eIdentification – Renewable Regulated Electronic Administration Services

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Abstract
Since 2005, Hungary has a comprehensive central identification solution. The Client Gate is capable of identifying citizens for any public authority that connects to it. The Client Gate is very popular and useful tool for identification among citizens for electronic transaction. Today approximately 2.4 million clients have a Client Gate account. However, many have an aversion towards the online administration. They can choose the personal administration or they can use their mobile phone for administration.

Since the beginning of 2016, the new electronic ID card integrates personal identification, social security and tax identification information which is also suitable for providing an electronic signature. These two new identification options are available to citizens, including the newly introduced national eID card, as well as the Partial Code Telephone Authentication. A half years about a million new eID card has been claimed for the citizens. However, the telephone authentication is less popular.

In Hungary, the new electronic administration is based on the "Regulated Electronic Administrative Services" (Hungarian short name SZEÜSZ) since 2012. The new central identification solution, the Central Authentication Agent as one of the Regulated Electronic Administrative Service has been launched that supports the use of different electronic identification and authentication services. Now the usual Client Gate has been changed to the Central Authentication Agent in Web Assistant application to implement full electronic administration procedures.

The aim of the study is to present the experience of the various methods of identification by comparative analysis.

1. The basis of identification and authentication

In connection with the technical innovations of the 21st century the demand for electronic administration became high both in the private and the public sector.

Electronic administration is the management of the official administrative cases by the way of electronic means. Electronic administration means also the complexity of the working sections of the management from the view of formality and from the view of content as well. [2]

According to the eEurope 2002 action plan [13] to measure the expansion of electronic public services a set of 20 most frequently used electronical service and their development level (on a 1-4 scale) was defined.

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The levels of e-service development:

- 1st level: online information sharing
- 2nd level: one-way connection (downloadable electronic forms for the administration processes)
- 3rd level: interactivity (online filling of forms, or the forms are downloadable and after filling uploadable)
- 4th level: comprehensive (transaction included) service (the whole administrative process is digitalised including payment)
- 5th level (since 2007): personalisation (automatized, proactive, client oriented, customised services). [7]

Because rights and obligations are connected to the administrative process, from the 3rd level of the electronic administration, the users' (clients and administrators) identification is required. Till a certain degree, the users are obliged to identify themselves and the documents used during the administrative process with credibility.

Authentication and identification are closely related terms therefore their interpretation is diverse in the professional literature.

„Identification" of a person: the process of obtaining information about whom the requester claims to be without considering the "trustability" of this information. [8]

„Authentication" (of a person): the provision of assurance of the claimed identity of a person. [8]

„Electronic identification" means the process of using person identification data in electronic form uniquely representing either a natural or legal person, or a natural person representing a legal person. [10]

„Authentication" means an electronic process that enables the electronic identification of a natural or legal person, or the origin and integrity of data in electronic form to be confirmed. [10]

In the traditional administrative process, the circumstances of visual identification and authentication are guaranteed. The content of a written claim is appropriate for identification and authentication of a signature. In case of personal appearance an official card is used for identification purposes. During electronic administration, different kinds of electronic identification and authentication methods and their combinations can be applied.

- Knowledge based: user name and password (or PIN code)
- Tool-based: some type of identification tool is needed (ex: key, card, tokens)
- Characteristic based: the recognition of the users' personal characteristic (ex: fingerprint, retinal images, facial features)

One secure way of identification is the two-step verification system. It could be for example the combined use of a card and a PIN code; or after typing the user name and password to authenticate the user has to enter a unique code which is sent via SMS or email.

In the electronic administration processes identification requires the scrutiny of the received information.

Identification is a service as a result of which the authority that requests the identification, for the purpose of its tasks with the level of adequate safety, becomes sure that the subject of the identification is the same person with the client requesting for identification. The result of the identification is the notification on or confirmation of the information which ensures adequate level of safety and which is appropriate for the unambiguous identification of the person requesting for his or her identification. [3]

2. Changes in the legal environment

Electronic administration and identification significantly progressed over the past 15 years. The following section provides a brief overview of the major milestones.

2001 Electronic signature based model

In early 2000, the first phase of the e-government realization the main goal was the establishment of a unified government network (called Electronic Government Backbone Network) and the development of a governmental portal (www.ekormanyzat.hu). In the initial period the governmental website was mainly used for distributing information and offer downloadable forms. Starting administrative processes were only possible after registration and just in a limited spectrum for the clients.

The legal frames of authentic electronic signature were created by the Act XXXV. of 2001 on electronic signature implementing 1999/93 EC directive.

For the purposes of the law *"electronic signature" means data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication.* [9]

The "Advanced electronic signature" means an electronic signature which meets the following requirements:

(a) it is uniquely linked to the signatory;

(b) it is capable of identifying the signatory;

(c) it is created using means that the signatory can maintain under his sole control; and

(d) it is linked to the data to which it relates in such a manner that any subsequent change of the data is detectable. [9]

Alongside document authentication electronic signature could be used for personal authentication as well, but this form of its' use is not widespread.

2005 Establishing the legal basis of e-government services

From the mid-2000s establishing the legal environment for e-public services and centralising the IT background became vital. The purpose of the newly formed Central Electronic Services Network was to create the operating framework for electronic administration.

Parts of the Central Electronic Services Network:

- Electronic Governmental Network
- Government Website (www.magyarorszag.hu)
- Identification service (Client gate and Office gate)[3]
- Central customer service
- Services (for example Safe electronic document transmission service) and availability of electronic administration

The Act CXL. of 2004 on the General Rules of Administrative Proceedings and Service made positive changes by supporting the electronic administration. The law preferred the usage of the electronic signature (sending electronically signed documents), but in the daily practice the Client Gate authentication had a greater role.

2009 The legal regulation of electronic public services

In 2009 a new model has been introduced for the electronic public services by the Act LX of 2009 on electronic public service. Electronic public service is a service, which is available without restriction, provided by the administrative authorities and the other providers through the Central System by way of electronic means.

As a general rule, all public administration organizations have to communicate and provide their electronic public services through the Central System. In the Central System, the main form of client identification is the Client Gate.

2012 The introduction of the Regulated Electronic Administration Services (short name: SZEÜSZ[4])

With the beginning of 2012 the electronic public administration became renewed. The previously claim (document between clients and authorities) based administrative processes has been replaced by the Regulated Electronic Administration Services. The new model is more flexible and client oriented, it is targeted to enforce the clients' rights and needs.

The amendment of the Act CXL of 2004 (especially its Chapter X on Electronic administration) established the legal preconditions for eGovernment services. The so called regulated electronic

[3] The Client Gate is a free electronic authentication service. The citizens (Client Gate ID) and public administration organizations (Office Gate ID) use username/password authentication.
[4] Alias: Regulated Electronic eGovernment Services (REeS)

administration services were introduced. Further rules can be found in the following government regulations:

- 83/2012. (IV.21.) Government decree on regulated electronic administration services and the services compulsorily provided by the State.

- 84/2012. (IV.21.) Government decree on assignment of certain organisations related to electronic administration.

- 85/2012. (IV.21.) Government decree on the detailed provisions regarding electronic administration.

The services include authentication service. Based on the model the used authentication method is subjected the users' administration regulation.

2016 Electronic administration as a natural choice

The Regulated Electronic Administration Services have been formed by the end of 2015 and it led to the adoption of a specific overall electronic administration law. This new (Act CCXXII of 2015) law will gradually enter into force until 2017 and replace the existing legal texts.

For the clients, especially important the right (not obligation) to electronic public administration. From 2018 for the businesses, clients' legal representatives and authorities in client position are obliged to use electronic public administration processes (if the electronic administration is applicable).

The main parts of the electronic administration law:

Part 1: Introduction (interpretation of definitions)

Part 2: General rules for the relationship between the client and the public administration body (among others the regulated electronic administration services)

Part 3: The IT collaboration of the electronic administration and other bodies (interoperability rules)

Part 4: Trust services (based on the eIDAS regulation)

As of 1 July 2016, the Act CCXXII of 2015 law repeals - among others - Act XXXV of 2011 on Electronic Signature, so the rules of electronic signature shall be found in the eIDAS Regulation and the part of Trust services from that date. The 83/2012. (IV. 21.) Government decree was replaced by the 451/2016. (XII. 19.) Government decree on the detailed rules of electronic administration.

3. Identification in the Regulated Electronic Administrative Service model

The Regulated Electronic Administrative Services, as building blocks of administration are designed to be able to make contact and share data with each other if it is necessary, more over they are compatible with the authorities' information systems and work securely.

Regulated Electronic Administrative Services (called “SZEÜSZ”) are the following:

- electronic authentication service
- secure delivery service
- any service which can be used to offer electronic administration solutions and are in harmony with the requirements stated in the law on electronic signature
- other electronic services regulated in the 451/2016 (XII. 19.) Government decree [1]

The following services are provided by the Government:

- electronic identification for natural persons
- secure delivery service
- governmental authentication service
- other electronic services regulated in the 451/2016 (XII. 19.) Government decree

The below listed Central Administration Services (named “KEÜSZ”) are provided by the Government through specific service providers appointed by law:

- catalogue on client’s instructions on administrative services (short form Instruction Catalogue)
- record of document validity
- electronic payment and accounting system
- identification based document authentication
- central arrivals agent
- central delivery agent
- periodical client notification on electronic administrative acts
- conversion of paper based document to an authentic electronic document
- conversion of electronic document to an authentic paper document
- central authentication agent
- personalized administration interface
- form submission supporting service

- central document authentication agent (new service)
- electronic form for general purposes (e-Paper, new service)
- linking register

Identification service has a principal role; this function appears in various levels. Electronic identification can be:

- Regulated Electronic Administrative Service (called “SZEÜSZ”)
- identification by an electronic tool described in the eIDAS Regulation
- other forms of identification regulated by the electronic administration service provider

Identification services defined by the law are:

- electronic identification service by electronic identity card containing a storage unit (chip)
- Client Gate
- Partial Code Telephone Authentication

Every client who obtain electronic signature can register for electronic identification service by using other type of electronic service or by personally at the authorities. The Central Client Registration Index (abbreviated as “KÜNY”) help in the clients’ authentic identification. The clients are able to determine which way (electronic, postal or both) they want to keep contact with the authorities and what type of identification methods they prefer, these instructions are stored in the Instruction Catalogue.

In 2016, a new central identification solution, the Central Authentication Agent (CAA) has been launched. This solution supports the use of different electronic identification and authentication services, including the already existing Client Gate and the newly introduced national eID card, as well as the Partial Code Telephone Authentication. Every client (registered in the “KÜNY”) and e-administration service provider can access to governmentally approved identification services through the Central Authentication Agent. The CAA service provides a unified interface for the different identification services including the services provided by the Government. Nowadays clients can choose between the Client Gate or the Partial Code Telephone Authentication, introducing the eID to the system is under development.

3.1 New Personal Identity Card (eID card)

The main functions of eID card:

- ePASS: electronic travel document function
- eID: electronic identification function
- eSign: electronic signature function.

The chip also stores the citizens' Tax ID Number and National Health Fund ID Number electronically. The eID function of the card is secured with a 6-digit PIN, and the optional eSIGN function with a 7-digit PIN.

The Governmental Certification Service Provider (Certification Authority), offering both qualified and non-qualified (advanced) electronic signature and time stamping services to government organizations and institutes. [17]

Since 2001 only a moderate increase was visible in the usage of the electronic signature, surprisingly this trend changed in 2016, when the number of users shoot up. However detailed information on the usage of electronic signatures is not available, both the number of certifications and documents shows increase.

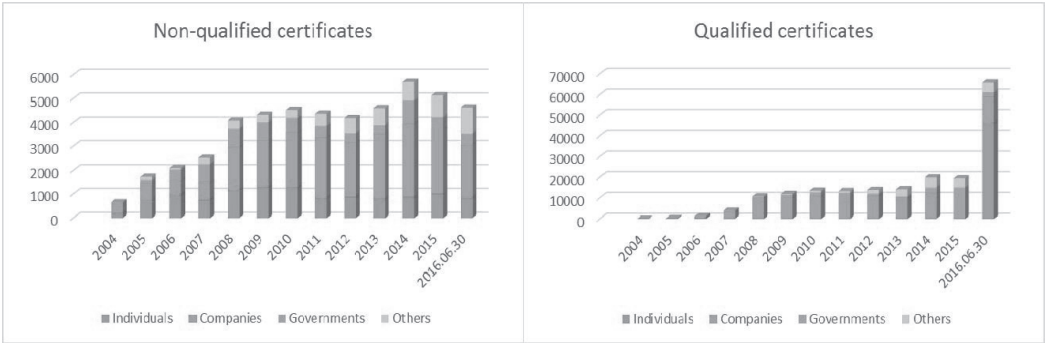

Figure 1: Number of certification in Hungary
Source: [18] (own edit)

In the 1st half of 2016 the number of qualified certifications was the triple than the previous year's. This increase is noteworthy in the case of private persons (In 2015 the data is 62, but in 2016 it is 46003). [18]

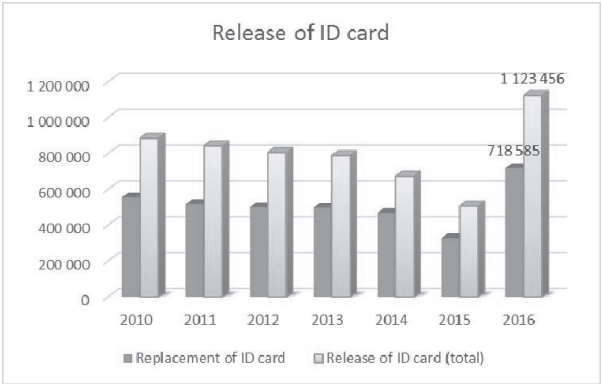

Figure 2: Release of ID card in Hungary
Source: [6] (own edit)

The trends on issuing certificates also represents the new eID card's popularity. [6] During January 2016, in the first month after its introduction, 133 000 new eID cards have been issued by the Hungarian authorities, out of which 51 000 includes the biometrics necessary for the optional

ePASS functionality and 19 000 including the digital certificate needed for the eSIGN function. [12] During the 1st ten months, more than 60 thousand persons (about 6%) required e-signature. [14]

3.2 Client Gate

Client Gate is the official electronic identification and authentication system of the Hungarian government since 2005. It enables the users to interact with electronic public administration providers with a single entry. Any natural person (irrespective of nationality) over 14, has right to apply for a Client Gate account. Those under the legal age has only access to a restricted circle of services (ex. process of application for higher education). Client Gate account can be created personally (ex. at the government windows) or electronically with the new eID. [5]

The person applying for new Client Gate account has to identify himself (with an ID card, passport or driving licence) and provide some personal data, such as identification data, nationality, email address. A client can have more than one Client Gate accounts, the 1st is free of charge. [15]

Identification used by Client Gate is a pair of username and password (knowledge based identification). where the password is valid for 2 years. A storage service is connected to every user account, it can be used to download, upload or store official forms and document. This storage service will be linked to the other identification and authentication services in the future. If no other identification method is connected to the Client Gate, its identification process is weak.

By the end on 2016, 2,5 million registered clients had Client Gate, yet the number of active users is possibly lower. For example, the application to higher education needs client gate authentication, so many young people sign up, but later they do not use the service.

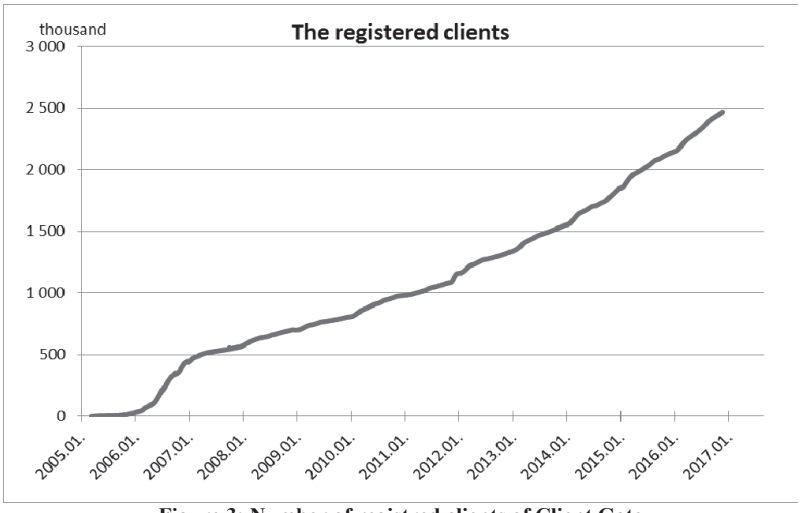

Figure 3: Number of registred clients of Client Gate
Source: [16], own edit

The most used services by Client Gate:

1. Tax and custom services
2. Communication web host
3. Register of the Land Office
4. Register of the social security services
5. Tax declaration

3.3 Partial Code Telephone Authentication (PCTA)

The Partial Code Telephone Authentication is a newly introduced identification method which let clients to solve certain public administration cases on telephone by using Governmental Client Line (clients have to call 1818). Besides telephone identification the service makes identification available through the Internet, it quickly became the alternative solution of the Client Gate. This service targets those citizens who prefer modern solutions to handle public administration cases, but has no or limited IT background.

The system generates an 8-digit long numeric user ID and a 6-digit long numeric password for the registered clients. During the telephone identification process 3 randomly selected digit has to be given from the password by the client, but in the online identification the person has to enter the whole password. However, this service it not yet in the mainstream, only few people know and use it, in the future its number of users expected to grow significantly.

4. Summary

Electronic identification services in the public administration developed continuously during the past years. The topic is exceptionally versatile it consists the clarification of the terms identification and authentication, examine the regulatory environment, technical issues and practical implementation. The Hungarian national legal frame complies with the EU directives; it is in accordance with eIDAS regulation. Thanks to the new e-administration service model, authentication services have been created. At the present time, the Central Authentication Agent is not yet complete, we have to wait until the new eID authentication will be incorporated.

The three main forms of personal identification are currently operating side by side; the client can choose the most preferred option. The subsequent table summarizes the main characteristics of these identification forms.

	eID	Client Gate	Partial Code Telephone Authentication
Introduction	2016	2005	2015
Applicant	Hungarian citizen, immigrant or permanent resident, refugee or protected person	Hungarian and foreign country's citizen	Hungarian citizen, immigrant or permanent resident, refugee or protected person
Way of application	personally	personal or online	personal or online
Number of registrations	1	more	1
Number of applicants	more than 1 million	nearly 2,5 million	approximately 2000
Expenses	free of charge	1st registration is free	free of charge
Needed assets	IT tools + card reader	IT tools	telephone
Identification and authentication	two-stage (card + PIN code)	in the practice: one-stage knowledge based (username + password) possibility of two-stage authentication	in the practice: one-stage knowledge based (username + password) possibility of two-stage authentication
Connection	Internet	Internet	Telephone + Internet
Number of issue types	unknown	>130	2 (telephone) >130 (online)
Advantages	high security	easy usage well-known	easy usage no need for IT skills and tools
Disadvantages	card reader is required (app. 13 000 HUF) it can be usable now just in few places and for few cases	username and password can be easily cracked	less-known among clients
Development opportunities	support the dissemination of the card readers, promotion of solvable issues	increase security, application of 2-stage authentication	popularization application of 2-stage authentication

Table 1: Comparison of the authentication services identified by the law on e-administration

In 2016 numerous positive changes started and this trend will continue through 2017. Although for the citizens' electronic administration continue to be an alternate option for public administration services; for the businesses, organisations, legal representatives of the clients the electronic administration is obligatory in more and more cases. For administration, reliable identification and the uploaded documents' authenticity is essential. Therefore, the new eID card will have a significant part in the administration process, balancing the other authentication forms.

5. References

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