



Malmö
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Länstyrelsen i Skåne län
Att: Jörgen Dehlin
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Vår referens
SE-11031964

Your reference: Jörgen Dehlin, BLING-projektet
IP-report regarding electronic voting based on blockchain

Background

The purpose of the BLING-project is to investigate to what extent the public sector can use blockchain technology to further develop its services to the public. Within this project Länstyrelsen i Skåne (hereinafter referred to as the "County Administrative Board") is addressing the issue of if, and if yes, how the blockchain can be used to develop and improve the dialogue between the public and the County Administrative Board. A particular focus has been put on electronic-voting, e-voting. With respect to e-voting the County Administrative Board has found that existing solutions do not meet their requirements with respect to IT-security and user friendliness. As a result, the County Administrative Board has decided to investigate the possibilities to develop its own solution for e-voting, which has resulted in the following two questions:

- 1. If the County Administrative Board decides to develop its own model for e-voting, which international IP-rules apply?*
- 2. Could the County Administrative Board potentially protect a model for e-voting that it develops or does this model automatically become public?*

Question 1

Models based on blockchain for e-voting are examples of software. Different aspects of software can be eligible for different types of intellectual property rights. The computer program or its underlying source code could be eligible for copyright protection, the graphical user interface could be eligible for copyright and/or design protection, technical inventions relating to, or based on, the software could be eligible for patent protection and the name of the software could be eligible for trademark protection. However, the fact that something is potentially eligible for protection does not automatically mean that it can be, or is, protected. The reason for this is that it must also meet the individual criteria for protection of the relevant intellectual property right.

With respect to patents for example the technical invention must be a technical solution that is both new and has an inventive step. In order for a technical invention to have an inventive step the technical invention cannot be obvious to a person skilled in the art, having regard to any matter which forms part of the prior art. Moreover, many of the intellectual property rights require registration i.e. in order to rely on patent protection one must have a patent *registration*.

Copyright protection is in a way more complex as copyright protection does not require registration and protection arises as of creation provided that it meets the threshold for protection. That threshold varies between different countries but within the European Union the threshold is commonly referred to as 'originality'. In other words, to be eligible for copyright protection the created work must meet the threshold of originality. As a result of the nature of copyright protection a third party can claim that the model for e-voting/ source code used in the model for e-voting developed by the County Administrative Board infringes that third party's copyright even if that code has been developed abroad and irrespective of any registration. A potential copyright claim relating to the model for e-voting used in Sweden would be assessed according to Swedish national copyright law whereas a copyright claim relating to the model for e-voting used in the e.g. Netherlands would be assessed according to the copyright law in the Netherlands.

Today, 'open source' is commonly used in many software development projects. There is no legal definition for 'open source' but generally speaking 'open source' software is defined as computer software that is released under a license by which the copyright holder to the software grants users the rights to use, study, change, and distribute the software and its source code. Possible limitations to this grant are defined by the applicable 'open source' license. Today there are a number of different 'open source' licenses available. Some of these also include copyleft provisions. This means that if the County Administrative Board uses 'open source' that has been released under an 'open source' license containing a copyleft provision to develop its model for e-voting, the County Administrative Board could be obliged to release its entire code for its model for e-voting under the same 'open source' license.

Consequently, and to the extent that the County Administrative Board (or the party developing the model for e-voting on the County Administrative Board's behalf), is considering using 'open source' to develop its model for e-voting we recommend that the license terms of the relevant 'open source' are first carefully reviewed.

Consequently, to the extent the County Administrative Board develops its own model for e-voting this model could potentially on the one hand be protected but the model could on the other hand

infringe third party rights relating to copyright, design, patents and/or trademarks. One needs to bear in mind that copyright, design, patent and trademark protection are in essence national rules and although these rules are harmonized to some extent on both a European and international level there may be national variations in the scope of protection. Furthermore, intellectual property rights are national rights, and it may therefore be that, for example the model for e-voting that the County Administrative Board develops, potentially infringes a third party's patent in the Netherlands but the County Administrative Board may still be free to use that model for e-voting in Sweden, if the third party has not also been granted a Swedish patent. The same applies for design protection (e.g. graphical user interfaces) and trademark protection (e.g. name of the software).

Therefore, geographical aspects also play a big role when considering both scope of one's own protection but also for respecting any third-party rights. Any possible protection of the model can therefore be chosen to fit the projects member countries and if there are an interest from other countries such that maybe a license can be granted for the users in the country can be granted.

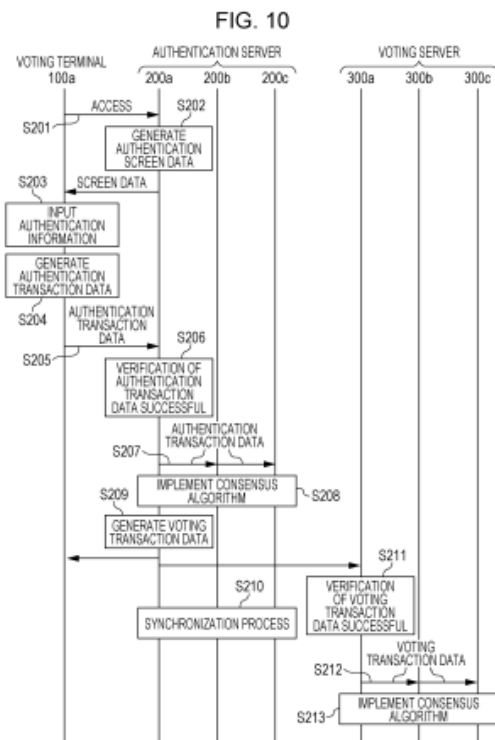
Below is an example of an e-voting model based on blockchain that Panasonic Corporation has applied for and received a grant in for example Europe. This patent could therefore be relevant for the final model but also serves to illustrate that there are patents for e-voting based on blockchain.

EP 3 429 122 , Panasonic Intellectual Property Corporation of America,

Date of filing: 05.07.2018

(54) METHODS AND APPARATUSES FOR CONTROLLING ELECTRONIC VOTING

(57) An authentication server authenticates a voter using authentication data including a first identifier (ID) associated with the voter and authentication information regarding the voter. The authentication server further synchronizes a first blockchain. The first blockchain includes first transaction data indicating that the voter has been authenticated with one or more of other authentication servers. A voting server receives, from a terminal, voting data including a second ID associated with a vote cast by the voter and voting information indicating the vote. The voting server synchronizes a second blockchain including, as second transaction data, the voting information included in the voting data with one or more of other voting servers. The terminal transmits the authentication data to the authentication server and, after the authentication is successfully completed, transmits the voting data to the voting server.



Question 2

As a public authority, the County Administrative Board is bound by the principle of publicity. The principle of publicity is governed by the Swedish Act on Public Access to Information and Secrecy. In principle, everyone is entitled to read documents held by public authorities. The term 'document' not only refers to writing or images on paper but also, for example, to a tape recording, email or text message. In other words, a document is any object that contains information of some kind.

The principle of publicity is limited in two ways. Firstly, the public is only granted access to official documents and not all documents are regarded as official. A draft of, for example, a decision, a written communication, or a similar document in a particular matter is not an official document. Secondly, some information contained in official documents is classified as a secret. Consequently, a technical invention relating to a model for e-voting would only need to be made available to the public to the extent it is described in an official document as defined by the Swedish Act on Public Access to Information and Secrecy. Moreover, even if a technical invention relating to the model for e-voting is described in an official document that everyone would be entitled to read on the basis of the Swedish Act on Public Access to Information and Secrecy this does not automatically give everyone the right to use the technical invention.

Provided that the technical inventions relating to the model for e-voting are not described in an official document or provided this information can be regarded as secret as defined by the Swedish Act on Public Access to Information and Secrecy the County Administrative Board would thus be able to file a patent application for said invention without the risk of jeopardizing the novelty requirement. Moreover, the County Administrative Board could potentially also rely on (1) copyright protection to the underlying code and/or graphical user interface to prevent others from using the code/graphical user interface provided that the original creator has transferred his/her rights to the County Administrative Board and (2) trademark protection for the name of the model for e-voting to prevent others from calling another model for e-voting the same name.

In summary, the principle of publicity does not automatically result in that the County Administrative Board cannot protect the model for e-voting or thereto related aspects of it.

However, before assessing to what extent a model for e-voting can be protected by intellectual property rights we recommend that an assessment is made regarding whether it makes sense for the County Administrative Board to own intellectual property rights and granting these rights to third parties considering that such activities may be considered an anti-competitive sales activity by a public authority prohibited by the Swedish Competition Act.

Recommendations

Considering that the various aspects of a model for e-voting could be eligible for intellectual property protection there is also a risk that this model for e-voting would infringe third party intellectual property rights.

Depending on the nature of the actual model for e-voting it may additionally be justified to conduct some type of freedom-to-operate (FTO) in the project plan. The purpose of a FTO is to limit the risk of legal liabilities to third parties (e.g. patent and trademark holders). A FTO can vary both in scope

and cost. Thus, even if you decide not to protect the model for e-voting by intellectual property, we recommend that you as a minimum ask us to conduct an FTO with regard to patents and trademarks, to lower the risk that you infringe third party patent and trademark rights. To conduct FTO's with regard to designs and copyrights are much more challenging and might therefore not be financially justified.

Irrespective of the risk of infringement of third-party intellectual property rights and irrespective of if aspects of the model for e-voting could be eligible for intellectual property protection we recommend that we first discuss *the possibilities* for the County Administrative Board to protect the model for e-voting and create valuable assets for the County Administrative Board, or any possible subsidiary to the County Administrative Board.

Therefore, in order for us to further comment on both the risks of liability and the possibilities for intellectual property protection for the model for e-voting or parts thereof we recommend that we set-up a meeting to discuss the model for e-voting itself as well as the business case behind why the County Administrative Board is interested in protecting its model for e-voting by intellectual property rights.

We look forward to further helping you out with this interesting project!



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