e-SAP 2003 – Proposal No 44 (Smart House) Rev.3

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TECHNICAL ANNEX

(2003 10 17)

Domain:	**Design for All - Broadband**
Task:	**Proposal for a Phase 2 of the Smart House Standardisation Initiative**
Contractor:	**CENELEC**
Subcontractors:	CENELEC independent experts

I Description of the tasks to be performed

1. Rationale

Executive Summary

The overall objective of this proposal is to grow and sustain convergence and interoperability of systems, services and devices for the Smart House that will provide the European Citizen with access to increased functionality, accessibility, reliability and security that a Smart House, with common and open architectures, will deliver in an expanding broadband infrastructure throughout Europe.

The specific objective of this second phase of the Smart House mission is to deliver a "Code of Practice" for all actors, systems, networks, protocols, applications and services involved in the Smart House, specifying functionalities, methodologies, recommended standards and working practices that ensure convergence, interoperability and interactivity of multiple (and competing) products, applications and services in and to the Smart House.

The relevance of the Smart House Standardisation Initiative to eEurope 2005

The introduction of eEurope 2005 notes the interdependencies of "*services, applications and content*" on one hand and "*broadband infrastructure and security matters*" on the other, with each requiring the establishment of the other to provide secure business environment.

eEurope 2005 aims to resolve this by providing the citizen with eGovernment, eLearning and eHealth reinforced with a review of eBusiness legislation and the establishment of solid security systems for electronic communication, eBusiness and entertainment (the Cyber Security Task Force).

The Smart House Standardisation Initiative aims to support these objectives by ensuring that there will be codes of practice in place that will ensure that Service Providers, Government, Health, Learning and local community Services can interact with all the citizens of the EU. They will then be confident that their systems are communicating into homes with networks, systems and equipment that are constructed, installed and set up to known standards, are interoperable and interactive and will deliver predictable information and receive intelligible responses from any home in the EU.

It is the contention of the Smart House Standardisation Initiative that while currently the majority of connected (to the Internet with or without broadband) citizens are reasonably well informed and can manage the multiple inconsistencies and incompatibilities of current services and broadband delivery.

However, when the objectives of eEurope 2005 and beyond are achieved, every citizen will have access to a range of Broadband services and applications. However, many will be uninformed, many will be in demographic groups that find the use of new systems non-intuitive, many will be disadvantaged by disability, poor health, poor education and by old age.

Many of the population that the new services will serve will need equipment, systems and networks in their newly "Smart Houses" that are easy to use, interoperable, provide intuitive interaction, are secure, safe and conform to open and transparent standards. Furthermore, their specifications should be compatible with public procurement rules since a significant proportion of the "Smart Houses" of the future will be equipped with help from public funds.

Similar requirements obtain for the services and applications provided by Service Providers. For both equipment and service providers there must be structure in their provision if the objectives of eEurope 2005 are to be met.

The Codes of Practice that the Smart House Standardisation Initiative aim to put into place are aimed at providing this structure:

- They will specify a set of requirements to which installers, operators and manufacturers should refer.
- They will specify a set of requirements that service providers, service operators and network operators should refer
- They will reference minimum levels of security for systems in the Smart House and for communication and provision of systems to it
- They will reference Data Protection issues
- They will reference certain standards and specifications that should be used.

The Codes of Practice will be careful to specify in general and generic terms. It is felt to be very important that technology advance and new services should not in any way be impeded.

It is the contention of the Smart House Standardisation Initiative that the Smart House Codes of Practice will contribute strongly to the aims of eEurope 2005 and greatly assist the "*overall co-ordination of existing policies*" in the area of the user of services, equipment and applications in and the services to the Smart House. It will help ensure that incompatibilities between equipment, networks and services or any other impediment to the growth of services and broadband penetration are minimised. This will accelerate the objectives of eEurope 2005.

2. Objective

Accordingly, it is recommended that phase 2 of the Smart House initiative should be set up that will deliver:

A "code of practice" for all actors, systems, networks, protocols, applications and services involved in the Smart House specifying functionalities, methodologies, recommended standard and working practices that ensure convergence, interoperability and interactivity of multiple (and competing) products, applications and services in and to the Smart House.

This will be carried out in three integrated work packages as follows:

a) The creation of an open forum for Smart House activity that brings together all the actors, covers all the influences on the Smart House and collates all the relevant standards applicable to all present and potential future applications and services to and within the Smart House. This forum intend to meet at least once a year for the duration of the project as a seminar and working groups tasked with addressing particular issues. It is suggested that this forum shall be part of the remit of CENELEC TC205.

b) The preparation of a detailed report that assesses all sectors relevant to Smart House, the organisations and standards bodies active in these sectors, provide a "metamodel" for the Smart House. The report will recommend the parties that should be involved in the actions to be taken, including the identification of areas where standardization needs further work. It will be essential that it is mandated on all relevant standards bodies that there shall be co-operation in the form of Joint Working Parties, face to face working and attendance at meetings, in order to ensure this work (and the "Code of Practice" below) is fully inclusive of all the relevant standards that apply to and within the Smart House environment.

c) The writing of a consensus based "code of practice" that will define clearly the set of standards (protocols and open architectures, security imperatives and service delivery methodologies) that will inform the industry. This shall be in terms of minimum recommended requirements for trust, security, information integrity, quality of service, performance, revenue collection and payment, service delivery, interoperability,

description and abstraction (of services, applications and equipment) and emissions[1]. (Note: the many of the necessary standards are available or in process of definition. However, this activity will ensure that where discrepancies or conflicts between standards or where there no standards work exists for a perceived requirement, then the relevant bodies will be requested deliver remedies)

By bringing together the European Industry to create an agreed Smart House model and "code of practice" the probability is high that there will be a very positive impact on the European Industry development in the Smart House sector with concrete deliverables to the citizen of Europe.

3. Performance indicators

Participants

This Code of Practice calls for the widest possible range of participants since almost all organisations from the EU Commission to Consumer Bodies, Local Government to Industry, Service Providers to the End user will be affected by its conclusions and recommendations. Give that it is primarily set in the area of Home Electronic Systems it is right that CENELEC TC205 (and the WG responsible for Smart House) should be the prime movers of this work, but part of the work will be to ensure that all bodies that are likely to be affected by the output of the Code of Practice for Smart Houses should have the opportunity to be involved.

Timing:

The Code of Practice in needed urgently. The estimated delivery of this work will be November 2005. This will have given all those bodies that wished to contribute the time and opportunity to have done so and will have resulted in a balanced and acceptable document

Quantity:

There will be a number of progress reports and document drafts to ensure maximum information flow. There will be one Code of Practice for Smart Houses that will be recommended to the Commission.

Quality:

This work will be produced according to ISO 9001. It is likely to be required information to anyone involved in any work in the Smart House that involves electronics, white goods, A/V equipment, electrical systems and lighting, computers, networks and communication, telecommunications, sustainable energy management and local generation. This population will include Builders, Electricians, HVAC engineers, Lighting engineers, Networking and Computing systems engineers, Local government planners and building regulation experts, Architects etc… If this Code of Practice is accepted by the EU then the likely utilisation will be very significant.

Inputs:

It is recommended that this work requires a paid convenor and secretary to carry out the main drafting work, review liaisons and collate contributions. It is also recommended that Members of the Working Group reconvened to carry out the work will require a level of payment to meet their expenditure. The cost of this is outlined in the tables under Article 7.

The concrete deliverables are listed hereafter in section 5.

4. Working methods

Main Participants in this work.

1. Because there is a confluence of many actors in this sector, it is intended that this work shall be carried out under the aegis of CENELEC and under the control of the Technical Committee that is most involved in the Smart Home – TC205. CENELEC TC205 has a very complete picture of the many influences on the Smart

[1] This is not necessarily an exhaustive list and the report under Work Item D1.1. will deliver a definitive list.

House and is the correct body to ensure full inclusivity and carry out the work. WG 16 in TC205, "Standards for intelligent home and building / smart houses", was created and exists especially to do this work

2. WG 16 should be reinstated and given a proper mission for carrying out the work packages defined above and provided with the services of a chairman/convenor, a secretary/managing editor and two reporting experts funded at 100% of effort provided. Concerning the experts, it is important that these individuals should be independent consultants.

3. There shall be a number of expert WG members drawn from industry, industry associations and charged with covering particular areas and issues. These experts should receive part funding and for the work incurred in attending meetings of the WG and at forum meetings and necessary reviewing and editing work.

4. It is envisaged that the WG members shall be drawn from the European industry as well as the Euopean industry associations such as CENELEC cooperating partners (CECED,EURALARM, CECAPI, etc) and TC's, CEN, OSI/IEC, ETSI, etc… and wherever possible there_will be a cross membership of other Standards committees and initiatives such as TAHI, NGN@Home, Intelligent Living, TEAHA, OSGi, etc.., to ensure close collaboration and input from actual industry experience. Every effort should be made to ensure that standards work in associated areas and initiatives are kept informed of this work and that there is planned cross fertilisation.

5. It is expected that the managing editor and convenor would have a close liaison with other relevant standardisation and industry bodies and initiatives, such as CEN & CENELEC TCs, the "Architecture" and "Standards" WPs of TEAHA (EU FP6), ETSI TCs, the Technical WG of TAHI (UK DTI), ISO/IEC, etc… to ensure proper convergence of those European initiatives and standards work and ensure wide-spread dissemination of this European work.

6. A collaboration should be envisaged between TC 215 – concerning both infrastructure specification (system design) and installation techniques - and the Smart House initiative.

5. Deliverables, Actions and time tables

Year 1

- Reinstate TC205 WG16 with funded Convenor and Secretary at the Plenary TC205 (12-13 November) identify members of WG **[D1-0]**
- Review Conclusions and Recommendations of Final Report from Phase 1 of the Smart House work and carry out liaisons with initiatives and standards organisations referenced and others as necessary (November 2003 – February 2004).
- Prepare initial assessment draft report that outline areas of work and expertise required (Nov 2003 – February 2004). **[D 1-1]**
- Hold an initial Forum/Seminar in March-April 2004 assessment draft evaluation and prepare outline experts' report. **[D 1-2]**
- Report to TC205 at Plenary 10/11 May 2004. **[D 1-3].**
- Prepare full draft of experts' report for review before second Seminar/Forum (Autumn 2004) **[D 1-4]**
- Prepare outline for Code of Practice (*Headings, Sections, Expected content*) (by September 2004) **[D 1-5]**
- Carry out liaisons with initiatives and standards organisations (ongoing).
- Prepare **interim report** on progress for CENELEC/Commission (November 2004) **[D1-6]**

Year 2

- Begin work on "Code of Practice" draft report (October 2004).
- Hold second Forum/Seminar – agree/(any final changes to) experts report, prepare initial draft of "Code of Practice" (November 2004) **[D 2-1]**.
- Report to TC205 at Autumn Plenary (November 2004) **[D2-2]**.
- Issue first Draft of "Code of Practice" (March 2005) for comment by TC205 and other interested committees and initiatives **[D 2-3].**
- Report to TC205 Spring Plenary (May 2005) **[D2-4]** (*WG16 Meeting on day before Plenary*).
- Resolve issues and comments, and add any relevant input.
- Issue and distribute full draft CoP August 2005 for comment **[D 2-5].**
- Ratify CoP and issue to Commission (November 2005) **[D 2-6].**
- Prepare **final report** on progress for CENELEC/Commission (November 2005) **[D 2-7]**

It should be noted that the Code of Practice is not intended to be a standard, but a **recommendation** for methodologies, systems and standards to be used in all aspects of the Smart House.

Deliverable	Description	Milestone	Output
Year 1			
D1-0	Obtain timeslot in TC205 meeting to debate reinstatement of WG16. Appoint paid convenor and secretary (to be approved by CENELEC). Co-opt standing members of WG16. Agree provisional structure of work. Circulate to National Bodies to recruit additional WG members. Provide short report of agreed objective, appointments and agreed milestones	**30th Nov 2003.**	**Establishment Report. To CENELEC and Commission.**
D1-1	Experts Report of WG16 outlining and referencing research, liaisons and conclusions for work plan for completion of project. The report shall outline the expert contributions required to create the Code of Practice and identify the areas both in Standards organisations and from industry that will be necessary to deliver a useful Code of Practice.	**15th March 2004**	**Draft Experts Report to CENELEC, National Bodies and Commission circulated for comment and as an input for Forum**
D1-2	Hold Year 1 Forum (to include meeting of WG16). Invitation of delegates from NBs, Industry and the Commission. Set formal programme of work for the forum with reference to Draft Experts Report [D1-1]. This forum will inform the Draft Experts Report to make any substantive modifications and approve draft. Expected 50 Delegates for one full day. Commitments to be obtained from delegates to cover particular and specific aspects of CoP and gaps in Draft Experts Report	**23rd April 2004**	**Agreed Draft Experts Report to CENELEC, NBs and Commission. Agreement by specific delegates to carry out work on CoP**
D1-3	Provide Output report from [D1.2] to TC205 Plenary for comment and input. Provide short report on Meeting and TC205 input.	**May 15th 2004**	**Short Report to CENELEC, WG16, Liaisons, NBs and Commission**
D1-4	Receive outputs from delegated experts for inclusion in Draft Experts Report, Collate and prepare Final Draft of Experts Report	**August 2004**	**Final Draft Experts Report. Circulate for comment**
D1-5	Using Final Draft of Experts Report prepare outline Draft Code of Practice, Introduction, Sections and Headings	**Sept 2004**	**Initial Draft CoP Circulate for comment.**
D1-6	Prepare Final Y1 Progress Report for CENELEC, TC205, NBs and Commission outlining progress and achievements	**Nov 2004**	**Final Y1 Progress Report to CENELEC etc.**
Year 2			
D2-1	Hold Year 1 Forum (to include meeting of WG16). Invitation of delegates from NBs, Industry and the Commission. This forum will agree the Final Draft Experts Report making any minor modifications and approve for publication. The forum will Assess the Initial Draft CoP and Agree its Format and agree on final form of CoP and its contents. Expected 50 Delegates for one full day. Commitments to be obtained from delegates to cover particular and specific aspects of CoP and to provide input to it.	**Nov 2004**	**Agreed form of CoP Circulate for comment**
D2-2	Provide Output report from [D2.1] to TC205 Plenary for comment and input. Provide short report on Meeting and TC205 input.	**Nov 2004**	**Short Report to CENELEC, WG16, Liaisons, NBs and Commission**
D2-3	Receive outputs from delegated experts and prepare initial draft Code of Practice – circulate for comment	**March 2005**	**First Draft CoP circulate for comment**
D2-4	Report to TC205 and receive comments – Short report on Meeting and TC205 Input	**May 2005**	**Short Report to CENELEC, WG16 and Commission**
D2-5	Resolve issues and comments, Prepare full and final Draft of CoP .	**August 2005**	**Final Draft CoP circulate for comment**
D2-6	Resolve issues and comments and issue CoP for NB approval and agreement	**Nov 2005**	**Code of Practice for Smart Houses. Circulate for Comment**
D2-7	Prepare Final Report to CENELEC and Commission	**Nov 2005**	**Final Report.**

6. Background

The "Final Report" (of Phase 1) written in the context of the initial voucher of the Commission concerning Smart House CENELEC/ENTR/e-Europe/2001-03 shows a clear interest by many actors involved in systems, networks, protocols, equipment, applications and services for the Smart House. These include:

- Citizens, represented by the home based user of systems, equipment and services (User Groups ANEC, ETSI)
- Service providers, that provide services, applications, management and entertainment to home based users
- Government, in the delivery of e-agenda services to the citizen (Commission, Central Governments, Public Authorities, Local Authorities meeting targets for e-government services)
- Network operators, that deliver services to required qualities of service (User Groups ETSI,...)
- Equipment manufacturers, in many areas that provide the means for service delivery and applications within the home (represented by many industry bodies)

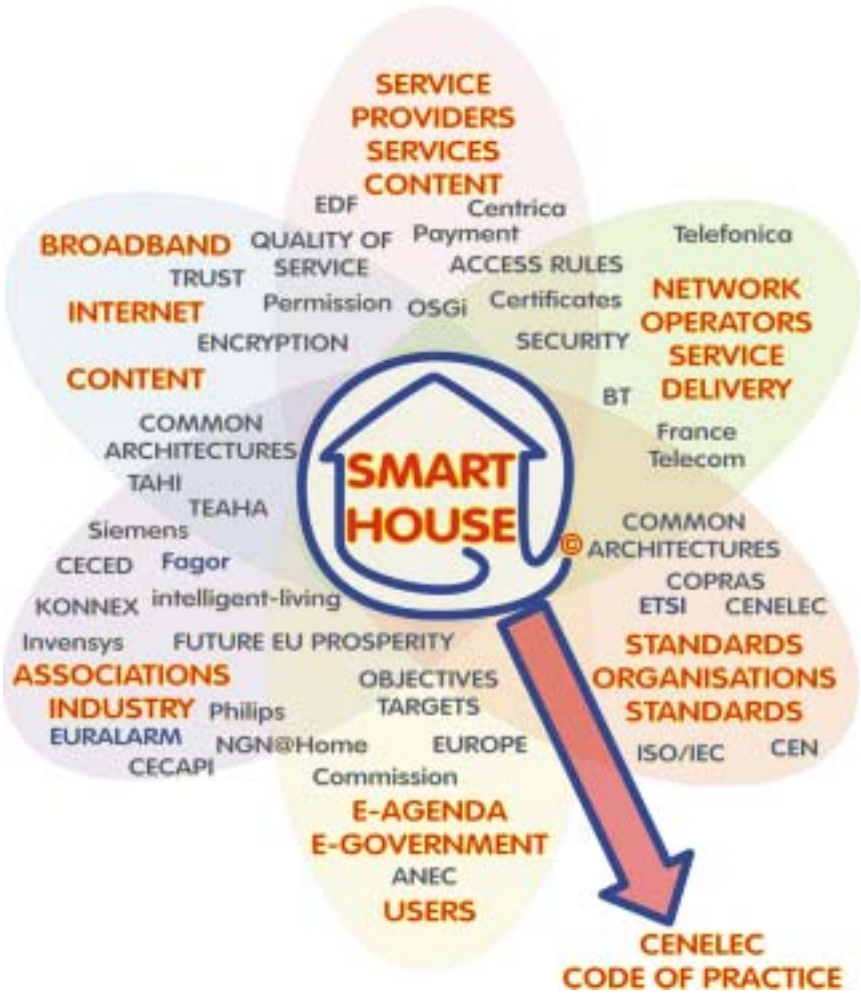
It is noted in the recommendations and conclusions of the "Final Report" an urgent need to provide an inclusive set of recommended standards and ensure collaboration with their relevant committees and experts, including CLC TC205, ETSI, DTV/DVB, Security OSGi and many others. Also noted is a need to provide references for relevant standards and technologies[2].

It is apparent that all of these actors have differing perspectives on the role of the Smart House, with both general and specific requirements for their sphere of influence in it. They may have differing emphasis on particular requirements, but are all aiming at a general requirement to co-exist (and interact) in providing their systems, services and applications in the Smart House, albeit, in many cases, on their own terms and conditions. The proposed Smart House activities will foster Broadband infrastructure development, build services that utilise Broadband and align the various commercial interests to ensure competitive delivery of those services.

Much standardisation work is complete or in progress in CENELEC, CEN, ETSI and ISO/IEC that is clearly relevant to the Smart House, the delivery of services to it and the systems and applications within it. There are many initiatives in progress whose experience and output will inform requirements for the Smart House. Some of these initiatives have declared aims of helping to set standards in their sphere of influence (TAHI, NGN@Home, intelligent-living.org, CECED, KONNEX, CECAPI, EURALARM and the TEAHA project (under EU FP6 RTD)). It is also apparent that much of this activity, of necessity, is being carried out in relative isolation and does not necessarily address cross sector objectives or the effective use of Broadband.

There is a clearly perceived requirement for a cross sector "code of practice" (in effect a standard of standards) that informs the actors in the Smart House sector[3], the appropriate standards that they should use in relation to any activities involving the Smart House.

[2] Final Report, Ch 7, Conclusions and Recommendations: paragraphs - a, b, c, f, g, and h
[3] The actors in the diagram (next page) are not in any way an exhaustive list and the diagram is intended for illustration only



The industry input into Phase 1 of this project demonstrates clearly that there is a high level of interest in the Smart House and, in many cases, a willingness to address these concerns proactively. This is complementary with the EU Council Conclusion of 1 March 2002,[4] of a need to establish appropriate sets of specifications [pre-standards] to unify the industry efforts into one coherent direction.

The Final Report of Phase I confirms the necessity for additional and substantial work to address the difficulties resulting from the open process approach into such complex environment. The CENELEC Technical Board at its July 03 meeting took stock of the situation and decided to recommend a “Smart House Second Phase”. The second phase work methodology and objectives are designed to address this recommendation.

It is apparent that without a consensual European “code of practice” for Smart House, there will be a major barrier to market growth in this sector caused by an uncertainty that multiple competing products, services, networks and systems will interact reliably, safely and securely in the home.

[4] OJ 2002/C66/01 of 15.3.2002