CEN

WORKSHOP

AGREEMENT

CWA 15974

May 2009

ICS 35.240.15; 35.240.80

English version

Interoperability of the electronic European Health Insurance Cards (WS/eEHIC)

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Ref. No.:CWA 15974:2009 E

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Foreword

The production of this CEN Workshop Agreement (CWA) "Guidelines and recommendations for standards for an electronic European health Insurance Card" was approved at the CEN/ISSS Workshop eEHIC (electronic European health insurance card) kick-off meeting on 24 April 2007.

The CEN/ISSSS Workshop eEHIC is reporting to the Ad hoc group of the Administrative Commission for Social Security for Migrant Workers (CA.SS.TM) comprising representatives of Member States and coordinated by the European Commission Directorate General Employment.

The document has been developed through an Expert Project Team and the collaboration of contributing partners participating in CEN/ISSS Workshop eEHIC.

The following types of organizations took active part in the CEN/ISSS Workshop eEHIC: national health ministries, social insurance agencies/bodies, research centres, consulting organization, companies providing health cards.

This document was endorsed at the plenary meeting on 10 March 2009 and electronically with an electronic round which ended on 30 April 2009.

The list of organizations which supported the CWA are:

Build in Europe, Belgium
CMU - Centre for International Reimbursements, Czech Republic
DIFI – Norvegian Agency for egovernment, Norway
DVKA German Liaison Agency Health Insurance International, Germany
eHCC (eHealth Competence Center), University of Regensburg Medical Center
Estonian Health Insurance Fund
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Gematik, Gesellschaft für Telematikanwendungen der Gesundheitskarte mbH, Germany
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MedTel o.p.s., Czech Republic
SVC GmbH - SV-Chipkarten Betriebs- und Errichtungsgesellschaft (SVC), Austria
GIE SEsam Vitale, France
NAV – Norvegian Labour and welfare administration, Norway
NFZ – Polish National Health Fund, Poland
Philip Rutherford Brown Consultant, UK
State Patients' Fund at the Ministry of Health, Republic of Lithuania
ZZZS –The Health Insurance Institute of Slovenia, Slovenia
UK governement, Department of Health
Veneto Region, Italy
VEKTIS, The Netherlands
VIDAVO, Greece
Wijnsma Service, The Netherlands

In addition, the CWA has been supported by the NetC@rds project (EU IST FP6 project).

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Comments or suggestions from the users of the CEN Workshop Agreement are welcome and should be addressed to the CEN Management Centre.

Introduction

0.1 Background

The European Health Insurance Card (EHIC), which replaced the paper forms E111, E110, E 128 and partly E 119 in its present phase, is eye-readable only. This plastic card was designed as a first step towards a full-blown electronic system where patients, healthcare professionals and social security institutions can communicate without paper in cross-border situations, in the same way as they would within a single country. According to regulation 1408/71, all persons insured under the legislation of a member state are entitled to healthcare during a temporary stay in another member state. The EHIC certifies this entitlement.

From the beginning of the introduction of the EHIC an additional step was foreseen[1]: moving to a version of the card that can be read electronically. The Administrative Commission for Social Security for Migrant Workers (called CA.SS.TM) established a first Ad-Hoc Group to work upon common principles and starting points for further work on the introduction of the electronic European Health Insurance Card (eEHIC).

In parallel, the modernisation of EC Regulation 1408/71 led to the adoption of a new EU Regulation 883/04 which, in paragraph 1 of its Article 78 – Data processing, stated that "Member States shall progressively use new technologies for the exchange, access and processing of the data required to apply this Regulation and the Implementing Regulation. The Commission of the European Communities shall lend its support to activities of common interest as soon as the Member States have established such data-processing services". Step-by-step, this article led the CA.SS.TM, with the support of the European Commission, to launch a project for the creation of an Electronic Exchange of Social Security Information infrastructure (called the EESSI project). At the time of issuing this document (spring 2009), the deployment phase of that infrastructure is just starting.

The main features of an electronic EHIC will be:

- it will carry in electronic form the same dataset as is defined by the data printed on the outside of the EHIC;
- it will be read electronically in the premises of Health Care Providers (general practitioners, pharmacists, hospitals, dentists and other health related practitioners) equipped with appropriate technology (card reader and workstation with a computer program able to read from the card); and
- its validity as well as the entitlement of the card holder could, under certain conditions and depending on the Member States, be verified on-line.

The work of this Ad Hoc Group led to the drafting of a Report (reference 340/06 REV) that was unanimously adopted by the Technical Commission in its meeting of 13 June 2007.

The approach proposed by the European Commission was flexible and progressive, taking into account the diversity of systems and requirements in the Member States and the CA.SS.TM agreed

[1] See the Communication from the European Commission of 17 February 2003 concerning the introduction of the European Health Insurance Card (COM(2003)17 final)

that "The national situations, the card projects in particular, will frame the development of the eEHIC" [2]. Therefore, in application of this principle, the CA.SS.TM later decided that[3]:
"The following alternatives are possible for each Member State:

1) Staying with the EHIC system;
2) Issuing an eEHIC (that might be a brand new national card or an existing card);
3) Adapting the healthcare professionals' infrastructure for reading eEHIC issued in other Member States;
4) Issuing an eEHIC and adapting the healthcare professionals' infrastructure for reading eEHIC issued in other Member States."

The non-electronic EHIC will therefore be allowed to remain in full use all over Europe even after the eEHIC has been introduced.

In order to provide the state-of-the-art technical standards related to smart cards, card readers, communications, necessary for implementing the eEHIC and aligned with other micro-processor card activities in Europe, a CEN workshop was established with a view to having by early 2009 a proposal for the technical specifications of the eEHIC system. This specification is the (normative) result of that Workshop.

The starting point for this specification is that an eEHIC is conceived as a Smart Card. This is clearly derived from the fact that it cannot be a purely electronic device, but must also be able to serve in exactly the same way as the existing plastic EHIC; in other words it must be usable as an eye-readable plastic card as defined by Decision 190 of CA.SS.TM. Solutions alternative to smart cards were to be excluded as out of the scope of the CEN workshop.

Smart card interoperability in general is a key requirement for developing the Information Society, especially as citizen mobility around Europe increases. This requirement is strongly supported by two factors:

- The growing use of smart cards as enabling tokens for products and services emanating from the Information Society;
- The usefulness of smart cards in the creation of an inclusive society by informing ICT applications and services of the requirements profile of the Card Holder.

An organisation wishing to deliver services by means of a smart card enabled system may choose to invest in the issuing of its own smart cards and in the installation of its own equipment and provider network, or it may choose to share resources with other organisations. This specification serves both alternatives, i.e. creating a "new" eEHIC Smart Card or sharing an existing Smart Card (e.g. ECC or national health (insurance) card) infrastructure. The effective and efficient sharing of resources among different organisations for service provision to the end user is what is intended in this specification by the term interoperability. In practice that would mean that adding an eEHIC function to an existing smart card, based system is fully supported by this document.

[2] As stated in the CA.SS.TM. note 163/05REV on "Common principles and starting points for the creation of the eEHIC (not published).
[3] As stated in the CA.SS.TM. note 340/06REV titled "Report on the eEHIC System".

The resources shared in an interoperable environment using smart cards may include, as far as the eEHIC is concerned:

1. the cards themselves: This would mean using one smart card for the purpose of eEHIC as well as for other purposes (like e.g. an eID or a citizen card)
2. terminals (workstations) supporting card readers with computer programs able to access smart cards (this could e.g. be a workstation already in place for use with a national health professional card)
3. data networks and network nodes used by Healthcare (Service) Providers
4. the issuing institute citizen database
5. the clearing institute insured database
6. data and information
7. card functionality, e.g. cross-platform use of authentication functionality (depending on organisational acceptance of foreign platform credentials)

The collective use of these resources for improving service delivery requires collaboration between Service Providers, Card Issuers and Card Acceptors as well as administrations or other regulatory bodies. This specification deals only with data and information (including metadata as defined later in the document). The other elements are left under the responsibility of the Member States that will implement an eEHIC system, coordinated at European level by the CA.SS.TM.

The CEN workshop worked in two Phases:

- The first phase (Inventory) was a fact finding exercise. A report, validated by the Workshop, containing the list of available or required standards with a review of their completeness and identifying the necessary specifications, was available in September 2007, It was adopted by the Technical Commission on December 2007. As reported there, items 1 to 5 of the list above are fully covered by the identified standards in the report and no further specifications are required, serving in parallel this way the eEHIC technological neutrality mandated by the EU policies and directives. In particular for point 3 we note that should the eEHIC be used in online mode for accessing, from abroad, data and services located in the member state where the patient is insured, then the cross-border data exchange platform is provided by the electronic exchange of social security information (EESSI), which will enable all public administrations to exchange electronically social security data on mobile citizens, such as tourists, workers, job seekers and their families.
- The second phase (Standardization) started in January 2008 and produced this document.

0.2 Purpose of the specification

The way for Member States to join in the interoperable use of smart cards as eEHIC is to run their schemes in an 'open' way in the following sense. They are based on generally accepted agreements like this document, are not dominated by one single party or supplier of infrastructure components, and are accessible to all organisations that wish to participate.

The CEN eEHIC workshop therefore agreed[4] on a number of guiding principles for this document that include the following items:

1. The basis of the work will be the well-known chipcard standards (ISO/IEC 7816 series).
2. The definitions of the HIC-related standards defining HIC content (ISO/IEC 21549 series) are used because they already closely reflect the EHIC dataset.
3. The workshop strongly supports the use of the Unicode character set where possible. Furthermore, the members of the workshop suggested applying a multiple storage approach for the card-holder names and that acronym of the competent institution should probably be treated in the same way. The intention was to comply with the current EHIC dataset as defined in Decision 190 and at the same time support openness towards possible future developments. Names in the EHIC dataset could thus be stored in at least three different formats:
    a. Exactly as in Decision 190 (Latin-1 – Latin-4) [mandatory]
    (transliterated if necessary)
    b. As in home country (Unicode has also Greek and Cyrillic) [optional]
    (no transliteration needed)
    c. ASCII (ISO/IEC 646) as in passports and like documents [optional]
    (transliterated if necessary)
4. The Workshop supports storage of data on the card in binary form (ASN.1) rather than in XML format. The XML format consumes much more storage space and data can be easily converted into a standardized XML format after being read out of the card.
5. In order to facilitate read-out from "new" cards as well as from existing cards that do not support the standardised storage format, the workshop is in favour of the so-called "metadata approach". This means that applications use metadata (machine readable card capability descriptions) when accessing an eEHIC. The interoperability framework is provided in this case by the ISO/IEC 24727 series. For data storage interoperability (read/write/update of eEHIC data) it is strongly recommended that the card edge should conform to the CEN/TS 15480-2 specification at least with contact physical interface.
6. SOAP messages should be used for end to end communication. This makes clear sense as EESSI will be using them anyway.
7. In addition to the above, the workshop supports the approach of securing the national and EESSI components independently and channelling international information through EESSI.
8. The document provides an authentication mechanism for secure home Member State database access

Thus, this specification defines an open solution that can support the use of different types of eEHIC smart card, ranging from single function cards restricted to EHIC usage to cards that can be used for access to multiple applications at different types of system terminals. The solution relies on the use of a set of metadata (held on the smart card or in a separate file) and defined in this document. The eEHIC dataset definition, together with methods for accessing the information on the smart card and sharing the information throughout the network, form this specification.

[4] Minutes of the CEN/ISSS eEHIC Workshop of 31st January 2008