Open Smart Card Infrastructure for Europe

Annex B: Clustering information on Smart Card Projects

SmartCord

IST-2000-30168

Co-ordination mechanisms for eEurope Smart Card Charter implementation

Deliverable D11: Definition of Smart Card Cluster

DATE	5 August 2002
ABSTRACT	This report describes the definition of eEurope Smart Card Charter Clustering, the process of evaluation of existing projects, the results and recommendations for the future.
AUTHOR, COMPANY	Dr. Lutz Martiny, LMC
WORKPACKAGE	WP1
FILING CODE	SMARTCORD-LMC-001-REP-R1
RELEASE:	R1-1
KEYWORDS	Deliverable, Clustering
DISTRIBUTION	EC, partners

TOTAL NUMBER OF PAGES: 17

IMPORTANT NOTE: As a leadership activity the SmartCord partners have agreed, subject to the approval of the Project officer to make this R1-1 deliverable publicly available on the eESC website and to promote its availability along with the eESC proposed future activities in this area to the project managers of all of the projects listed in the EU compendium.

Project funded by the European Community under the "Information Society Technology" Programme (1998-2002)

Table of Contents

1 Summary

The SmartCord project was launched in September 2001 to support, structure and coordinate the activities of the eEurope Smart Card Charter initiative. It provides the necessary infrastructure to coordinate the work in progress and the deliverables from 12 defined projects (Trailblazers): it ensures the drafting, mutual agreement and dissemination of requirements, common guidelines and specifications.

An important element of SmartCord is to establish relations with the IST R&D community which maximize the ability of eEurope Smart Cards to leverage the work and deliverables of existing related IST-funded projects.

The SmartCord Clustering Action (Deliverable 11) therefore identifies two distinct actions:

- definition of possible clustering of smartcard projects i.e. maximise overall value-add from IST funded projects
- establish a liaison with C-ECOM clustering activities i.e. maximise effective links between IST projects and standardization

This report describes the eESC approach to deriving added value from the many IST Smart Card projects. It outlines the steps taken to maximise the immediate and long term benefits from clustering and cooperation in the context of the eESC deliverables and the eEurope goals. The wider challenge is well known: how to address the problem of small RTD projects working in isolation, with inconsistent approaches, or possibly duplicating effort, etc The immediate issue identified by SmartCord partners and endorsed by the eESC Steering committee is to establish links to specific projects with deliverables/lessons of direct use to eESC goals. The auxiliary target was visibility and leadership in establishing and delivering related standardization activities to eESC advantage.

Early liaison was therefore established with C-ECOM as a model for standardization links. With the closure of C-ECOM it is envisaged that a continuous ICT research/standards platform will be established. In the meantime the primary focus will be to progress the eESC deliverables through standardization channels.

In February/April 2002, The Smart Card Charter Steering Committee considered a report and presentation prepared by the eESC Co-Chairs which analyzed and summarized over 60 existing IST projects from the 4th and 5th Framework programmes and advanced industry driven standardization. Five representative presentations were selected one from each of the four application areas eESC is addressing together with a project from an existing standards initiative related to user requirements for multi-application smart cards.

This report also describes the process of project evaluation and selection to become part of the clustering activities. It includes pointers to copies of the presentations of the 5 selected projects and three others introduced at the 4th Open Steering Committee meeting in Madrid 13 June 2002: each of the presentations are available through the Smart Card Charter web site http://www.eeurope-smartcards.org and from the CEN ftp server ftp://ftp.cenorm.be/public/eEurope-scc/OSC4/

The main conclusions and observations drawn from the clustering event in Madrid are noted:

- immediate relationships were established and strengthened e.g. between MediTrav and Netc@rds, between Smartcities, TB8 and eEpoch, between Sirocco and WS/FASTEST.

- new projects are already adopting eESC perspectives and recommendations e.g. Balcard, a recently accepted project incorporates results from eESC activities.

- successful pilots do not automatically lead by themselves to further take-up and large scale deployment. eESC partners have not been able to locate projects amongst the 65 that have been inventoried that really has lead to mass deployment and learn from this experience. There is still a lot of technical and business ground to be covered before all the smartcard problem areas are

addressed and mass deployment in Europe is in place in the four application areas eESC is addressing:

- eGovernment
- Finance
- Public Transport
- eHealth

Finally this deliverable contains the lessons learned from setting up the clustering activity and recommendations for similar future activities in other projects such as work in progress within eESC on how new projects in the FP6 framework could benefit from clustering.

2 Definition and Objectives of a Cluster

Definition

In the IST Programme 2001 (WP 2001, see http://www.cordis.lu/ist/workprogramme.htm) clusters are defined as "close co-operation between projects on common themes in order to achieve tangible results". The publication "Clusters and Networks of Excellence in the IST-Programme" (- update 01/2002, page 6 ff, see: ftp://ftp.cordis.lu/pub/ist/docs/cpt_clusters-01-2002.pdf) distinguishes between pro-active clusters, which are defined before a call is launched and re-active clusters which are defined after projects have been selected for funding.

The above mentioned publication identifies the following characteristics for re-active clusters:

- They are defined after projects have been selected for funding.
- In subsequent calls the evaluation panel may recommend how new projects could benefit from clustering.
- Re-active clusters are also facilitated by the Commission, e.g. by organizing a concertation meeting in which clustering is discussed. Concertation meetings are often the first step towards setting up a cluster. However, it is up to the participants in the projects to define the objectives of the cluster."

According to this definition the SmartCord clustering activity is defined as a re-active one as it is focusing on existing projects already selected for funding

Note: In the early phase of Smart Cord contract negotiation there were some discussions on how Smart Cord could influence the activities of existing IST projects or have influence in the selection for funding of new projects. The eESC has other mechanisms for this purpose and this avenue was not pursued. The SmartCord Clustering activity was agreed as being specifically directed to the impact on the eESC deliverables i.e. Common Specifications and therefore SmartCord is pro-actively probing the deliverables and lessons learned from other projects so that they can be incorporated where relevant into the eESC deliverables.

Objectives of Clusters

According to the official EU publication the key objectives of clusters are "the creation of synergy and visibility and the building of critical mass:

> – *Clusters may create synergy and a multiplier-effect by enriching the capabilities of the group of projects because of complementary know-how and skills and they can therefore help to improve the return on investment. Co-operation is an increasing prerequisite for capturing a global market.*
>
> – *Clusters may also help to achieve critical mass (e.g. in technology, standardization and regulatory issues). Clusters can be a way for projects to create enough visibility and impact to influence European political and regulatory bodies and/or international platforms.*

To reach these objectives clusters may undertake activities like:

- Workshops, working groups;
- Websites and newsletters
- Studies (e.g. technology, market, legal)
- Guidelines, roadmaps
- Training-activities (covering e.g. technical, legal issues)
- Participation in standardization forum
- Participation at exhibitions/fairs"

(*extracts from* "Clusters and Networks of Excellence in the IST-Programme")

According to these objectives SmartCord is

- ***the facilitator of the eEurope Smart Cards initiative which is a cluster in itself with its twelve trailblazer projects, as all these objectives are targeted and actively pursued since the start of the initiative and the SmartCord project,***
- ***the facilitator of an additional cluster between trailblazer related IST- funded projects.***

Furthermore, SmartCord and the Steering Committee of the eEurope Smart Card Charter initiative cluster have defined additional objectives and procedures following the above mentioned description of work and deliverables of SmartCord to maximize synergy effects with non-eEurope Smart Cards IST-funded projects. The decision making process and the results are described in the following sections.

Note: This deliverable only describes the clustering of eEurope Smart Cards with funded projects outside the eEurope Smart Cards initiative as the activities and results of the eESC cluster are reported quarterly to the Commission.

3 Liaison with C-ECOM

eESC and C-ECOM share the same goal of building effective links between IST projects and standardization. From the earliest opportunity, mutual consultation was organized at high-level between eESC and C-ECOM on the role and value of smart card projects to E-commerce. Examples include discussion of the standardization strategy for e-tailoring applications using smart cards to securely store personalized information on body measurements personal and preferences. This level of mutual interaction with the Co-Chairs continued throughout the life of the C-ECOM project.

Two of the six projects selected for presentations at the closing conference held to mark the end of the Cluster for Electronic Commerce C-ECOM dealt explicitly with smart card issues. These were e-tailor “data exchange standards for made-to-measure services in the clothing industry” and Triangle “building a platform for wider dissemination and adoption of an interoperable chip-card solution for door-to-door travel”.

The C-ECOM conference and the Madrid Open Steering Meeting were held at the same time. This made it impossible for the C-ECOM project manager to present as planned at the OSC Clustering session.

4 Identification, Evaluation and Selection Process

After setting up the SmartCord organization in September 2001 a presentation was prepared for the eESC Steering Committee meeting on 30 October, 2001 in Paris to inform the Steering Committee on the Clustering Deliverable of SmartCord, to discuss and decide a proposal how eEurope Smart Cards should approach this deliverable. The proposal was based on the analysis of information of IST – funded projects available at that time on the IST – website and available information of those projects having their own website. In parallel the Commission issued a first draft of their own analysis of those funded projects and this draft was also incorporated in the presentation and the decision process of the Steering Committee. (The final version of this analysis called EC Projects on Smart Cards is available under ftp://ftp.cordis.lu/pub/ist/docs/cpa5compendium-final-april02.pdf).

The Steering Committee agreed to proceed as follows and review the status and results in the Steering Committee meeting in February 2002:

- define and agree SCC clustering methodology
- identify related IST projects (in addition to SCC-SC 1060 see Annex attached)
- review identified projects according to agreed methodology
- propose cluster to eESC-SC, discussion and decision
- invite identified project leaders to present methodology and benefits
- implement process

In the Steering committee meeting of 14 February, 2002 the results of this task were presented and discussed. The projects relevant to eEurope Smart Cards were presented in the following sequence, adopted from the project groupings in the Commission report on Smart Card projects, hence

1. Project directly supporting eEurope Smart Cards
2. Technology
3. RFID Tags
4. Methodologies and tools
5. Building blocks of Smart Card potential
6. Applications

The Steering Committee decided after presentation and discussion that eEurope Smart Cards should help identify and make use of the results of smart card related IST projects and not focus on bringing different projects together. From the projects eligible for clustering it was decided to shortlist only those which fulfilled the following conditions:

- within the scope of the TB technical and application domains central to the Smart Card Charter
- either completed or active for sufficient time to have delivered results
- 1 best in class (plus alternate should presenters from first choice not be available) in each of the four eESC application areas

Note: This eESC steering committee decision on the selection mechanism was derived from the recommendation of the SmartCord partners. The latter was heavily influenced by research undertaken by the eESC Co-Chairs about practical clustering experiences:

- discussions and information exchange between CCC and the CEN secretariat of the cluster on E-commerce.
- LMC participation in the Image Project Clustering event in Tampere, Finland in March 2002.

In Tampere, eEurope Smart Cards was represented among 10 other projects presenting their activities in 5 -10 minutes presentations followed by a one hour discussion between the participants. This experience, i.e. keeping presentations short and maximize time for discussion and Questions and Answers, was adopted by the SmartCord partners. The Steering Committee received in its meeting on April 19, 2002 a proposal in compliance with these conditions i.e. to select a maximum of 5 presentations out of the following projects to be included in the clustering process at the OSC in Madrid:

- DIGISEC
- PACE
- OmniPurse
- Balcard
- @DAN
- TELENET
- Meditrav
- C-Travel
- Smartcities
- Fasme
- IMAGE
- Tr@velsmart
- DUCATO
- Extended URI

Out of these projects, short-listed out of more than 60 related projects, the Steering Committee then decided on 5, one for each of the application domains eESC is covering and one on standards being developed for the cross-application user interface requirements

- Smartcities (eGovernment)
- Ducato (Finance)
- Sirocco (Public Transport)
- Meditrav (eHealth) and
- Extended URI (a CEN/ISSS Workshop addressing the multi-application user-interface)

to be invited to present in the Open Steering Committee meeting in Madrid. In case one or more of the above should not be able to present C-Travel, Telenet and Omnipurse were identified as alternates.

A template was developed and forwarded to the project coordinators in order to have consistent levels of relevant details in the presentations. This template included:

- short description of the project and methodology of work
- deliverables of the project that have or will be of major importance to eESC as well as the rationale for such relevance (criteria: the deliverable should have an impact on the common specifications or potentially be part of the common specifications)
- specific lessons learned that are of relevance for eESC (criteria: must be of interest for a large proportion of the Open Steering Committee participants).

5 Outcome of the Discussions, Madrid 13 June 2002

5.1 Projects contributing to the clustering event

The final agenda of the Open Steering Committee Meeting in Madrid notes the presentation and discussion of the following projects for clustering on the first day of the meeting:

- Smartcities (presented by Carolyn McKewan and Peter Verrept)
- Sirocco (presented by Tony Emery)
- Extended URI (presented by Alan Leibert)
- Meditrav (presented by Antonio Bianco)
- Ducato (presented by Víctor Escudero)

In addition the Open Steering Committee meeting enabled contributions of other R&D and standardization projects from the floor and to explore specific issues in more depth during the discussions. Contributions subsequently complemented by detailed presentations were received from (in alphabetical order) BALCARD, CALYPSO and TELEPAY.

All presentations are publicly available from the eESC website http://www.eeurope-smartcards.org and via ftp://ftp.cenorm.be/public/eEurope-scc/OSC4/.

5.2 Main Issues addressed in Presentations and Q&A

An interesting point in the presentations as well as in the discussions is that there were no discussions concerning the existing technology. This leads to the conclusion that technology is **NOT** seen as the main issue. The existing smart card technology is apparently able to supply technical solutions to clearly defined problems. It was questioned, however whether the technical solutions can also resolve the other issues raised. These main issues arising from the presentations and the following question and answer sessions as well as in the general discussion and wrap-up session can be grouped into four general topics. Each of these general topics is applicable to all 4 application areas and all are of major importance in the work of all TBs and future funded projects.

Business case - Mass deployment

A common issue addressed in the presentations and the discussions was the question of how to define the business case of specific applications. For each presented application the specific pilot **business model** and business value chain between the card holder and the service provided were quite clear. However the general **business case** for single or multi-application smart cards in one or more of the four domains eGovernment, Finance, Health and Transport is not clear.

The main reason so far seems to be that except for prepaid phone cards and mobile telephony via GSM which are profitable businesses, major roll – outs of smart cards leading to a return on investment are still pending in all of the domains. Though millions of cards in Health Care (Germany, France) or Financial Services (Proton, Geldkarte) are in the hands of the users none of the mentioned applications can be described as being successful measured by “return on investment”.

A distinction needs to be made between a qualitative return on investment (faster and better administrative procedures, more easy to understand for the end user) and the pure cost reduction element. In the Health domain such a benefit is clearly there, in the ePurse domain it is not, if only because of the fact that the 'old' systems still need to be maintained. The GSM application, moreover is a success because it did not replace an existing application with a new technology. GSM created a new application which the users easily accepted – and paid for.

Where smart card technology is used to replace existing procedures which the users are accustomed to in any of the four domains, the user has to change his behavior in order to make use of the new technology. For this the card-holder has not only to understand and trust the new technology. He also requires some kind of benefit (better prices, more security, more convenience, etc.) in order to change his behavior and to accept the new technology and make use of it. The other participating parties in the respective value chain (e.g. application providers, network providers, service providers, etc) equally require benefits from adopting a new technology in their business domain.

The major issues in introducing smart card technology and replacing existing processes is that the parties involved are addressing the entire value chain completely and that they demonstrate the advantages for all participants in this value chain prior to implementing a new smart card based process. In the case of smart cards and their important role in securing trust and privacy it is critically important to always act on the maxim that "a business is only a business when all parties involved are benefiting from it".

Interoperability and Multi - application cards across locations

As already noted the existing technology was not an issue. The projects showed they were able to implement and test their targeted pilot solutions with the existing technology. The major reason for this is standards: the project participants agreed prior to piloting on already existing industry specifications or international standards (e.g. Ducato on CEPS, Meditrav on XML, Sirocco on ISO 7816 and ISO 14443 B) and on even the use of proprietary technology (e.g. Calypso on its proprietary specifications, or others on operating systems of specific vendors). However, making use of industry specifications or international standards for a dedicated solution in a pilot site or even many pilot sites in one project does not solve the problem of interoperability with and between applications of the same kind developed outside the funded project. For example, the proof of concept in the Smartcities project is not interoperable with any other similar solution, except those cities where the same concepts were or will be adopted.

Hence, the necessity of an agreement on the requirements of a generic interoperable application platform was stressed in the discussion The eESC and NICSS Japan approach to mutual agreement was noted and explicitly welcomed and all participants were invited to comment on the GIF IAS model (Parts 1-4).

Standardization – Harmonization - Role of associations relative to standardization bodies

It became quite obvious in the discussions that the current situation of the smart card technology and its applications can be characterized as not being mature. A mature smart card industry is achieved through standardization and harmonization and could be categorized by the presence of all of the following features:

- growing acceptance of a wide range of smart card based product
- growing realization of market potential
- increased security of investments for card issuers
- equal opportunity of the players
- well established competition
- decreasing system investment costs

- business case which supports necessity of continuous leading edge R&D.

The existing situation shows a few generic standards (e.g. for contact cards the ISO/IEC 7816 series and for contact-less card the multi-option standard ISO/IEC 14443 A and B, with additional variations of other solutions). In the application domain there are a few good examples of industry standardization (like EMV and CEPS) but in general interoperability between applications of the same kind is not even possible in one country, not to speak of interoperability of applications in one or more domains between different countries. The most striking example for this situation is the existence of more than 20 electronic purse schemes in Europe which cannot be used cross border even though most of the member states now have one single currency: the Euro.

One factor which demonstrates maturity is the level of cross-industry approach to technical cooperation and competition on interoperability. The IST projects analyzed have concentrated on realizing their technical visions and have in some instances successfully established their own user fora to promote ***their*** concepts. In many cases the R&D projects are at the competitive technological edge and at the same time adopt a short term view of the business and user issues. In these circumstances the need and feasibility for interoperability is not always considered as sufficiently important and takes a very secondary role within the overall deliverables. Partnership with standardization organizations and in as far as possible contribution of specific identified standardization deliverables for advancement within standardization is critical if the optimum long term benefits are to be achieved from the project investments.

Existing smart card associations do not compete with or participate directly in formal standardization. At the same time they can be complementary to standardization. For example the role of smart card industry associations in contributing member developed consensus specifications to standardization can be significant e.g. eESC Trailblazer 3 on Security Protection Profiles has been ably supported by the members of the EUROSMART WG on Security, likewise for the EUROSMART WG on contactless technology.. In general smart card associations are more focused on commercial and promotional activities and do not participate directly in regional European or international standardization even where this is possible in Workshop modes, direct representation schemes etc. Their individual member companies participate directly themselves in formal standardization where they mainly try to foster concepts which they have developed and adopted in their company.

User literacy - Convenience for the User – Privacy - Security

A major focus of the eEurope Smart Card Charter is the action line of building trust, as it is perceived that only smart card literate users will accept this new technology. The Smart Card charter constituency decided therefore to establish Trailblazer 8 (user requirements) in order to identify the building blocks necessary to further establish trust among smart card users.

The key elements of this trust building process are clear. The user expects his card(s) to be secure and his personal data to be safe. To abandon an accustomed process and make use of the card in a new process he further expects, as outlined above, significant benefits compared to the old process. These benefits may be reduced costs, better or additional services, more convenience etc.

The projects presented in the clustering event did not report whether they had special activities or results on this matter at all. The issues of literacy, privacy, security and convenience were only raised in the discussions by questions from the floor to the presenters. In essence the projects were aware of the privacy and security issues and had taken them into account by applying state of the art functionalities in this respect. The issue of convenience was not explicitly defined as a requirement in the respective projects. It appeared, that the projects **assumed** that the solutions offered by the use of smart cards would attract the targeted user to make use of this new technology.

No project reported that one of their roll – out strategy objectives was to explicitly educate the targeted user in the use of the new technology, its opportunities and threats, thus building trust.

Results

Holding the clustering event during the Open Steering Committee meeting in Madrid ensured a high level of participation. Positive results were identified in two main areas:

1) lessons learned that are of direct benefit and use in the deliverables of eEurope Smart Cards and its trailblazers

2) Conclusions for future projects and clustering activities.

Both issues are dealt with in the next two sections.

6 eEurope Smart Cards Lessons learned

The main lesson is that the eESC deliverables are already actively targeting the key issues identified from the clustering session. Evaluating the entire clustering event from the selection process, studying the project results, what was heard from the projects having presented and from the discussions after the presentations, during the coffee break and the general discussion at the end of the event it became clear that in essence the issues raised are explicitly targeted by eEurope Smart Cards and its trailblazers objectives and deliverables.

The main results can be summarized as follows:

- **Technology**

  Technology is not explicitly identified as an issue. Pilot implementations were able to successfully use existing technical solutions. This has however also to do with the somewhat limited scope of the IST projects. Once a project needs to step out of proprietary solutions and aims for multi-application and cross border usage (either cross application domain border, cross country or region border or cross both) things are becoming much more complicated and technical solutions are either not available or not proven.

- Standardization and Interoperability

  Interoperability based on standards is a critical issue which has to be addressed urgently. Only standards, whether international or industry standards can provide for mass deployment at reasonable prices and cross-border usage of smart card applications, thus bringing costs down and making smart card use attractive.

- Business Case

  Generally, investment in any industry is only done when the market conditions ensure a satisfactory return on investment in reasonable time. This is also true for investments in smart card technology and smart card applications. The market conditions in the smart card industry at present do not promise this return on investment as major prerequisites are not in place. These prerequisites are industry or international standards providing for interoperability and cross-border acceptance of cards and usage of applications. Also, business cases are seldom created by implementing only parts of an integrated value chain using a new technology. Benefits are only achieved when the entire value chain is realized using the new technology, e.g. a health card application has to cover the entire value chain including the patient, medical practitioner, pharmacy, hospital and the associated money flows for insurance and payment of services rendered.

- User literacy

  An old Swiss farming proverb states “a farmer does not eat what he does not know”. In other words the user must understand and trust something prior to using it. Adopting this metaphor to smart card usage highlights the urgent need for the industry to consider education of the user before roll-out of smart card systems and to build systems which are easy to use, have enough card acceptance sites with standardized procedures of usage and in which clearly benefit the end-users.

It is evident that these key issues have not been given sufficiently high consideration as might have been expected in the IST Proposal evaluations and DoWs conducted after the Smart Card Charter identified these four factors as deal breaking issues at the Summit in Lisbon in April 2000.Granted there will always be a lead time for the introduction of a revised proposal acceptance criteria and incorporation of such details in the negotiated DoW of the projects. On the positive front this learning is a key issue which can be taken into consideration in FP6 and the work being undertaken by eESC is already going a long way to address the issues presented.

Some of the project proposal and DoWs in the 65+ Commission smart card compendium predate April 2000 .It can be safely assumed that few if any have taken a wide view (SmartCord and other specific eESC related ones excepted) dealing with the Smart Card Charter recommendations.

Proof of this assumption

1) When the Smart Card Charter objectives and deliverables were presented at the IMAGE clustering event in Tampere in March 2002, it became clear that most of the participants had not heard from this eEurope 2002 action and its objectives, and -even worse - some of the activities in IMAGE which is dealing with location based services in different cities and countries of the EU, which are expected to be smart card based have assumed that the problems of interoperability of payment schemes, security, digital signatures etc. are being solved independently outside the scope of their project. Their level of interaction with the eESC work is not sufficient to realize the mutual benefits sought and expected by all.

2) Immediate tangible benefits resulted from the clustering event in Madrid. This was possible because the level of previous information exchange and mutual cooperation had not been high. Projects which presented their activities to the Smart Card Charter constituency and those who did not present but were represented by delegates therefore had an effective information exchange during the two day meeting with the constituency and learned about eEurope Smart Cards and vice-versa.

   Examples of the immediate value – added is that

   - Discussion on mutual cooperation has started between Netc@rds and Meditrav, as the following exchange of message between Antonio Bianco and Noel Nader shows:

     Subject: R: Cooperation MEDITRAV - NETCARDS

     Dear Mr Noel Nader,
     Following our meeting in Madrid and the Phone conversation I confirm that MEDITRAV partners agreed to cooperate with netcards consortium. In order to analyze the areas of common interest Mrs Cristine Katapodi will be the contact person for deeper investigation.
     Please let us know if you confirm the interest of NETCARDS consortium with MEDITRAV.
     Best regards
     Antonio Bianco (Sent: 26 July)

     Dear Mr.Bianco,
     On behalf of the NETCARDS consortium, I am very pleased to welcome the MEDITRAV partners for future and efficient cooperation between both consortia.
     We already informed the European Commission contacts have been already undertaken in between both projects management.
     …
     Noël Nader
     NETCARDS Project Coordinator (Sent: 30 July)

   - Sirocco is now one of the sites getting a questionnaire prepared by FASTEST CWA
   - Smartcities will align with Trailblazer 8 User Requirements and the Smartcities results on Privacy will be incorporated in eEpoch

eESC and Co-chairs will make sure that these beginning cooperations will be an issue of constant reporting in the Steering Committee meetings during the life span of eEurope Smart Cards 2002 and recommend to continue this activity in a possible eEurope Smart Cards 2005 action.

Summary and recommendation:
Clustering makes sense. The experiences at Image, in C-ECOM and OSC4 Madrid strengthen the case for effective clustering of IST projects and their link to standardization. The objectives identified by the Commission clustering papers indicate the right way. The precise methods to be

adopted to foster the required levels of interaction and achieve maximum long term benefits needs to be tailored to suit the individual circumstances. FP6 presents an ideal opportunity as envisaged in the eESC Expression of Interest to address the different needs. As outlined in the eESC EOI the emphasis on standardization adopted within the Smart Card Charter should result in a prominent identified standardization deliverable of all future IST projects. In addition, SmartCord partners support and endorse the proposal from the closing C-ECOM conference in June 2002 that a single unified approach to ICT standardization would be beneficial.

7 Conclusion

The work to be accomplished by SmartCord participants before projects for clustering could be presented to the eESC Steering Committee was a very complicated task.

Though there was a website listing IST projects, this website and subsequent linked information was

- not standardized
- incomplete
- some projects were missing at all
- some projects had a website, some had not
- the content of the projects' website apparently is at the discretion of the project partners
- no information was given on the status of the projects
- no information was given on deliverables delivered
- the deliverables could not be obtained
- no information on lessons learned
- no information on roll – out or mass deployment.

The EU Commission Compendium of smart card projects, provided as a draft during its compilation to SmartCord partners and eESC steering committee was helpful but did not (and the final version does not) contain any information about results of completed projects. Hence, no summary information is provided in the compendium on the main deliverables, where to find them on the web, whether there are tangible products, whether projects have been operational, whether they are still running or not, whether there is mass deployment. This means that new projects accepted and funded by the Commission cannot easily make use of results or lessons learned from projects already finalized. While the current compilation is valuable, a second edition which provides valuable practical summary information on accomplishments and lessons learned (if this is done effectively and consistently) would reduce duplication of work and avoid projects repeating the mistakes already made by others.

Summary and recommendations

The main result of the eESC clustering event at the 4th Open Steering Committee Meeting in Madrid is that we now know about the projects which presented their objective and results so far and those which submitted their contributions in addition to the presentations.

To achieve the Commission objectives and expected results of clustering, the following recommendations of SmartCord partners might be considered to be mandatory in each proposal submitted for funding and incorporated in each contract for funding:

- Deliverable 1 of each project must be a state of the art assessment of the domain of the project, making specifically use of all material, products, guidelines, lessons learned, etc. of projects which had been funded by the Commission and are completed or are already published as deliverables of the projects

- All projects funded have to publish their objectives, deliverables and accomplishments on the web or submit this information to the Commission for web publishing in a standardized manner

- Each funded project has to organize its own clustering event during the course of the project, the results of which have to be published as a deliverable and made available on the web.

- Each funded project has to have a proactive dissemination activity

- The Commission has to provide for a key-word index concerning objectives, deliverables, lessons learned, outcome, deployments, problems, etc. of all funded projects in order to enable new projects to more easily find the necessary information in a timely manner.

In respect to the 6th Framework the intention of the Commission to publish the Expressions of Interest on a specific website is a step in the right direction, as all interested parties at least can identify possible cooperation partners. However as the Commission received more than 15.000 EoI's adequate search and select mechanisms need to be in place. Moreover future Networks of Excellence and Integrated Projects, need more than just names of companies, they need clear and relevant background information.

Annex: IST Smart Card Projects (SCC-SC 1060) (>51)

Projects directly supporting the Steering Committee and the Trailblazers (9)

SMART-IS (1st Call KA2), **EMBEDDED FINREAD, FINREAD SHOWCASE, SMART@PAY, SMARTCORD, SMART MEIJI** (5th Call CPA5), **TRUSTED FINREAD** (6th Call KA2), **EUCLID** and **SINCE** (6th Call CPA5).

Projects addressing issues on card technology (10)

USB interfaces in **SMART_USB** (2nd Call KA2), **USB_CRYPT** (3rd Call KA2) or **FULL SPEED** (6th Call KA2) or an acoustic interface for **I-PROVED** (6th Call CPA5). Other project will improve card security using elliptic curve cryptography for **AREHCC** (6th Call KA2) or devising a new generation of safer chips thanks to self-timed logic in: **G3CARD** (1st Call KA2). **SPARTA** (1st Call KA4) will allow for distributed security. **SHAMAN** (3rd Call KA4) addresses security of UMTS. **SETIC** (3rd call CPA5) will targets a low cost but secure ASIC for card readers. **FLEXIL** (1st Call KA4) targets cards components.

Projects concentrating in development tools (6)

SECSAFE (2nd Call FET), **MATISSE** (1st Call CPA2) and **VERIFICARD** (3rd Call CPA5) will offer methodologies and tools for formal verification of security; a common software platform is the objective of **ISOP1** (1st Call KA2); generic modularity are looked after by **CAPTIN** (5th Call CPA5) for terminals and by **FORMAT** (5th Call CPA5) for the card.

Projects dealing with RFID tag (radio frequency identification tag). (4)

Tags can improve workflow management allowing for an automated follow-up of products. Several open technological issues remain to be addressed like ultra thin components in **FLEX-SI** (1st Call KA1), long distance operation in **PALOMAR** (1st Call KA4). Solutions to application problems also need to be solved, this is the object of **LAUREL** (3rd Call CPA5) and **TRITON** (2nd Call KA4).

Project developing new platforms or building blocks for exploiting the benefits of smartcards. (7)

U-FACE, **BANCA** (1st Call KA2) and **FINGER_CARD** (3rd Call CPA5) will allow for the use of biometrics. **PKI CHALLENGE** (3rd Call KA2), **DIGISEC** (2nd Call KA2), **NESSIE** (1st Call KA2) will support the electronic signature and its related public key infrastructure. **@DAN** (6th Call KA2) and **SM-PAYSOC** (6th Call CPA5) will develop a new platform for secure e-transactions.

Projects implementing final applications only possible with a smartcard. (15)

PACE (1st Call KA2) develops an interoperable electronic purses and **BALCARD** (5th Call CPA5) demonstrates how to use an electronic purse over the Internet.

Transport and Tourism will also benefit form smartcards in **TR@VELSMART** (2nc Call KA1), **TOSCA** (2nd Call KA1). **SMARTCITIES** (1st Call CPA1) devises a novel generic architecture for city cards and is complemented by **COMBICEPS (OMNIPURSE)** (3rd Call CPA5) that devises a card combining a contact-less transport function and contact electronic purse based on the CEPS specification. The same technology may also be used by **TRIANGLE** (3d Call CPA5) onboard Thalys or Eurostar and metropolitan transport. **C-TRAVEL** (2nd Call KA2) targets "e-travel-business".

The smart cards of **MEDITRAV** (1st Call KA1) carry medical data of chronic patients.

eGovernment applications are supported by smartcards in **FASME** (1st Call KA1). **TRUE-VOTE** (4th Call KA2) will demonstrate the use of smart cards for voting.

PAIDFAIR (4th Call KA2) smartcards will authenticate IP content vendors and their customers. **ASPIS** (1st Call KA2) protects data access via Internet using smartcards.

Smartcards will secure access for tele-training in **TELENET** (1st Call KA3). Smartcards will enable data privacy in the e-commerce application of **E-TAILOR** (1st Call KA2).