From: Founding members of an ISG on Embedded Common Interface for exchangeable CA/DRM solutions (ECI)

To: ETSI Director General

Subject: Terms of Reference of the Industry Specification Group on Embedded Common Interface for exchangeable CA/DRM solutions (ISG ECI)

1 Decision/action requested

The Director-General is requested to approve the creation, Terms of Reference, and Membership Agreement for an ISG ECI; and to appoint Dr. Klaus ILLGNER-FEHNS as Convenor for the first meeting.

2 References

TWP clause 3	Operation of Industry Specification Groups (incl. sections 3.1 - 3.10)
TWP Annex D 3	Requirements for an Industry Specification Group

3 Rationale

In the rapidly developing area of digital Broadcast and Broadband, including content, services, networks and CPEs, service- and content protection realized by Conditional Access (CA) and Digital Rights Management (DRM) are essential to protect business models of content owners and PayTV operators. While typically CA provides mechanisms to access protected content distributed by a service provider over a network, DRM represents type and extent of the usage rights, according to the subscriber´s contract.

PayTV operators have established Digital TV platforms, which implement standards for basic functions, extended with proprietary elements. However, the consumer electronics market for digital TV is still fragmented, as specifications differ not only per country, but also per platform. Major reasons for fragmentation are various proprietary content and service protection systems and their limitations on certain distribution paths (e.g. broadcast). Examples are embedded or hardware-based solutions (CI, CI+), which result in "Lock-in" effects. This seriously restricts the freedom of many players in digital multimedia content markets. Due to technological advances, innovative, SW based CA/DRM solutions become feasible. Maximising interoperability while maintaining a high level of security, they promise to meet upcoming demands in the market, allow for new businesses, and broaden consumer choice.

The founding members have held several proposal meetings to consider a standardised environment for a **general purpose, SW based, embedded, exchangeable CA/DRM system.** Key benefits of the envisaged approach for content security are

- Flexibility and scalability due to SW based implementation,
- Applicability to content distributed via broadcast and broadband, including OTT,
- Support of multi-screen environment,
- Opening of the market by avoiding "Lock-in" for platform operators, network/service providers, and consumers,
- Open entire eco-system fostering market development.

The founding members are convinced that there is a window of opportunity. They have agreed to go for a standardisation initiative and to launch an ISG in order to develop specifications within 2 years. A

fast track mechanism, that is an ISG, is regarded crucial to meet the window of opportunity. Moreover, the support of experts from key stakeholders is needed, who are not – for the time being – ETSI members but are committed to contribute to the ISG.

As written in Clause 7 (Time Plan) below, for 2 years, ISG ECI meetings and conf-calls are planned to produce ISG ECI Group Specifications. After 2 years, ISG ECI will make proposals on how to evolve the ISG ECI future activities, either:

- Close ISG ECI, and handover ISG ECI GSs to a TB for maintenance,
- Or transfer and continue the work in an existing TB (such as e.g. EP E2NA meaning that all non-ETSI member ISG participants would have to become ETSI members and that the ISG ECI voting rules would have to be changed to the ETSI Directives TWP weighted voting rules (article 1.7.1 of ETSI TWP),
- Or create a new TB (e.g a new WG in a TC, new TC, or new EP),
- Or continue in ISG ECI for an extended period with revised Terms of Reference.

The approach of ISG ECI is elaborated in more detail in the following sections.

3.1   Definitions

As in international standards and other documents different terminology is used in context with the subject in focus, the following definitions are added for clarification:

CA/DRM: Conditional Access and Digital Rights Management

conditional access system [ITU-T X.1191]: A component of a service and content protection system, the purpose of which is to prevent unauthorized (unentitled) access to a service or to content.

service protection [ITU-T X.1191]: Ensuring that an end user can only acquire a service and, by extension, the content contained therein, that they are entitled to receive. Service protection includes protecting service from unauthorized access as (IPTV) contents traverse through the (IPTV) service connections.

content protection: [ITU-T X.1191]: Ensuring that an end user can only use the content that he/she already acquired in accordance with the rights granted to him/her by the rights holder; content protection involves protecting contents from illegal copying and distribution, interception, tampering, unauthorized use, etc.

digital rights management [ITU-T X.1191]: A synonym for service and content protection or content protection, depending upon the context of use.

SCP: Service and Content Protection

service and content protection [ITU-T X.1191]: A combination of service protection and content protection, or a system or implementation thereof.

Note: Throughout this document the expression CA/DRM is used.

3.2   Background to CA/DRM landscape: receiver market fragmentation by proprietary systems

Recent developments concerning content distribution via classical Broadcast networks as well as via Broadband networks, alongside with new services and technologies, as e.g. HDTV, UHDTV, 3DTV and also including interactive applications, had some remarkable impact on the respective value chain and in particular the TV receiver market.

Due to this rapid developments more and more hybrid, interactive receivers have entered this market, combining both sides, Broadcast and Broadband, following proprietary solutions for essential key components, such as Conditional Access and Digital Rights Management Systems (CA/DRM) and associated middleware components, at a large scale.

Concerning an increasing number of channels associated with the distribution and consumption of HD content on Broadcast side as well as transmission of CoD/VoD over Broadband networks via powerful and advanced streaming protocols, e.g. MPEG-DASH, the demand from content owner´s side for service and content protection in combination with Digital Rights Management for certain programme platforms and/or channels has to be acknowledged.

The number of proprietary CA- systems used in classical Broadcast systems today, including DRM solutions for IPTV or WebTV, have created a rather fragmented market situation in the retail market for Consumer Premises Equipment (CPE), making it difficult or even impossible to use CPE with different service providers even within the same network type.

Thus CA/DRM systems, as well as e.g. Middleware and signalling protocols, restrict the interoperability of CPE with regard to content consumption significantly. Concerning classical broadcast systems, European legislation mandates, based on the Universal Services Directive (USD), the use of a common scrambling system as the only existing layer of interoperability of digital TV CPEs with respect to security. According to the USD digital CPEs with screen sizes larger than 30 cm further have to be equipped with an open interface for content decryption, introduced into the market as Common Interface (CI). So far European legislation has not included Multimedia devices as e.g. tablets and smart devices within home networks, which also have to be addressed by future standardisation work.

Apart from these legislative aspects, which formed the basis for technical implementations, all attempts to improve the interoperability of CA/DRM systems, e.g. in DVB, finally failed due to missing support and partly opposition of CA/DRM vendors. Key issues claimed particularly by some CA/DRM-vendors include general security concerns, as e.g. the inability to react to security breaches, as well as the inability to address liability, which in their view could only properly be addressed by proprietary systems. Therefore standardisation efforts of the past with regard to CA/DRM systems have concentrated on the exchangeability of proprietary HW-enhanced solutions (e.g. CI and CI+) for classical Broadcast systems and related to above mentioned EC legislation. Recent market developments, such as interoperability of embedded CA/DRM solutions capable to enable usage of protected content accessed via Broadcast and Broadband from different sources, usage of several CA/DRM systems at the same time and exchange of the CA/DRM system enabling flexible access to protected content via future networks, services and applications (e.g. within NGN environment) imply new requirements for CA/DRM systems. Important questions about the interoperability of such CPE devices with enhanced features have to be addressed.

The need for standards in the field of CA/DRM systems appears to be not only relevant from consumer´s perspective with regard to protection of his investment in order to use retail CPE in a more flexible way under varying network/provider constellations but also from broadcaster´s and platform provider´s view in order to reduce or avoid "lock-in" situations with respect to specific CA/DRM solutions and further from a CPE manufacturer´s point of view related to more cost effective interoperable CA/DRM implementations with positive results for economy-of-scale aspects. Specifically CPE chip-sets are currently manufactured as chip variants differing in the implemented CA vendor specific proprietary enhanced hardware security elements. A CPE manufacturer therefore has to take an irreversible decision about the implementation of an embedded CA/DRM system in a certain CPE being not able to develop interoperable CPE, which would offer more than one embedded CA/DRM system.

Need for Standardisation

Although several standardisation initiatives have produced first standards in this area several years ago (e.g. DVB Simulcrypt) as well as during past 2 or 3 years (e.g. ETSI TISPAN), there are still important and necessary work items to be covered by standardisation for the whole environment of embedded and exchangeable CA/DRM systems, including trust aspects and related architectures and mechanisms in order to address the above mentioned aspects.

Taking into account, that former TC TISPAN has partly already worked on this subject and JTC Broadcast has produced a series of Technical Specifications in the field of classical Broadcast systems, ETSI seems to be the relevant body for launching a standardisation initiative on this subject.

Concerning current worldwide activities in this area and being aware of rapid developments related to the distribution of Multi-Media (MM) content via Broadcast and Broadband networks and also concerning urgent questions, which are related to increasing use of tablets and smart phones for consumption of MM content, a standardised environment for embedded exchangeable CA/DRM systems has to be specified in a rather short time scale.

The foundation of an ISG ECI therefore seems to be the right answer, allowing a fast track standardisation in order to create Group Specifications (GS), based on proven Technical Working Procedures, IPR rules and support by ETSI.

Existing related trends

US Cable Business

In the US cable business the cable operators usually provide their customers a STB compliant with their requirements. The CA business in the US cable market is dominated by two vendors. A retail market for cable CPEs does de facto not exist in the US. The US media regulator for cable, the Federal Communication Commission (FCC), has tried to enforce more competition and interoperability of cable CPE devices by mandating the implementation of a Cable Card, comparable with the European Common Interface Plus (CI-Plus). The commercial success of the Cable Card is very limited.

In reaction to the CableCard failure the US cable industry had established a project at it its research institute CableLabs targeting the development of a downloadable Conditional Access system, which would overcome the need for the CableCard and would allow the cable operators to swap more easily their CA-system in case of security problems or in case they want to change to a different CA-vendor. A specific company was founded, targeting at the establishment of a trust regime and the deployment of DCAS compliant CA implementations. Unfortunately, the DCAS-project was terminated for various reasons before the development work had been finalised.

In 2008 CableVision (the fifth largest cable operator in the US) requested a waiver from the FCC integration ban, in order to be able to prepare for a downloadable security system. The waiver was granted in 2009 for a two years period. Until 2011 CableVision succeeded to establish a downloadable security system, which fully met the FCC requirements for interoperability. CableVison continued to deploy the downloadable security system and therefore does not need a FCC waiver any more.

A second big US cable operator, Charter (the fourth largest cable operator in the US), requested in 2012 a similar waiver, as CableVision did, targeting as well a migration project to a downloadable security system. This request is still pending in March 2013. A conditional two-year waiver was granted by the FCC in April 2013, allowing also Charter to develop an interoperable security solution for their CPE devices.

Both examples clearly show, that there is a market need for a more cost effective solution for an embedded exchangeable security system in DigitalTV CPEs. The European CI-Plus and the US CableCard solutions provide obviously interoperability. However, in comparison with currently deployed embedded security solutions it implies a significant cost burden. As the US examples show, these cost issues are relevant for both, the OEM and the retail market.
Unfortunately, the solutions already deployed at CableVision and planned for deployment are proprietary solutions offered from one CA vendor. It is unclear whether this solution would meet the requirements of other platform operators, CA vendors or stakeholders of the CE industry.

European solutions for flexible content protection

Although in certain market areas, as e.g. in cable networks, proprietary STB, compliant with the requirements of specific cable providers, are usually provided, comparable to the situation in the US (see above), alternative solutions have been introduced to the European market.

One of the first exchangeable CA/DRM solutions was introduced to the broadcast area as Common Interface (CI), making it possible to change a CA/DRM system by change of a Conditional Access Module (CAM) together with a smart card, issued by a specific service provider. As the relating CI

specification was published as a standard (CENELEC) and referenced by the EC USD, the market introduction followed soon.

Due to some further improvements, covering e.g. the encryption between module and host, the next CI generation of common interface, known as CI+, was specified and developed. This industry specification, including a trusted environment, soon was accepted by the market participants, although not been developed by DVB as an ETSI standard but instead as an industry specification by the CI plus consortium.

Current activities related to CI+ in order to address advanced features in a converging environment have been transferred again to DVB. Several aspects, as e.g. multistream applications and new form factor, will be part of a future CI plus release. As not the whole ecosystem was involved in the specification work of the initial specification, some relevant shortcomings had now been identified.

Taking this into account, the advantages of CI/CI+ were obvious, as this technology offered a first step into interoperability, concerning the consumption of secured content with retail CPEs, prepared with CI/CI+ slots and standardised/specified interfaces.

Despite the fact, that CI+ might be regarded as an evolutionary step, shortcomings still remain, as this technology keeps relying on hardware modules with a list of disadvantages as e.g. rather high production cost, currently only one active CA/DRM system at a time, solution only for broadcast content, necessary hardware change in case of update by service provider and not addressing mobile and smart devices in multiscreen scenarios.

Some recent proposals in international standardisation already show a transition to software based updates of embedded or hardware based CAMs, although currently not yet addressing end-to-end multi-vendor-solutions.

The proposed ISG ECI addresses this remaining standardisation gap by specifying a software interface, instead of a hardware CI interface, between a software container with a loadable CA/DRM kernel and the host.

Thus, the standardisation activities in ISG ECI will focus on a future-proof, advanced embedded solution, making HW-based CAMs obsolete, and being fully specified as a SW solution.

Asian Advanced Solutions

Singapore Government (IDA, MDA) has initiated an Industry dialogue under the term "Next Generation Interactive Multimedia, Applications and Services – Project NIMS" in 2009, addressing, beside other aspects, the needs to identify common interfaces for the functionality of advanced STBs. The idea behind the so-called "Common featured Set-Top-Box" is a concept based on common features with standards-based technical specifications and open interfaces for all involved STB devices. This concept also allows optional features for differentiation from service provider´s view as well as end-user´s access to various network and service providers and their content, based on a flexible advanced Retail STB.

Several further activities from Asian countries have led to several new work items in the area of CA/DRM systems; currently e.g. ITU-T is working on Draft Recommendations on renewable conditional access client software (initiated by ETRI, Korea) as well as on DRM standardisation, concerning hybrid scenarios (initiated by JapanCableLabs).

Global first standardisation efforts for advanced CA/DRM solutions

- ITU-T Recommendations related to CA/DRM

    o Study Group 9 - Television and sound transmission and integrated broadband cable networks:

        o J.293: „Component Definition and Interface Specification for Next Generation Set-Top Box" (Defnition of a hybrid STB, incl. Security Module with Configurable Security Processor)

- o J.1001 (J.rcas-req): „Requirements for conditional access client software remote renewable security system"

- o Study Group 17 - Security (developed within IPTV-GSI as X.iptvsec-series); among further Recommendations:

  - o X.1191: „Functional requirements and architecture for IPTV security aspects"

  - o X.1193: „Key management framework for secure Internet protocol television (IPTV) services "

  - o X.1198: "Virtual machine-based security platform for renewable IPTV service and content protection"

- ▪ ETSI Technical Specification with regard to CA/DRM

  - o TS 187 021 "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); Security services and mechanisms for customer premises networks connected to TISPAN NGN"

All of the above mentioned examples for existing trends concerning first steps into the direction of exchangeable downloadable CA/DRM solutions, have shown the urgent demand on one side but still a lack of end-to-end standards on the other side. In order to fill this gap by standardising a software-based CA/DRM exchange under trusted environment, incorporating all parts of the value chain, the work of this ISG ECI will be of huge importance for future-proof advanced solutions in this area.

Market Impacts

Introducing a new comprehensive standard, covering all technical and procedural aspects of an exchangeable embedded CA/DRM system based on software download under trusted environment may lead in consequence to:

- transition from outdated hardware-based solutions using detachable modules for CA/DRM to advanced technologies using software download and trusted relationships, as basis for a Europe-wide and further global implementation,
- basis for achieving interoperability among digital multimedia content associated with different CA/DRM systems and retail CPEs (e.g. TV receiver, iDTV, STB),
- cheap and easy implementation for all levels of the value chain
- basis for inclusion of classical broadcast (cable, satellite, terrestrial) as well as IP-delivered content distributed via managed (IPTV) or unmanaged networks (Web-based content), using same mechanisms with regard to software-based framework implementation,
- improvements for platform/network operators concerning the introduction of economic and flexible solutions in order to avoid "lock-in" effects with regard to specific CA/DRM vendor solutions,
- advantages for broadcasters and content owners with respect to broad distribution of protected content, independent of access technologies,
- equal market opportunities and fair competition for CA/DRM vendors,
- major improvements for CPE manufacturers by avoiding fragmented markets and expensive HW-based solutions (e.g. CI plus slots/modules),
- increasing "economy-of-scale" effects for chipset manufacturers by implementing specified functionality as basis for global delivery,
- increasing consumer satisfaction with regard to protection of investment (e.g. iDTV with integrated triple-tuners, HDTV, 3DTV, HbbTV) as well as concerning content consumption, independent of network and/or service provider or used access technology,
- ease of implementation in Multiscreen environments
- basis for content distribution in Next Generation Networks enabling users to access content of their choice, according to specific usage rights,
- Improvements for further competition based on common specified interfaces, protocols and mechanisms with regard to exchangeable, embedded CA/DRM solutions.

4   Terms of Reference for ETSI ISG ECI [TWP D.3, Part Aa)]

In the following clauses, deviations from the applicable ETSI TWP as agreed by the members of ISG ECI, including deviations to the ETSI TWP made in the ISG Membership Agreement, are stipulated.

4.1   Scope

ISG ECI aims to develop Group Specifications (GS) for a software-embedded Common Interface for CA- and DRM-solutions. Members and participants of the ISG commit to support the following principles:

The specification(s) will describe an architecture and key interfaces for CA/DRM systems in consumer premises equipment (CPE) that enable changing embedded CA/DRM kernels by software-downloads of new kernels under trusted environment and without the need to replace hardware, apart from a possible but not mandated smart card. It is applicable for services delivered via broadcast as well as via broadband.

The Founding Members of the ISG laid down in a White Paper the basic principles of a possible technical implementation in order to introduce to the market in a harmonized and open way the methodology of software-based CA/DRM solutions. This White Paper can be found at http://portal.etsi.org/portal/server.pt/community/ECI/369. All members and participants of the ISG are expected to consider the principles laid down in the White Paper and to contribute to the development of appropriate Group Specifications.

In particular, members and participants commit to develop, in the ISG ECI, Group Specification(s) addressing the following essential functionalities:

- CA/DRM kernels are isolated in a secured software container with well-defined interfaces to the rest of the CPE and with a dedicated software loader,
- The software loader structure will be described in the specification(s) and will be mandatory for conformant implementations of the specification(s) in a CPE,
- The software loader structure will enable the download and installation of CA/DRM kernels to the container. Download and installation of CA/DRM kernels will be independent from the rest of the CPE system software and applications and will yield a fully functional CA/DRM system on the CPE,
- The specification(s) will enable any DVB or other CA/DRM system to be implemented on a CPE via download of associated CA/DRM kernels,
- The specification will include the description of a light virtual machine on which CA/DRM kernels will run within the software container,
- Download of CA/DRM kernels are based on mechanisms within a trusted environment.

4.2   Membership

Membership in ISG ECI is restricted to ETSI members and applicants for ETSI membership, who have signed the ISG ECI Membership Agreement, according to ETSI Technical Working Procedures clause 3.4.

Observers or non-members of ETSI may participate in the ISG according to the rules as described in the ISG ECI Participant Agreement.

Before signing an ISG Member Agreement, a member shall express its commitment to the ToR of the ISG ECI by sending an e-mail to the ISG ECI officials and the ETSI Director General.

4.3   Dues

Dues for ISG ECI membership and operation are fixed on an annual basis by the members, based on the costs the members anticipate to incur.

For the initial year of operation of the ISG ECI, no dues are anticipated.

Observers and non-members of ETSI are required to pay a per-meeting participation fee as described in the ISG Participant Agreement. This per-meeting fee is set initially at €100 (excluding taxes) per person per meeting day. These fees may be modified by a decision of the members of the ISG ECI.

4.4   Duties and Rights

ISG ECI members and participants have the duty to constructively cooperate on the development of ISG ECI Group Specifications within the scope of the ISG as described in 4.1, which shall serve as a basis of ISG ECI's development work.

Members have the right to cast their vote on the approval of a Group Specification when necessary, and in other instances when decisions by the members are required. Members have the right to appeal directly to the ETSI Board to challenge a Chairman's decision and shall inform the ISG Chairman and the ETSI Director-General beforehand.

Voting is on a one-member one-vote basis, and voting rights are dependent on regular participation in the ISG ECI: members are required to have participated in at least two meetings (face-to-face or remote/conf call) preceding any vote in order to have the right to vote; this does not apply to the Founding Members[1] of ISG ECI during the first two meetings of ISG ECI.

For the principles of decision making refer to 4.7.3.1.

4.5   Term of office of chairman, vice-chairmen and working group chairmen

The chairman, vice-chairmen and working group chairmen of ISG ECI are appointed for a period of 2 years. After each period they may be re-appointed.

4.6   Preparation of Group Specifications

Group specifications are prepared within the ISG ECI or within specific working groups of ISG ECI. Working groups are chaired by working group chairs, who are appointed according to the rules of operation of the ISG. All draft specifications must be approved by the members using the decision making process detailed in 4.7.

If a specification is prepared in a working group and fails to be approved by the members, it shall be referred back to the working group.

4.7   Detailed deviations from the ETSI Technical Working Procedures (TWP)

In the following, deviations from the applicable ETSI TWP as agreed by the Members of ISG ECI, including deviations to the ETSI TWP made in the ISG Membership Agreement, are stipulated.

Section 4.7 is included in these Terms of Reference only for information as the prevailing document in respect of changes to the TWP is Annex 5 of the ISG ECI Membership Agreement and of the ISG ECI Participant Agreement.

4.7.1   Participation in the work of the ISG (extension of TWP 3.4)

Observers or non-members of ETSI, must have signed the ISG ECI Participant Agreement to be authorized by the Chairman to participate throughout the lifetime of the ISG ECI, to attend ISG meetings and to actually participate without the right to vote. They shall pay a "per meeting fee", specified in this ISG Proposal (see clause 4.3) as well as in the ISG Participant Agreement.

Before signing a Participant Agreement, every participant shall express its commitment to the ToR of the ISG ECI by sending an e-mail to the ISG ECI officials and to the ETSI Director General.

The Participant Agreement may be terminated by the ISG Chairman if the participant has not participated in any ISG ECI meeting for 6 months, or in two successive meetings of the ISG ECI if they

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1 Founding Members: according to Annex 2 of ECI ISG Agreement for ETSI Members and ECI ISG Participant Agreement

are separated by more than 6 months. A revocation notice under article 9.1 (c) of the ISG Participant Agreement is sent to the Participant in this case. The ISG Chairman will periodically review the participation record of authorized Participants.

4.7.2 Convening an ISG meeting (TWP 3.5, modified)

4.7.2.1 Invitation to an ISG meeting (TWP 1.5.1)

The invitation to an ISG meeting and the necessary logistical information shall be disseminated by the hosting organization at least 15 working days before the meeting to all on the ISG membership list (see TWP clause 1.5.5).

The first meeting of a new ISG will be announced in a Collective Letter, with at least 30 days notice, by the ETSI Secretariat.

4.7.2.2 Agenda for an ISG meeting (TWP 1.5.2, modified)

The draft agenda shall be disseminated by the responsible Chairman to all on the ISG membership list at least 10 working days before a meeting. The draft agenda shall include details of draft ETSI Group Specifications for approval and officials for appointment. Any other subject matters where voting may be required shall also be included and indicated in the draft agenda.

The draft agenda for the first meeting of the ISG will be announced in a Collective Letter, with at least 30 days notice, by the ETSI Secretariat.

4.7.2.3 Documentation for an ISG meeting (TWP 1.5.3)

Documents shall be numbered as shown in the following example:

ETSI/ISG(nn)x (e.g. ETSI/<name>(07)01)

This numbering system has four logical elements:
1) **ETSI:** to indicate that it is an ETSI document;
2) **/ISG:** the name of the Industry Specification Group (ISG), i.e. ECI or Working Group;
3) **(nn):** to indicate the year, e.g. (98);
4) **x:** to indicate any additional information concerning the unique number of the document or its status, etc.

The fourth item (x) can be used in any way that an individual ISG sees fit.

Example for first document ISG ECI, year 2013: **ETSI/ISG ECI(13)001**

4.7.2.4 Registration for an ISG meeting (TWP 1.5.4)

Every attendee shall register on arrival at each meeting. Each attendee who represents a member or a participant shall declare the precise name of that member or participant. An attendee may only represent one member or one participant.

4.7.2.5 Maintaining an ISG membership list (TWP 1.5.5, modified)

The ISG ECI shall maintain a membership list within an email exploder list established specifically for that purpose. Any individual may join this email exploder list if he/she is a representative of an entity that has signed the ISG ECI Member Agreement or the ISG ECI Participant Agreement and has an ETSI server user account, and those who join this email exploder list will be considered as being on the ISG ECI membership list. Failure to reconfirm the intention to remain on the email exploder list at regular intervals (lists are normally reviewed every six months) will result in removal from this email exploder list and thus from the ISG membership list.

The ISG ECI membership list shall be used for the dissemination of information and for decision making within the ISG ECI.

4.7.3   Decision making (TWP 1.7 and TWP 3.7, modified)

4.7.3.1   Principles of decision making (TWP 1.7.1, modified)

The ISG ECI shall endeavour to reach Consensus on all issues, including the approval of draft ETSI Group Specifications and the adoption of Group Specifications.

If Consensus cannot be achieved, the Chairman can decide to take a vote which may be performed by a secret ballot. A vote may be conducted during an ISG meeting or by correspondence.

Where voting is used, vote results shall be evaluated by the Chairman using the voting procedure on basis of *one-member-one-vote* of each member.

A proposal shall be deemed to be approved if 71 % of the votes cast are in favour. Abstentions or failure to submit a vote shall not be included in determining the number of votes cast.

If a proposal fails to achieve 71 %, the result shall be re-calculated using the votes of ETSI full members only. If the re-calculated result achieves 71 %, the proposal shall be deemed to be approved.

If, in case of using the votes of ETSI full members only, a 71% majority can not be achieved, the simple majority of the votes cast of all members shall be sufficient for approval.

For interpreting the result of an **election for an official of the ISG**, a simple majority of the votes cast shall be used (see 4.7.3.1.3 below).

4.7.3.1.1   Voting during a Technical Body meeting (TWP 1.7.1.1, modified)

The following procedures apply for voting during an ISG ECI meeting:

● before voting, a clear definition of the issues shall be provided by the Chairman;

● members shall only be entitled to one vote per member;

● if a member has more than one representative present, only one representative may vote;

● the voting weight shall be "1" per member;

● if manual voting procedures are used, each member may only cast the vote once. If electronic voting procedures are used, votes may be changed prior to the closure of the vote;

● the opinions of Counsellors should be noted;

● ISG ECI members are eligible to vote only if they have been present during the previous two meetings;

● Founding Members of the ISG ECI, according to Annex 2 of the ECI ISG Agreement for ETSI Members, shall be eligible to vote during and up to the end of the first two meetings following the creation of the ISG ECI. Thereafter they are subject to the normal procedural requirements as for all other members, as defined above.

● voting by proxy is not permitted;

● there are no quorum requirements;

● the result of the vote shall be recorded in the meeting report.

4.7.3.1.2   Voting by correspondence (TWP 1.7.1.2, modified)

The following procedures apply for voting by correspondence:

- before voting, a clear definition of the issues shall be provided by the Chairman and disseminated to all on the ISG ECI membership list;

- the voting period shall be defined by the ISG ECI Chairman and communicated to all on the ISG ECI membership list;

- members shall only be entitled to one vote per member;

- the voting weight shall be "1" per member;

- ISG ECI members are eligible to vote only if they have been present during the previous two meetings;

- Founding Members of the ISG ECI, according to Annex 2 of the ECI ISG Agreement for ETSI Members, shall be eligible to vote during and up to the end of the first two meetings following the creation of the ISG ECI. Thereafter they are subject to the normal procedural requirements as for all other members, as defined above.

- electronic voting only shall be used for voting by correspondence and votes may be changed prior to the closure of the vote;

- there are no quorum requirements;

- at the end of the voting period the Chairman shall count the votes as described in clause 4.7.3.1;

- The result of the vote should be disseminated to everybody on the ISG ECI membership list within 15 days.

4.7.3.1.3   Voting for the election of a Technical Body official (TWP 1.7.1.3)

For the purpose of electing any ISG official the procedures given in clauses 4.7.3.1, 4.7.3.1.1 and 4.7.3.1.2 shall apply.

In the case where there is more than one candidate, a secret ballot shall be used. The candidate obtaining the highest number of the votes in the ballot is elected.

The ISG Chairman shall be responsible for the voting process and shall ensure that confidentiality is maintained.

If the vote is conducted during an ISG meeting only the final result shall be recorded in the meeting report.

If the vote is conducted by correspondence only the final result of the vote shall be disseminated.

4.7.3.2   Appealing against a Chairman's decision (TWP 1.7.2)

Any member of the ISG, who is against the Chairman's ruling on a vote may submit its case to the Board for decision. In such cases the member shall also inform the ISG Chairman and the ETSI Director-General beforehand.

When the ISG Chairman has made a ruling, his decision shall be taken as the basis for future operations, unless overturned by the Board.

5   ETSI field of interest [TWP D.3, Part Ab)]

ETSI's scope of activities comprises technical pre-standardisation and standardisation in ICT, including telecommunications, broadcasting and other electronic communications networks and services.

See §3 for more information about CA/DRM: "Rationale, Background to CA/DRM landscape: receiver market fragmentation by proprietary systems" (including "Need for Standardisation", "Existing related Trends", "Market Impacts").

6 Why any overlapping or complementary elements (with reference to existing work or Terms of Reference of any existing Technical Committee or Project) is regarded as desirable [TWP D.3, Part Ac)]

Concerning a related subject, Draft Technical Report TR 101 532 (Work Item DTR/E2NA-00004-CA-DRM-interop) has been transferred from TC MCD (closed by end of 2012) to EP-E2NA WG Requirements. It addresses only general aspects of interoperability with regard to CA/DRM. The draft TR is still in a premature condition. Because of contentious discussions due to incompatible business models of different stakeholder groups the work is stalled.
Moreover, Draft TR 101 532 is quite narrow in scope and limited to high level descriptions of a small selection of use cases and market needs.

However, technologies and markets for digital multimedia content are evolving fast and there is a window of opportunity which has to be met. There is no alternative to a group with a strong focus on progressing specifications making use of new and advanced technologies in the CA/DRM field,

- considering Software based implementations,
- addressing content distributed via Broadcast and Broadband and
- avoiding "Lock-in" situations for platform operators and also users

ISG ECI will allow to develop new specifications on embedded common interfaces based on downloadable mechanisms in an efficient and focussed way in an expected rather short time span. An additional advantage, compared with established or new TCs, will be the availability and participation of non-ETSI members and experts in the area of exchangeable CA/DRM systems.

Other ETSI Technical Committees and Projects as e.g. JTC Broadcast and EP-E2NA either do not cover the above mentioned aspects (JTC Broadcast) or have decided not to deal with content security aspects (E2NA).

Both, in the interest of the proponents and ETSI, it is necessary to provide a standardisation environment, making it possible to develop new and advanced specifications in a constructive and creative way, following a consensus-driven standardisation process.

ETSI has the chance to influence and stimulate standardisation activities with its work programme of ISG ECI at the forefront of a technological evolutional process. By setting up ISG ECI in a timely manner ETSI will be ahead of other SDOs, e.g. ITU-T.

7 Time plan [TWP D.3, Part Ad)]

ISG ECI meetings and conf-calls are planned for 2 years to produce ISG ECI Group Specifications (24 months from kick-off meeting).

Following Group Specifications are planned:

- First Group Specification, Framework Document, within 6 months;
- Group Specifications (at least 3 parts) covering functional and architectural aspects (related to Advanced Security, Virtual Machine, SPCP Container and Interfaces): further 12 months;
- Group Specification on Trust Aspects: further 6 months.

After 2 years, ISG ECI will make proposals on how to evolve the ISG ECI future activities, either

- Close ISG ECI, and handover ISG ECI GSs to a TB for maintenance
- Or transfer and continue the work in an existing TB, such as e.g. EP E2NA, meaning that all non-ETSI member ISG participants would have to become ETSI members and that the ISG

ECI voting rules would have to be changed to the ETSI Directives TWP weighted voting rules (article 1.7.1 of ETSI TWP),

- Or create a new TB (e.g. a new WG in a TC, new TC, or new EP)
- Or continue in ISG ECI for an extended period with revised Terms of Reference.

8 Chairmanship [TWP D.3, Part Ae)]

Dr. Klaus Illgner-Fehns has accepted to stand as convenor for the first meeting of ISG ECI. The Collective Letter announcing the first meeting will include a call for candidatures for the Chairmanship. If it is not possible to appoint a permanent chairman at the first meeting then the meeting shall appoint a convenor for the second meeting.

9 Resource requirements [TWP D.3, Part Af)]

No resource requirements, beyond the "basic administrative support" provided by the ETSI Secretariat to ISGs, have been identified. Further resource requirements may be identified from time to time by the ISG members, who will decide on the funding arrangements as required.

10 ETSI Secretariat resources [TWP D.3, Part Ag)]

"Basic administrative support" will be provided by the ETSI Secretariat, e.g.:

- info/meeting/document handling area on the ETSI Portal
- document storage area on the ETSI DOCBOX server
- e-mail lists provision
- entry of the Work Items into the WPM database (provided by ESP)
- processing/publication of ETSI Deliverables (providing they have respected the ETSI Drafting Rules)
- a support officer will be allocated to provide guidance and assistance to the ISG
- GoToMeeting and Audio Bridge arrangement

Support for meetings will be provided when the meeting is held at the ETSI Headquarters, e.g.:
- meeting rooms in ETSI premises.
- meeting support for invitations, badges, etc in ETSI premises.
- tea/coffee in ETSI premises.

Meetings held outside of the ETSI Headquarters shall be supported by the hosting member organization.

11 ISG membership agreement [TWP D.3, Part Ah)]

See ISG ECI Agreements (Member Agreement and Participant Agreement).

12 ETSI full and/or associate members having declared their willingness to provide resources [TWP D.3, Part Ba)]

The following ETSI members have indicated that they are willing to support the ISG ECI (at least four required):

1. Bundesministerium für Wirtschaft und Energie (BMWi)
2. Deutsche Telekom AG
3. Institut für Rundfunktechnik (IRT)
4. Irdeto BV
5. KATHREIN-Werke KG

The following non-members of ETSI have also expressed an interest in participating in the work of the ISG ECI:

1. Kabel Deutschland Vertrieb und Service GmbH (KDG)

2.   Van Baar Beheer BV

More companies have expressed their interest in the ISG ECI approach and are expected to join ISG ECI.

13   Planned deliverables and their delivery dates shall be identified [TWP D.3, Part Bb)]

At the time of writing this proposal following Group Specifications have been planned:

* Group Specification (GS): Framework for an Embedded Common Interface (ECI) for exchangeable CA/DRM solutions
* Group Specification (GS): Functional and architectural aspects (covering Advanced Security, Virtual Machine, SPCP Container and Interfaces)
* Group Specification (GS): Trusted Environment.

NOTE: these are working titles and subject to change in the course of ongoing standardisation work.

14   Internal organization [TWP D.3, Part Bc)]

Currently no specific working groups are planned; for the time being all work will be carried out in the main group.

Organisational aspects will be covered in detail during the first meetings of ISG ECI.

15   Any committee/project-external ETSI resources required (i.e. outside those provided by the Industry Specification Group participants) shall be specified [TWP D.3, Part Bd)]

At the time of writing this proposal no additional resources are required.

The ISG ECI members will find their own source of funding for additional tasks and resources, e.g. for project-external experts, if necessary.

16   Maintenance arrangements for deliverables shall be specified [TWP D.3, Part Be)]

The maintenance of any deliverables will be assured by the ISG ECI. At the end of the work the ISG shall define the follow-on responsibility for any required maintenance.

Dependent on further development of EP-E2NA, EP-E2NA might be a candidate for taking maintenance of ISG ECI on board.

17   The relationship with ETSI Technical Organisation shall be specified (i.e. list the interfaces between the ISG and ETSI TBs) [TWP D.3, Part Bf)]

ISG ECI will liaise with:

* ETSI EP E2NA,
* ETSI TC CABLE,
* DVB / JTC Broadcast,
* ITU-T (SG17, SG9, IPTV-GSI) and
* ITU-R SG6

NOTE: modifications in the course of ongoing work are likely. Further bodies may be named during the first meeting of ISG ECI.