E-residency and blockchain

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A B S T R A C T

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In December 2014, Estonia became the first nation to open its digital borders to enable anyone, anywhere in the world to apply to become an e-Resident. Estonian e-Residency is essentially a commercial initiative. The e-ID issued to Estonian e-Residents enables commercial activities with the public and private sectors. It does not provide citizenship in its traditional sense, and the e-ID provided to e-Residents is not a travel document. However, in many ways it is an international 'passport' to the virtual world. E-Residency is a profound change and the recent announcement that the Estonian government is now partnering with Bitnation to offer a public notary service to Estonian e-Residents based on blockchain technology is of significance. The application of blockchain to e-Residency has the potential to fundamentally change the way identity information is controlled and authenticated. This paper examines the legal, policy, and technical implications of this development.

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1. Introduction

"We are doing this as a start-up. We don't know the full implications. Of course, we are hoping that it could be disruptive."[1]

In December 2014, Estonia started issuing e-ID cards to e-Residents and became the first nation to open its digital borders to foreigners, through its e-Residency initiative. For the first time, a nation has enabled anyone anywhere in the world to have an international digital commercial life using a sovereign government-backed identity credential. E-Residency is an evolution of digital identity programs, and the Estonian program is currently the most advanced government-sponsored, consumer digital identity program in the world.

E-Residents are able to remotely access and use a range of Estonian e-government and private sector services. The e-ID issued to Estonian e-Residents enables commercial activities including business and company registration, opening of bank accounts and funds transfers, buying and selling of real estate and other property, and trade of goods and services.[2] Digital trust services (e-trust) enable documents to be executed, and

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[1] Interview with Siim Sikkut, ICT Advisor, Government of Estonia, "E-stonia – A Startup Country", Back Light, June 15, 2015 at https://www.youtube.com/watch?v=9bYpk75JnZU&ebc=ANyPxKrsZWcc0C96ssbtS4rY-mHWwtx0k14wmTIcFI5OMfZvG-Ce9bSH2kJmQTzK86OSgEIYGSr388b9iB2twRWAt1I2sk6XNg.

[2] Since Estonia joined the euro zone on January 1, 2011, Estonia has brought its anti-money laundering regime into compliance with international standards. The Financial Institutions and e-Money Institutions Act (now the Payment Institutions and e-Money Institutions Act) was enacted by Estonia in 2010 and the Estonian Penal Code provides for asset seizure and forfeiture, and contains provisions dealing with money laundering. See Penal Code Passed 06.06.2001 RT I 2001, 61, 364.Entry into force 01.09.2002 at https://www

notaries avoided, with an electronic signature. There are limits to e-Residency, however. It is not residency or citizenship in its traditional sense and it does not provide a right to physically enter Estonia or the European Union (EU). E-Residents also do not have access to the full suite of the services available to Estonian citizens and permanent residents. E-Residency is primarily a means for expanding the commercial base and economy of Estonia,[3] but it is important because it entails the issue of a government-authenticated digital identity.

The stated goal of the government of Estonia is to have 10 million e-Residents by 2025.[4] For comparison, the entire population of Estonia is under 1.3 million.[5] Since the launch of the Estonian program, the number of e-Residents has steadily increased, exceeding the Estonian government's estimates threefold.[6] As of February 2016, 8500 people from 135 countries have applied to be Estonian e-Residents, with 8000 ID cards being issued.[7] To date, 320 e-Residents have established a company and another 720 companies involve e-Residents as owners or board members, for example.[8] While most e-Residents were initially from neighboring countries, the new trend is from Asia, particularly from India.[9] In 2016, Estonia reportedly wants to target Singapore, India, and the US for its e-Residency services.[10]

New services were added to the e-Residency program in 2015 and more are planned for 2016. Many of these services go beyond doing business in Estonia. The smart ID card issued to an e-Resident enables use of digital authentication for a range of applications. The Estonian e-Residency team is working with private companies to provide universal authentication services, the most significant of which is the application of blockchain technology to authenticate identity and identity documents.[11] This development is especially significant because the Estonian government and its infrastructure support it.

The Estonian e-Residency program is very attractive to individuals who wish to participate in economic activity[12] and businesses[13] seeking to expand their economic base. Estonian e-Residency team product manager Ott Vatter says:

> "it's the most efficient way of getting benefits like easy access to the EU market, e-banking services, and a streamlined digital administrative system. An entrepreneur doesn't need to be an e-Estonian to do most of these things, but it usually takes a lot of time, effort, money, and a physical presence to get all that going."[14]

Other countries and regions are likely to follow Estonia's lead and will similarly open their digital borders. The Estonian e-Residency model is also likely to set the standard for Europe. Mutual recognition throughout the European Union is a key component of the Digital Single Market strategy adopted by the European Commission on 6 May 2015 that includes 16 initiatives to be delivered by the end of 2016.[15] Most importantly therefore, while the primary objective of the Estonian e-Residency initiative is to attract business and investment to Estonia, it facilitates broader access to Europe and the planned Digital Single Market.

There are indications of this development now. Estonia, Belgium, Portugal, Lithuania, and Finland mutually recognize their e-IDs. In December 2015, Estonia and Finland became the first countries in Europe to develop a joint data exchange platform based on Estonia's X-Road, the platform that is also used for Estonian e-Residency. This platform enables databases in Estonia and Finland to interface to make e-services accessible to Estonian and Finnish citizens and permanent residents.[16]

.riigiteataja.ee/en/eli/ee/Riigikogu/act/523122015005/consolide; and the Payment Institutions and e-Money Institutions Act) passed 17.12.2009 RT I 2010, 2, 3 entry into force 22.01.2010 at https://www.riigiteataja.ee/en/eli/511112013017/consolide.

3 The Estonian government launched e-Residency to make Estonia bigger: to grow our digital economy and market with new customers, there-by sparking innovation and attracting new investments. In addition, e-Residency makes life and business easier and more efficient for everybody who already have a business or other relation to Estonia. See, Government of Estonia, "Estonian e-Residency First Anniversary", December 1, 2015 at https://www.youtube.com/watch?v=exyg1Eybcjw.

4 Government of Estonia, "Estonian e-Residency First Anniversary", December 1, 2015 at https://www.youtube.com/watch?v=exyg1Eybcjw.

5 Estonia, The World Factbook, Central Intelligence Agency, retrieved June 5, 2016.

6 Ibid.

7 Government of Estonia, "Estonian e-Residency ", February 2016 at https://docs.google.com/presentation/d/1hUHyYKWspu4k3K1OU9WCSSEk8D6jaZwjrsB1c7Ljick/edit?pref=2&pli=1#slide=id.gaf21f25ad_0_0.

8 Ibid.

9 Presentation by Kaspar Korjus, Estonia e-Residency, n 2 above.

10 Michael Tegos, Estonia's e-residency program makes it easy for Singaporeans to do business in the EU, TechAsia Feb 4, 2016 https://www.techinasia.com/estonia-e-residency-singapore-entrepreneurship.

11 Announced in December 2015. See n 4 above.

12 According to the head of the Estonian e-Residency program, Kaspar Korjus, "there have been numerous requests for information from countries that suffer from lack of proper digital identification and therefore have limited access to digital services. These people see e-residency as the first service to allow them to enter into a modern digital society." according to Korjus. See, "E-residency – up against great expectations", January 13, 2015 at https://e-estonia.com/e-residency-up-against-great-expectations/.

13 "On the other hand, you have all the service providers that consider the overhead of establishing a presence in every country in the world too big. E-residency would open up new markets without the need to sign a deal with all the different banks and merchants there. They would just need to recognize Estonia's e-residency and sign a deal with an Estonian bank that hosts e-residents," Korjus explains. See, "E-residency – up against great expectations", January 13, 2015 at https://e-estonia.com/e-residency-up-against-great-expectations.

14 See Michael Tegos, Estonia's e-residency program makes it easy for Singaporeans to do business in the EU, TechAsia Feb 4, 2016 https://www.techinasia.com/estonia-e-residency-singapore-entrepreneurship.

15 European Commission, Digital Single Market, February 25, 2016 at https://ec.europa.eu/digital-agenda/en/digital-single-market.

16 Government of Estonia, "X Road Between Estonia and Finland, December 14, 2015 at https://e-estonia.com/x-road-between-finland-and-estonia/.