

MAPPING PRIORITIES OF COOPERATION IN ICT RESEARCH BETWEEN EUROPE AND SOUTHEAST ASIA

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EXECUTIVE SUMMARY

The present document has been prepared in the framework of the SEALING project supported by the European Commission (DG Information Society and Media) under its FP7 research funding programme and through which further activities of the SEACOO initiative, launched in 2004 and endorsed by the ASEAN Secretariat in 2008, have been developing over the period 2010-2011.

The overall objective of the SEACOO initiative is to support the development of cooperation in ICT research between Europe and Southeast Asia. The initiative is coordinated by Sigma Orionis (France), involves organisations in charge of ICT policy and research in each of the ten ASEAN countries and, through an Advisory Committee, key European organisations active in cooperation with Southeast Asia.

One of the main SEACOO focus is to identify priorities of cooperation in ICT research between the two regions and to derive recommendations to the European Commission (to be considered in the revision process of the FP7 ICT Work Programme and in the preparation of the Horizon 2020 one) and to the ASEAN Secretariat.

This work has been undertaken following a quite exhaustive methodological approach. The present document details this methodology and the conclusions and recommendations reached by the end of 2011, that are summarized below.

Taking into consideration that cooperation between Europe and ASEAN in ICT research is seen today as strategic by many leading stakeholders from both regions, it is recommended that:

- *Southeast Asia (or ASEAN) can be mentioned as one of the main target regions in the next releases of the ICT Work Programmes,*
- *Specific mentions, SICAs, joint or coordinated Calls can be inserted into next releases of the ICT Work Programme for the following challenges and objectives, identified as priority ones:*
 - *Pervasive and trusted network and service infrastructures:*
 - *Internet-connected objects (ICT Objective 1.3): IoT, applications in smart cities.*
 - *Networked Media and search systems (ICT Objective 1.5): tools for content creation and manipulation - Security, privacy and trust - Quality of service.*
 - *Future Internet Research and Experimentation (ICT Objective 1.6): perspective of a FIRE test bed in Southeast Asia interconnected with the overall FIRE facility.*
 - *FIppp (ICT Objective 1.8): ASEAN use cases: eDisaster, eTourism, eLearning.*
 - *ICT for health, ageing well, inclusion and governance (ICT Challenge 5) and more particularly at the level of the following objectives:*
 - *ICT for ageing and wellbeing (ICT Objective 5.4).*
 - *ICT for smart and personalised inclusion (ICT Objective 5.5).*
 - *ICT for governance and policy modelling (ICT Objective 5.6).*

- *ICT for a low carbon economy (ICT Challenge 6): on all aspects and particularly on ICT for transport.*
- *ICT for learning and access to cultural resources (ICT Challenge 8).*
- *Future and Emerging Technologies - FET (ICT Challenge 9): particularly as far as cooperation with Singapore is concerned.*
- *eInfrastructures: development of flagship use cases.*

Since time appears as critical when considering the cooperation initiatives of other worldwide players regarding ASEAN and in order to support the present momentum, it is also recommended (without waiting for future versions of the ICT Work Programme) to:

- *Consider with due attention, in coming ICT Calls, proposals involving Southeast Asian organizations and targeting the above mentioned research areas,*
- *Support the development of the Project and Research Incubator and the Virtual Research Community set up by the SEACOOOP partnership,*
- *Develop a more global European approach of cooperation with Southeast Asia in ICT research (not limited to FP7), in order to reach a higher impact in a region characterized by a large diversity in terms of economic development levels.*

More detailed information on this work can be found on the www.seacoop.eu web site, including a full report of 400 pages.

All questions, remarks and suggestions are welcomed. Please contact info@eurosoutheastasia-ict.org.

ABOUT SEACOOP

SEACOOP is an initiative aiming at strengthening cooperation in ICT research between Europe and the 10 countries that are members of the Association of Southeast Asian Nations (ASEAN). It is supported since 2004 by the European Commission (Directorate General Information Society and Media) through its 6th and 7th Framework Programmes for Research and Technological Development (FP6 and FP7), and has been endorsed by the ASEAN Secretariat in 2008.

- Supported by the European Commission through FP7 and by the ASEAN Secretariat
- Involving a national organisation in charge of ICT policy and research in each ASEAN country and, through an Advisory Committee, representatives of over 20 leading European ICT organizations

Among SEACOOP activities developed in 2010-2011 (covered by the FP7 SEALING project):

- The identification and analysis of ICT policy and research priorities, at bilateral and regional levels, and the provision of recommendations for future cooperation initiatives (an activity summarized in the present document).
- The organization of six thematic cooperation events in Europe and in Southeast Asia, synchronised whenever possible with policy dialogue meetings, and aiming to fine tune the mapping of cooperation priorities and to connect research organizations from both regions.
- The development of synergies with dialogues and activities launched under EU-funded programmes (such as EU-SEA-NET and TEIN3), at the initiative of EU Member States and (FP7) Associated States, and at the ASEAN level.
- The promotion and support to the establishment of FP7 ICT NCPs (National Contact Points) in Southeast Asia, which is a condition for a stronger and more sustainable development of cooperation in ICT research under FP7.
- The creation of a Project and Research Incubator in Singapore, offering European and Southeast Asian organizations a place where they can meet, network, and work together, thus a place facilitating the emergence and development of ICT research projects between the two regions.
- The participation of the SEACOOP partnership to major external events (including the European Commission's ICT event of Sept. 2010) and the development of a web site offering research organizations from both regions substantial background information and connection tools, including a LinkedIn-based "Virtual Research Community" of 250 members.
- The operations of a helpdesk run by the whole SEACOOP partnership, providing information and guidance to European and Southeast Asian organizations determined to propose cooperation projects under FP7.

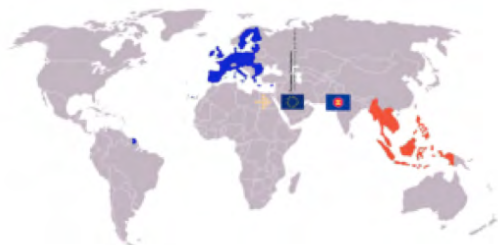
- Identification of cooperation priorities
- Organization of thematic cooperation events
- Establishment of FP7 ICT NCPs in Southeast Asia
- Creation of a Project and Research Incubator in Singapore
- Development of a Virtual Research Community
- Provision of helpdesk services

SEACOOP is coordinated by Sigma Orionis. The partnership includes, in each of the ten ASEAN countries, national organisations in charge of ICT policy and research: ASTI (Philippines), BPPT (Indonesia), A*STAR/I²R, (Singapore), MDEC (Malaysia), NAST (Lao PDR), NCSTP (Vietnam), NSTDA/NECTEC (Thailand), NiDA (Cambodia), UBD (Brunei Darussalam), and UCSY (Myanmar). On the European side, the project involves, through an Advisory Committee, representatives of over 20 leading constituencies, companies, research institutes and universities specializing in the ICT area and active in cooperation with Southeast Asia.

WHY COOPERATION WITH SOUTHEAST ASIA IN ICT RESEARCH IS STRATEGIC

The main commonly listed drivers of international cooperation in research are:

- The opportunity offered to increase national competitiveness (particularly because cooperation in research is a well-known *access key to foreign markets*), to support the building of positive *diplomatic relationships* and to give full consistency to development aid programmes,
- The need to suitably tackle *increasingly global challenges*, to possibly agree on global standards and regulatory issues, and to *partner with the best* (wherever they are located) to truly develop leading-edge research,
- The *globalization of R&D*, pushed by market globalization, becoming more visible particularly in industrial research (and also in the worldwide mobility of researchers),
- The opportunity to *attract research talent* in regions (such as Europe) facing shortage of researchers at a period of unfavourable demographic developments and of decreasing share of graduates in science and engineering.



- An increasingly integrated trade area of 600 million people
- Strong economic development
- Looking for strategically balancing its exchanges (beyond China and India)
- 35 years of formal and fruitful relations with Europe
- EU is ASEAN's 2nd largest trading partner after China

In this context, the strengthening of S&T cooperation links between Europe and Southeast Asia in ICT - which has by nature a clear international dimension - appears as particularly strategic and of mutual interest for the following reasons.

Southeast Asia is a region:

- That has been moving these last decades towards an *integrated trade area*, in the framework of ASEAN, the Association of Southeast Asian Nations (<http://www.aseansec.org>),
- Consisting in 10 countries with a total population of *600 million people* (compared to around 500 million in the European Union): Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar (Burma), Philippines, Singapore, Thailand, and Vietnam,
- Experiencing *strong economic development* (4 to 8% GDP growth for many Southeast Asian countries in the past years), and set to become one of the most dynamic growth areas in the global economy,
- *Looking for strategically balancing its exchanges* beyond its two giant neighbours (India and China) by stronger relations with other major global players such as the EU,
- Having celebrated in 2007, on the occasion of their first-ever EU-ASEAN Summit held in Singapore, *30 years of formal and fruitful relations* with Europe.

EU is ASEAN's 2nd largest trading partner after China accounting for around 11.2 % of ASEAN trade. The EU is, for ASEAN, the first export region (€ 69 billion in 2009) and the 3rd import region after China and Japan (€ 50,2 billion in 2009). *EU is by far the largest investor in ASEAN countries*: on average, EU companies have invested € 10.4 billion a year over the period 2006-2008.

HOW COOPERATION PRIORITIES HAVE BEEN IDENTIFIED

INTRODUCTION

In certain cases, the identification of cooperation priorities between two stakeholders can be quite easy:

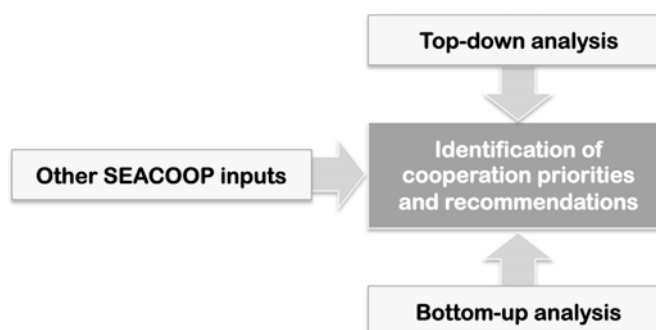
- When two companies or research organisations from different regions of the world, on the basis of their respective skills, strategies, resources, etc., want to implement a programme of S&T cooperation, they may need only limited time to identify such priorities, to agree on precise expected outputs, on a detailed implementation plan, on the amount and share of required resources, etc.
- A limited time may even be needed when two countries from different regions of the world, on the basis of their respective research priorities and programmes at their national levels, want to agree (typically through dialogues between their national agencies) on a set of actions of mutual interest, consisting in the exchange of researchers, in the cross-participation in national programmes, in coordinated calls, in joint flagship projects, etc.

The exercise is more difficult when it aims at identifying cooperation priorities on which the European Commission and the ASEAN Secretariat would agree (which is the focus of the present document). The main reason is that, in order to be in a position to identify cooperation priorities between two stakeholders, the priorities of each stakeholder should be identified first.

On the European side, it is quite easy since the FP7 ICT Work Programme can be seen as a very precise identification of priorities in ICT research at the EU level. On the ASEAN side, it is less easy since there are no similar programmes at the Southeast Asian level yet, this situation being mainly due to the fact that the regional integration process has started much earlier in Europe than in Southeast Asia.

In this context, and in order to identify cooperation priorities in ICT research between Europe and Southeast Asia, and to derive from them recommendations to the European Commission and the ASEAN Secretariat, the SEACOOP partnership has developed a comprehensive set of activities over the period 2010-2011.

The methodological approach is based on a combined top-down and bottom-up analysis and on an intense collaborative work performed by the SEACOOP partnership to provide complementary inputs to the exercise. The work done is synthetized in the next paragraphs (detailed outputs are available on the www.seacoop.eu web site).



TOP-DOWN ANALYSIS

It is of course important, in an exercise aiming at identifying cooperation priorities between two regions, to take into consideration the outputs of:

- The activities developed by the authorities of each region (the European Commission and the ASEAN Secretariat),
- Their joint activities (EC-ASEAN dialogues).

- The European Commission
- The ASEAN Secretariat
- EC-ASEAN dialogues

THE EUROPEAN COMMISSION

The FP7 ICT Work Programme is obviously a key reference document to be considered in a priority mapping exercise since it precisely identifies current EU priorities in ICT research and does reflect overall EU priorities, such as the ones detailed in the “Europe 2020 strategy” and its related “Digital agenda for Europe” flagship initiative. All thematic Units of DG Information Society and Media (DG Infso) have also to be considered in the exercise, since they can directly influence the evolution of the Work Programme.

The revision process of the FP7 ICT Work Programme (leading in particular to the release of the “ICT Work Programme for 2011-2012” on the occasion of the European Commission’s ICT event of September 2010) has been carefully tracked by the SEACOO partnership during the period. The fact that Southeast Asia was not explicitly mentioned in the draft document under preparation has led the partnership to send a letter to Commissioner Ms Neelie Kroes who kindly answered it.

This initiative has led to improve the visibility of Southeast Asia within DG Infso, one direct consequence of this action being the fact that several DG Infso Units have invited the SEACOO partnership to private meetings during the ICT event, which allowed more precisely evaluating cooperation opportunities concerning some FP7 thematic objectives. It is in particular on the basis of the interest expressed by DG Infso Units during these meetings and of the envisioned cooperation potential that the themes of two SEACOO cooperation events organized in 2011 have been set: eInclusion and Internet of Things.

THE ASEAN SECRETARIAT

Even if Southeast Asia has not yet reached an integration level comparable to the one of the EU, an increasing number of S&T / ICT objectives, policies, programmes, projects and initiatives are agreed on at the regional level, which has of course to be duly considered in the present exercise.

The progress of the ASEAN Plan of Action on S&T (APAST), addressed at the 13th ASEAN Ministerial meeting on S&T has been evaluated, together with joint statements released after the ASEAN Telecommunications and Information Technology Ministers (TELMIM) meetings. The preparation of the ASEAN ICT Master Plan 2015 released in December 2010, the related “Kraji declaration” and the work developed in the ASEAN COST Sub-Committee on Micro-electronic and Information Technologies (SCMIT), have been thoroughly analysed, thanks in particular to the information and insights provided during SEACOO meetings by Southeast Asian SEACOO partners involved in these activities.

At a general level, the active participation of the ASEAN Secretariat in the SEACOO Advisory Committee and in all SEACOO meetings has been essential to ensure that the mapping exercise fully took into account its inputs, priorities and vision.

EC-ASEAN DIALOGUES

These dialogues have been developing at the level of EU-ASEAN Information Society dialogue meetings, of EC-ASEAN COST annual meetings and also at the one of ASEM (Asia-Europe meetings).

The conclusions of the 2nd ASEAN COST-EC Consultation meeting on Science and Technology held in May 2009, in Bali have been analysed. Similarly, the joint statement of the ASEM workshop of December 2009 (Kuala Lumpur) and the summary of the ASEM meeting held in July 2010 (Bandung) have been analysed. The conclusions of the EU-ASEAN Ministerial meeting held in Madrid in May 2010 have also been taken into consideration.

BOTTOM-UP ANALYSIS

In parallel to the top-down analysis, it is important to analyse bottom-up information, generated by organizations from both regions interested in, or already involved in cooperation initiatives or projects.

- **SEACOO Advisory Committee**
- **SEACOO cooperation events**
- **Interaction with stakeholders from both regions**

SEACOO ADVISORY COMMITTEE

The Advisory Committee that SEACOO has formed is constituted by organisations having a substantial experience of cooperation in ICT research between Europe and Southeast Asia, being thus in a good position to suggest cooperation priorities.

Five meetings of the SEACOO Advisory Committee have been organised in 2010-2011 to discuss the successive versions of the present document. Beyond their participation in these meetings (and in SEACOO cooperation events - see below), the members of the Advisory Committee have provided a series of inputs underlining the precise priorities that each member envisioned.

SEACOO COOPERATION EVENTS

The SEACOO cooperation events, beyond the fact they aim at more precisely identifying cooperation opportunities on a given theme, have also provided the occasion to develop synergies with other programmes or initiatives, and to liaise with DG Info Units and key constituencies (such as European Technology Platforms).

Six SEACOO cooperation events have been organised over the period 2010-2011, under the aegis of the European Commission and of the ASEAN Secretariat:

- In April 2010 in Singapore on the theme “ICT for tomorrow’s cities” (networks for smart cities, eHealth, eGovernment, ICT for transport),

- In June 2010 in Manila on the theme “Networked Electronic Media”,
- In September 2010 in Brussels on the theme (development and use of) “eInfrastructures”,
- In April 2011 in Ho Chi Minh City on the theme “Internet of Things”,
- In April 2011 in Phnom Penh on the theme “ICT for inclusion”,
- In October 2011 in Yangon on the theme “ICT research and ICT for development”.

These events have allowed developing useful links and synergies with DG Info thematic Units, European constituencies (e.g. Eurocities, the NEM ETP) and other programmes and initiatives (e.g. EU-SEA-NET, TEIN3, SECAS, CASAGRAS2). They have also allowed connecting research organizations from both regions, better identifying research topics of common interest and validating that the chosen themes could be considered as priority ones when addressing cooperation in ICT research between the two regions.

In most cases, a lot of interactions and substantial collaborative work, supported by the SEACOOOP initiative, has developed between European and Southeast Asian researchers having participated in the events. For instance, following the event organized in June 2010 in Manila with the support of the NEM ETP, an intense collaborative work has started to develop between the NEM ETP and the SEACOOOP partnership to build on event outputs and more precisely identify a limited set of Southeast Asian “regional use cases” which could be promoted as flagship projects under FP7.

INTERACTION WITH STAKEHOLDERS FROM BOTH REGIONS

Since the first months of 2010, the SEACOOOP partnership has been extending its LinkedIn group devoted to cooperation on ICT research between Europe and Southeast Asia, and has invited in 2011 its 250 members to move towards a “Virtual Research Community” of higher benefit to each member and providing the SEACOOOP partnership with more insights on the cooperation priorities envisioned by group members.

The SEACOOOP partnership had also opportunities to interact with stakeholders from both regions through the SEACOOOP www.seacoop.eu web site, in particular thanks to the open consultation launched after the first public release of the present document and to the online helpdesk services proposed by the partnership.

The organization of awareness workshops by the SEACOOOP partnership (e.g. in Manila in June 2010) and the active contribution to external events and publications have provided other valuable occasions to interact with organizations from both regions. Among external events, the strong involvement of the SEACOOOP partnership in the 2010 ICT event of the European Commission has to be underlined: SEACOOOP co-organized one of the “networking sessions” and was in charge of an exhibition booth devoted to EU-ASEAN cooperation.

Last but not least: during the year 2011, after a period of information and training developed in liaison with the EU-SEA-NET project, a total of 7 SEACOOOP partners have already been appointed as FP7 ICT National Contact Points which puts them in an even better position to interact with their local research organizations and better identify cooperation priorities based on their inputs.

SEACOO SPECIFIC INPUTS

In order to complement the information derived from the top-down and bottom-up analyses, the SEACOO partnership has developed an intense collaborative work over the period 2010-2011 to generate more information to feed the mapping exercise (detailed reports on each mentioned activity are available on the www.seacoop.eu web site).

- SEA ICT policies and research priorities
- SEA excellence research centers in ICT
- SEA mapping of FP7 priorities
- Statistics and success stories
- Bilateral and multilateral programmes
- EU-SEA cooperation: SWOT analysis
- Project and Research Incubator

SEA ICT POLICIES AND RESEARCH PRIORITIES

The SEACOO Southeast Asian partners have analysed and presented in a synthetic and coherent way the ICT policies, programmes and research priorities in each of the 10 ASEAN countries. The document allows better apprehending the national specificities and drivers, which have logically to be taken into consideration when mapping cooperation priorities between the two regions (even if the exercise is by nature regional).

SEA EXCELLENCE RESEARCH CENTERS IN ICT

Identifying Southeast Asian excellence research centers in ICT is important because it is a way to identify the priorities of Southeast Asia in ICT research (the existence of many excellence centers specializing in a given research topic may justify that it is considered as a priority) and because, as a side effect, it may be easier for European research organisations to find potential partners in Southeast Asia.

The SEACOO Southeast Asian partners have therefore listed (and made available on the SEACOO website) up to 10 excellence research centers in ICT in their countries, and indicated, for each of them, the research topics they are specializing in (using the FP7 ICT WP structure as a reference one).

SEA MAPPING OF FP7 PRIORITIES

Another interesting exercise that the SEACOO Southeast Asian partners have performed, when considering the core role of the FP7 ICT Work Programme in the overall exercise, is the direct mapping of their national priorities (assessed from a Southeast Asian national viewpoint) with the priorities of the FP7 ICT Work Programme.

STATISTICS AND SUCCESS STORIES

The analysis of statistics regarding past or ongoing FP7 projects involving Southeast Asian organizations and of possible success stories related to such projects is interesting, since it may reveal thematic trends concerning the development of cooperation between the two regions.

A detailed analysis of the European Commission's statistics related to cooperation with Southeast Asia in ICT research and in research infrastructures (under FP5, FP6, FP7) has therefore been performed in early 2010 by the SEACOO partnership and six success stories have been identified and documented.

BILATERAL AND MULTILATERAL PROGRAMMES

The SEACOO Southeast Asian partners have listed the ongoing bilateral and multilateral programmes or initiatives developed between their countries and European member States. They constitute an interesting reference framework on which projects at a regional level and EU-wide cooperation can potentially build.

EU-SEA COOPERATION: SWOT ANALYSIS

On the occasion of a meeting held in Manila in June 2010, the SEACOO partners have performed a brainstorming exercise to synthesise, through a SWOT analysis, their vision of cooperation between the two regions in ICT research, which allowed more thoroughly embedding, in the overall mapping exercise, the expertise and experience of each SEACOO partner.

PROJECT AND RESEARCH INCUBATOR

A Project and Research Incubator has been set up by the SEACOO partnership, at the end of 2010, in the premises of I²R, the Singaporean SEACOO partner.

The vision was to offer European and Southeast Asian organisations a virtual and physical place where they can meet, network, and work together, thus a place facilitating the emergence and development of ICT research projects between the two regions.

In 2011, the incubator, managed by a researcher based at I²R, has started to contribute to the development of the SEACOO “Virtual Research Community” and of the SEACOO collaborative work, namely the one focusing on the above mentioned “NEM use cases”.



The SEACOO project and research incubator installed in Fusionopolis, the premises of I²R in Singapore

IDENTIFIED PRIORITIES AND RECOMMENDATIONS

The SEACOOP partnership has, over the period 2010-2011, collected, analysed and generated a large amount of information, following the approach introduced in the previous paragraph, in order to be able to present reliable conclusions regarding cooperation priorities in ICT research between Europe and Southeast Asia and related recommendations to the European Commission and the ASEAN Secretariat.

Reaching clear conclusions and recommendations from such an amount of information is not an easy task for various reasons:

- *The information is not always consistent: an analysis may conclude to the necessity to consider a given research topic as a cooperation priority while another one, based on other facts, may consider it as not so promising,*
- *The information has to be prioritized: the analysis of past success stories for instance is less important than the determination of a given DG Infso Unit to develop EU-ASEAN cooperation on a given theme,*

In this context, the SEACOOP partners have prepared, based on their experience in cooperation in ICT research between the two regions and with the support of the SEACOOP Advisory Committee, the below conclusions and recommendations.

The confidence of the SEACOOP partners in these conclusions and recommendations is reinforced by the fact that:

- *The most promising cooperation research topics (identified as such through various performed analyses) have been the focus of SEACOOP cooperation events which has allowed refining them and confirming their relevance,*
- *The present document incorporates the comments received following the public consultation related to its draft version (online consultation through the www.seacoop.eu web site from July to December 2011).*

TIME IS CRITICAL TO CONSIDER ASEAN AS A SPECIFIC TARGET REGION IN FP7 / HORIZON 2020

It is recommended that “Southeast Asia”, i.e. the region made of the 10 ASEAN member countries, *can be specifically mentioned in the future versions of the FP7 and Horizon 2020 ICT Work Programmes*, which is not the case today, or only through the Asian region at large (while China, India, Japan, and South Korea for instance are mentioned).

This recommendation is mainly based on:

- **The vision of all Southeast Asian SEACOOP partners and of the members of the SEACOOP Advisory Committee**
- **The feedback from the organizations from both regions having participated in the six SEACOOP cooperation events**

Southeast Asia is a specific region of significant importance in the global landscape and of an increasing importance in the ICT area, experiencing a lively regional integration process, and with which the EU has a longstanding fruitful dialogue and intense economic exchanges.

Many European ICT organisations consider that the strengthening of cooperation links with Southeast Asia is strategic today. On the Southeast Asian side, there is a true will to cooperate with Europe, and

the fact that SEACOOOP involves all ten ASEAN countries and the ASEAN Secretariat constitute a *propitious environment* to support a strengthened cooperation between the two regions.

Time is probably critical and the European Commission should quickly send a significant signal: other worldwide powers (China of course, but also the USA, to name only these two) are also targeting the establishment of strategic cooperation initiatives with Southeast Asia and seem determined to move fast.

COOPERATION PRIORITIES BETWEEN EUROPE AND SOUTHEAST ASIA

A large number of FP7 ICT challenges and objectives can be considered as relevant; however, the ones listed below have been identified as priority ones.

For each identified priority, it is recommended that the European Commission, in liaison with the ASEAN Secretariat can include *specific mentions and SICAs* in future versions of the ICT WP (related to the last Call of FP7 and future Horizon 2020 Calls), and consider the possibility to launch *joint or coordinated Calls*.

To be implemented through:

- **Specific mentions in the ICT WP**
- **SICAs**
- **Joint or coordinated Calls**

✓ **Pervasive and trusted network and service infrastructures** (ICT Challenge 1) and more particularly at the level of the following objectives.

This research Challenge appears as a major cooperation priority in all analyses performed by SEACOOOP. There are many Southeast Asian excellence research centers specializing in it and the potential for the development of advanced infrastructures in Southeast Asia is high.

- **Internet-connected objects** (ICT Objective 1.3): IoT, applications in smart cities.

Two SEACOOOP cooperation forums have been organized to validate this priority (identified through various analyses): in April 2010 in Singapore on the theme “ICT for tomorrow’s cities” and in April 2011 in Ho Chi Minh City on the theme “Internet of things” (IoT). The outputs of these events have been quite positive and many organizations from both regions are ready to develop cooperation projects.

- **Networked Media and search systems** (ICT Objective 1.5): tools for content creation and manipulation - Security, privacy and trust - Quality of service.

A SEACOOOP cooperation forum has been organized in June 2010 in Manila on the theme “Networked Electronic Media” to validate this priority (identified through various analyses). The event has been particularly successful and followed by close interaction between the SEACOOOP Southeast Asian partners and the NEM ETP to fine tune the mentioned research areas.

- **Future Internet Research and Experimentation** (ICT Objective 1.6): perspective of a FIRE test bed in Southeast Asia interconnected with the overall FIRE facility.

The SEACOO Southeast Asian partners are ready to consider the development of a FIRE test bed in Southeast Asia fitting into the FIRE vision to interconnect the EU facility with a growing number of test beds located in other regions of the world.

- **FIppp** (ICT Objective 1.8): ASEAN use cases: eDisaster, eTourism, eLearning.

Future Internet is, in Southeast Asia too, a top research priority, appearing as such in all analyses performed by SEACOO. The mentioned precise contribution to the European FIppp programme has been identified in 2010 with the support of the NEM ETP and refined in 2011 through the SEACOO project and research incubator.

- ✓ **ICT for health, ageing well, inclusion and governance** (ICT Challenge 5) and more particularly at the level of the following objectives:

- **ICT for ageing and wellbeing** (ICT Objective 5.4).
- **ICT for smart and personalised inclusion** (ICT Objective 5.5).
- **ICT for governance and policy modelling** (ICT Objective 5.6).

eHealth, eInclusion, eGovernance are considered in Southeast Asia as key topics to support the social and economic development of the region. Research in these areas is high on the priority list of ASEAN countries and of ASEAN as a whole, appearing as such in many analyses performed by SEACOO. Cooperation potential with Europe is important and has been confirmed and fine tuned on the occasion of the SEACOO cooperation forum held in April 2010 in Singapore on the theme "ICT for tomorrow's cities" and in Phnom Penh in April 2011 on the theme "ICT for inclusion".

- ✓ **ICT for a low carbon economy** (ICT Challenge 6): on all aspects and particularly on ICT for transport

Moving towards a low carbon economy is an objective in Southeast Asia too and the potential for innovative solutions is namely high in Southeast Asian least developed countries. The SEACOO cooperation forum held in April 2010 in Singapore on the theme "ICT for tomorrow's cities" has allowed validating this priority (identified as such through various analyses). The outputs of these events have been quite positive and many organizations from both regions are ready to enter cooperation projects.

- ✓ **ICT for learning and access to cultural resources** (ICT Challenge 8).

There is a clear need in Southeast Asia for innovative ICT-based solutions for learning and access to cultural resources. The cooperation potential on these research topics is important. It has however not been possible, during the period 2010-2011, to identify precise research topics of mutual interest (particularly on the occasion of a thematic SEACOO forum involving key European stakeholders).

- ✓ **Future and Emerging Technologies - FET** (ICT Challenge 9).

Cooperation of mutual interest on FET can be exploited with Singapore, where several research centers offer interesting expertise in leading-edge ICT research.

- ✓ **eInfrastructures**, a theme in the portfolio of a DG Info Unit but developed through Capacities Calls.

A SEACOOP cooperation forum has been organized in September 2010 in Brussels on this theme in liaison with TEIN3 to validate this priority. The event has been particularly successful and followed by close interaction between organizations from both regions to envision in particular the development of flagship use cases.

A NEED TO SUPPORT THE PRESENT MOMENTUM

In parallel to the above mentioned priorities, suggesting a revision of the ICT Work Programme and which should bear fruits only in the medium to long term, it is recommended that *proposals targeting these priorities can be considered with due attention in coming Calls*, in order that concrete cooperation projects can develop in the short term, which will support and reinforce the cooperation momentum without waiting for a revised WP to be published.

- **Do not wait for future Calls to welcome cooperation projects targeting identified priorities**
- **Support the development of the Project Research Incubator and of the Virtual Research Community**
- **Consider a more global approach of cooperation with ASEAN in ICT research**

It is also recommended to consider *supporting the development of the Project and Research Incubator* set up by the SEACOOP partnership in Singapore (in I²R premises at Fusionopolis). This incubator, which benefits from a *Virtual Research Community* that SEACOOP has also initiated, should be able to truly support the development of cooperation links between the two regions and is quite a unique initiative in the field of international cooperation that could probably be replicated in other regions of the world.

Last but not least, considering the diversity of Southeast Asia as far as economic development levels are concerned, it is recommended that *a more global (not limited to FP7) European approach of cooperation with Southeast Asia in ICT research* can develop, since in certain cases cooperation opportunities in ICT research with a given country or set of countries will exist but will reveal to be less relevant to FP7 than to EuropeAid instruments for instance, or to Marie Curie and Erasmus Mundus ones.

A document has been prepared to highlight this perspective on the basis of the discussions held during the SEACOOP cooperation forum on “ICT research and ICT for development” organized in Myanmar in October 2011. It has been printed under the form of a brochure and is also available on the www.seacoop.eu web site.