cross disciplinary / cross-sectoral area.

-Telecoms

This refers to research into a more bandwidth and megabyte-rich economy to deliver more services to homes, businesses and to people on the move.

Reason: To increase the coverage/reach and capacity of broadband and mobile networks to drive socio-economic growth in an increasingly globalised economy, together with innovation in services. There is a correlation between more bandwidth/megabytes and higher GDP.

- Developing Successful Clusters (specific sectors and/or by geographical region)

This refers to research on nurturing successful clusters and cross-sectoral/cross-disciplinary collaboration in combination with key stakeholders across Government, Business, Universities and the Finance Community. This includes approaches to knowledge transfer and building/nurturing successful software parks and virtual communities, e.g. with a focus on multimedia. An example could be the Mekong River Delta. Europe has excellent role models for world class clusters, thus enabling sharing of useful experiences and learnings with SEA.

Reason: This will strengthen the capability to SEA to engage with Europe and in turn facilitate FDI from Europe.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

- Better partner finding, both through face to face meetings and electronically.
- More awareness raising of cooperation opportunities through more advocacy / championing.
- Showcasing successful case studies of projects completed.
- Making it easier for SMEs to participate.
- Providing support for consortia to write strong, winning proposals.
- Enhancing the capability of consortium members to protect and exploit IP.
- Innovation Management and Successful Teamworking in Collaborative R&D, this being about the dynamics of successful teams working across sectoral, disciplinary and geographical boundaries in collaborative R&D environments. In such environments of accelerating, converging ICT technologies, the added value is facilitating the cross pollination across research areas and ICT sectors to drive socio- economic development and increasing cooperation between SEA and Europe.

Main outcomes of the above deliverables could include:

- shaping policy, research, sector and individual company strategy;
- increasing capability for engagement and working across multiple sectors, disciplines, and between Europe and Asia;
- new approaches to innovation, research and commercial operations;
- accessing and growing international markets and partnerships, including in new sectors, between Europe and Asia.

The target audience in SEA and Europe could include:

- policy makers and government technology agencies
- research community
- trade associations
- cluster/software park managers
- individual companies



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

South East Asia is despite the current ongoing World economic crisis among the fastest growing regions in the world especially in industry, service, tourism, telecommunication and export. However, most of the Small and Medium Enterprises of the region do not yet apply any ICT in their business. Therefore can be strong market potentials for European ICT solutions are seen in the Southeast Asian Region.

Furthermore do have South East Asian Countries strong natural research capabilities which can be developed and be used in European interests. To display the Regional potentials it is also important to review the implications of the ASEAN organization: Free trade area, Connected infrastructure and telecommunication within the region, Simplified business regulations. The ASEAN region consists of the strong purchasing power populations of more than 500 million people.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

Virtually, Europe should try to make most use of the present potentials in the Region. Therefore all Research topic presented under the ICT research strategy of the European Union are relevant. While funding research in the target countries, project design should reflect European interests. Therefore project should make use of cheaper labour in the target countries. Should try to implement European standards in the target countries and should focus on the dissemination and localization of available European ICT solutions.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

Participation of Southeast Asian partner should be always encouraged in any type of FP7 funded project. As research is can only be world leading if the World is participating in the research. Europe would fail in representing the world leading knowledge society if we do not use available capacities from Southeast Asian countries.

When defining strategies creating support project to implement those strategies toward Southeast Asian countries the focus should be on:

- general promotion of ICT FP7 funding opportunities
- opening up the Southeast Asian ICT markets for developed European ICT solutions (Exploitation)
- implementing European Standards in South east Asia ( as this eases the market access for European ICT solutions.



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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Transnational and international cooperation is key for strengthening R&D skills and improve global competencies.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

ICT domains in broadband technologies, SDR and RF spectrum sharing technologies, video analysis, context awareness....

*Question 3 :What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

Launch new collaborative projects!

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Europe and South East Asia, have developed together over many hundreds of years. More recently the link has become more cooperative, based on mutually beneficial trade and partnership. Although many of the countries involved are at different stages in their development paths this should be seen as beneficial for mutual cooperation as it will enable a better economic fit for the various synergistic elements between all the countries and offer a much larger potential.

ICT has become an important part of European economy, and this is also true for a number of South East Asia countries as well. Many synergistic opportunities exist between the two regions but the lack of awareness and links limits their exploitation and potential. By increasing awareness, developing networks and publicizing projects we will be better able to build on the potential between and within Europe and South East Asia.

*Question 2 : which areas, which research topics should in your mind be considered as priorities for the future and why?*

We should look to cover a number of areas as potential research topics. I would stress the importance of topics that either act as enablers or develop potential for cooperation both between Europe and South East Asia, but also between the more developed areas of South East Asia and the less developed areas. We should be looking to build an ICT base within the region from which future developments can take place and foster cooperative links that can be built upon.

Currently there are a number of counties within South East Asia that are lacking both infrastructure and educational capacity that could benefit from low cost structural development. In particular the development of the human resource (HR) capacity will be particularly important and improving this area would be key to future growth and cooperation.

The development of the HR capacity could be achieved by a number of methods, from developing ICT training to knowledge sharing, from joint research projects to exchanging expertise. What is important is that each project should address a different area in the spectrum, from R and D to basic ICT training and upskilling, with the emphasis on cooperation and be mutually beneficial.

We should also be looking for projects that address, at least to some extent both sustainability criteria and those that have societal effects.

In terms of sustainability, we may consider ICT projects that allow for better use of knowledge, management systems and information systems to avoid waste, and in particular those that allow systems and data to be shared between and within the regions so that experience can be shared. The use of web portals will be vital for these sorts of projects.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

To help with the emergence of cooperative ICT projects we should consider an ongoing process of training and support for our colleagues. In particular the development of Project Management skills will be an important issue, and it would be useful if every one who required this training could be provided with it, perhaps via a virtual learning environment.

Support could also be provided in the short term via workshops. The other aspect would be continued access to expert help and guidance rather than short term 'one of ' support, which could take place via a web based knowledge portal.

In order to continue with the process of cooperation there will need to be an on going process of dissemination that could be achieved in a number of ways such as a portal, an annual conference/workshop and on line networking events.



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*Question 1: Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

- to combine competences and learn from each other
- to reach the critical mass
- to avoid conflicting developments as far as possible
- to increase the distribution "space" and coverage

*Question 2: Which areas, which research topics should in your mind be considered as priorities for the future and why?*

- Converged internet (Internet of Content, Internet of Services, Internet of Things)
- Software services as enabling technologies for convergence
- Trust and security
- Standardisation of IT infrastructure

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

Developing and growing markets in ICT in Southeast Asia. A continuous dialogue should take place.

It is important to understand the regional aspects of collaboration with Southeast Asia countries, to identify what are the common interests for collaboration. I believe that we need to develop regional Southeast Asia-EU projects instead of supporting one country in particular. We need therefore to coordinate possible proposals with those countries (focus on regional projects).

As an academic partner, there is an interest to develop education programmes and exchanges of students (PhD for example). Students in those countries are very motivated to study abroad and we are lacking PhD candidates in France.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

I think that the ICT FP7 work programme gives enough space for collaboration. I think that challenge 1 might offer a relevant frame, especially challenge 1.1, 1.2 and 1.4. (networks, telecommunication, software and services, security).

Social challenges are of course of interest and global issues as environment, health, ageing society are also relevant projects with clear outcomes to be implemented in those countries.

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

Continue the dialogue between Europe and Southeast Asia countries so as to nurture the FP7 or other bilateral programmes with key scientific areas to be funded (common interest for both regions). There must be funding allocated specifically to those countries. Otherwise it remains challenging to get a partner from those countries in European projects and evaluators are not always convinced by this kind of partnership (why one partner in Asia, you always have to explain why). If we have funding for specific calls and topics, we can manage added-value projects, and we focus on projects that make sense.

I am not really convinced that networking sessions help to set-up projects (brokerage sessions). I think it is better to focus on few projects and make sure those projects go through the evaluation.

If projects include industrial partners and SMEs, provide guidance for multicultural management and IPR management for a win-win partnership.

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

South East Asia is of growing economic importance and includes many countries with rich and diverse cultural and linguistic heritages. On the one hand if European ICT is to be of global significance it must engage with South East Asian issues, like Thai character sets, or the range of Malaysian languages. On the other hand ASEAN countries must engage with mature European needs and markets if they are to move to high value information services-based economic activity.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

- Human Language Processing, including machine translation, computer based support for human translation and text annotation
- Text mining and Machine learning
- Information retrieval and access
- Digital libraries and support for cultural heritage preservation of availability
- E-learning and the facilitation of mutual cultural understanding

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

- Financial support networking events,
  - Sponsorship and support for scientific conferences in areas of interest including travel support for senior staff and students to conferences on the other continent.
  - Support for Webinars and other forms of electronic communication on topics of interest
- Presence and support for attendance at trade fairs and other industry orientated events.

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*Question 1 : Why in your opinion should cooperation on ICT research between Europe and Southeast Asia be strengthened?*

In a global economy in which the balance of power is shifting towards Asia, and in an Information Age where ICT is having a profound impact on all aspects of society, it is important for the 2 regions to collaborate to share knowledge and best practices through ICT research.

*Question 2 : Which areas, which research topics should in your mind be considered as priorities for the future and why?*

In my field of expertise, the following topics are considered important :

Digital natives and the impact of IT on next generations :

- ICT, climate change and sustainable development
- ICT and global health
- ICT and next generation e-commerce
- Immersive technologies for remote collaboration

*Question 3 : What do you think could be usefully done to support the emergence of cooperation projects on ICT research, namely under FP7?*

Funding for carefully chosen collaborative projects between the 2 regions