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BioHealth – Encouraging the Use of eHealth Security and Identity Management Standards

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Abstract

Shared care and cross-border interactions require a reliable and stable framework based on the application of standardised solutions. These are often not sufficiently known, diffused and not implemented. The EC funded project BioHealth aims to raise awareness on eHealth standardisation, to inform on security standards and to facilitate their practical implementation. It also evaluates socio-economic and cultural aspects concerning eHealth with particular reference to the introduction of emerging technologies such as biometrics and RFID.

Keywords:

eHealth, security, standardisation, id management, biometrics

Introduction

Major social and economic changes are presently taking place in Europe. Thus the mobility of the citizens poses a major challenge on a continent which is still divided into many different regions with differing individual healthcare solutions, reimbursement systems and legal and ethical backgrounds. In many European countries the traditional social services are being linked to health services. Technological advances offered by new approaches, e.g. telemedicine, ask for new -international- solutions. The increased accessibility provided by eHealth solutions implies a growing need for security. Facilitating patient mobility -one of the goals of the Lisbon strategy Communication to the Spring European Council: "Working together for Growth and Jobs: A new Start for the Lisbon Strategy", Brussels, 2 February 2005, COM (2005) 24.- asks for standardisation. Security standards are high on the agenda. Identity management (IdM) and biometrics are to support the current deployment of reliable and interoperable security solutions. However, the acceptance, use and implementation of standards do not meet expectations.

Methods

Standardisation initiatives in eHealth

eHealth systems must be secure and privacy compliant at all times. They have to be based on trustworthy and reliable communication and application security services and they have to be failsafe and available at all times Blobel B: Analysis, Design and Implementation of Secure and Interoperable Distributed Health Information Systems. Series "Studies in Health Technology and Informatics" Vol. 89. IOS Press, Amsterdam 2002.. Cross-border solutions must make sure that the technical solutions are interoperable, but comply -at the same time- with the national legal and cultural requirements. The privacy and data of those involved needs to be protected. Standards facilitate interoperable solutions. However, almost each European country has its own national standardisation body issuing national standards.

The European Commission has been supporting standardisation activities for many years. CEN, the European Committee for Standardisation, was founded in 1961. The major activities of CEN/TC 251 -responsible for Health Informatics- standardisation are currently directed to "EHR communication" and to updating "Secure User Identification - Strong Authentication Using Micro-processor Cards". CEN/ISSS provides market players with a comprehensive range of standardisation services and products. Focus Groups report on the current standards' environment in a particular area of public interest to provide recommendations on necessary standardisation work for the future. CEN/ISSS eHealth Standardisation Focus Group investigated standards' requirements in the area of eHealth in support of "eEurope 2005 Action Plan". Presently main priorities of the European standardisation activities are the harmonisation of identification and authentication of the European citizen. Other important Standards Developing Organisations (SDOs) are -amongst others- ITU (International Telecommunication Union) and ETSI (European Telecommunications Standards Institute).

In some countries, international standards range first, followed by national ones. Established in 1998, ISO/TC 215 - Technical Committee Health Informatics of the International Standards Developing Organisation ISO- has been focusing on eHealth-related standards activities. Some important standardisation activities are currently "Privilege Management and Access Control" and "Public Key Infrastructure". ISO/TC 215 liaises with several other organisations like CEN or DICOM. ISO/IEC JTC1/SC17 - Joint Technical Committee on Biometrics- hosts working groups on ePassport, driver license and health. For other international organisations and more details see BioHealth

Consortium: Deliverable 2.1: Guidelines on the standardisation activities, their implementation and how to gain maximum benefit – available after registration at http://biohealth.gsf.de..

Challenges

eHealth with its many stakeholder groups strongly requires standards which procure tangible benefits in order to be accepted by the users. This, however, asks for those most affected -citizens, patients and healthcare employees- to increase their influence on the SDOs. Therefore, awareness -achieved by a respective level of information, education and training measures- are vital. Standards or even information thereof are mostly difficult to access; users are often not aware of their existence. Decision makers as well as Small and Medium Enterprises, however, depend on this information for writing tenders, or for developing interoperable systems. The varying and often competing standards at the different levels pose an additional problem. Missing legal regulations at European level hinder well proven national initiatives to successfully being transferred to European level.

BioHealth

BioHealth (Security and Identity Management Standards in eHealth including Biometrics) aims at promoting, in a European framework, the diffusion, knowledge and understanding of security standards in the area of eHealth. It especially emphasizes privacy rules, id management and implementation of biometrics as a Privacy Enhancement Technology.

Many people consider information about their health to be highly sensitive and to deserve strong protection. In shared care several health professionals may be sharing one patient record across differing health systems in different institutions and even across borders. Information associated with identities may change over a period of time. Adequate IdM and systems that interact with other information systems are required. Biometric technologies are a key technology for secure identification and for personal verification. Emerging technologies like radio frequency identification (RFID) hold the promise of improving patient care. Via RFID chips medical drugs in hospitals can be tracked. They can be used to follow up a patient in an emergency setting or to monitor a person and enable him/her to continue living at home. Tagging and biometrics raise a number of significant legal and ethical questions. Differing legal regulations cause additional problems. BioHealth addresses these issues.

BioHealth aims to raise awareness, confidence and acceptance among the users of security technologies by providing information on standardisation activities, standards and related subjects. The BioHealth portal serves for information exchange, coordination and community-building. It is open to contributions from the various stakeholder groups. Policy makers are contacted to advance convergence of the standardisation policies in eHealth on a European level. Presently, eHealth security standards are being analysed and optimised for use by the stakeholders.

Discussion

Changes caused by the introduction of a new system have often been underestimated. eHealth requires the support of those involved. Systems have to be secure and reliable at all levels and at all times. This will decrease perplexities and build the necessary trust to accept and support eHealth. Standardised and interoperable solutions are a necessity. Strong authentication methods have to ensure that the information can only be accessed by the entitled person. New technologies like biometrics or RFID are on the verge of being introduced. Their relation with privacy issues is a very delicate issue and any objection raised in terms of threatening data protection has to be taken seriously. Standards, on the other hand, have to be known, they have to be understood, they have to be appropriate and affordable.

Conclusion

eHealth provides solutions to 21st century healthcare. Interoperability is a necessity. This is facilitated by standards. Though significant work has been done on the required standardisation in recent years, many of the results are not known to the user nor has the standards' usability been fully evaluated. BioHealth informs users on security related standardisation in eHealth. The project's work focuses on standards' analysis, the security of data and identity management, and the legal, societal and ethical issues concerning IdM, biometrics and the new technologies related to eHealth security. BioHealth will support the implementation of standards by setting up guidelines. A website [http://biohealth.gsf.de] is available as a first step to an open platform for those interested this topic. Thus BioHealth intends to make a sounding contribution to eHealth in Europe.

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