TO:
National Transport Commission
Australia

Discussion paper: Government access to vehicle-generated data (May 2020)

First of all, a lot of thanks to National Transport Commission (Australia) for organising this important consultation.

This opinion represents an opinion of an individual citizen, not any legal entity.

This opinion does not contain:

- any business secrets
- any trade secrets
- any confidential information.

This opinion is public.
PDF file of this opinion can be added to a relevant web page.

Annex 1 holds information about copyright, licence and disclaimers.

Best Regards,

Jukka S. Rannila
citizen of Finland

signed electronically

[Continues on the next page]

Answering only some questions

I don´t answer to all consultation questions (1-19).

European Union context

There are different (legislative) projects handled by the European Commission and the European Parliament – check the following links.

> https://www.europarl.europa.eu/news/en/headlines/economy/20190110STO23102/self-driving-cars-in-the-eu-from-science-fiction-to-reality
>
> https://ec.europa.eu/digital-single-market/en/connected-and-automated-mobility-europe
>
> https://ec.europa.eu/growth/content/guidelines-exemption-procedure-eu-approval-automated-vehicles_en
>
> https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?lang=&reference=2018/2089(INI)
>
> **Proposal: These (legislative) projects could be assessed carefully by the National Transport Commission.**

Question 8: standards

Question 8:

> **Are there relevant international standards that should be adopted for vehicle generated data? Are there any standards that could be locally developed?**
>
> ***I try go give an opinion about different standards!***

First conception of information technology (IT)

We have the four basic functions: add, retrieve, change and remove. Then there are databases and documents used in different systems. Users use different displays (interfaces). Different systems need administration (also maintenance) for keeping a system functional. Then there is communication (also standards) for direct and indirect usage of an information system.

In practical reality, different information systems are interrelated, and practical added value is based on the seamless cooperation between systems.

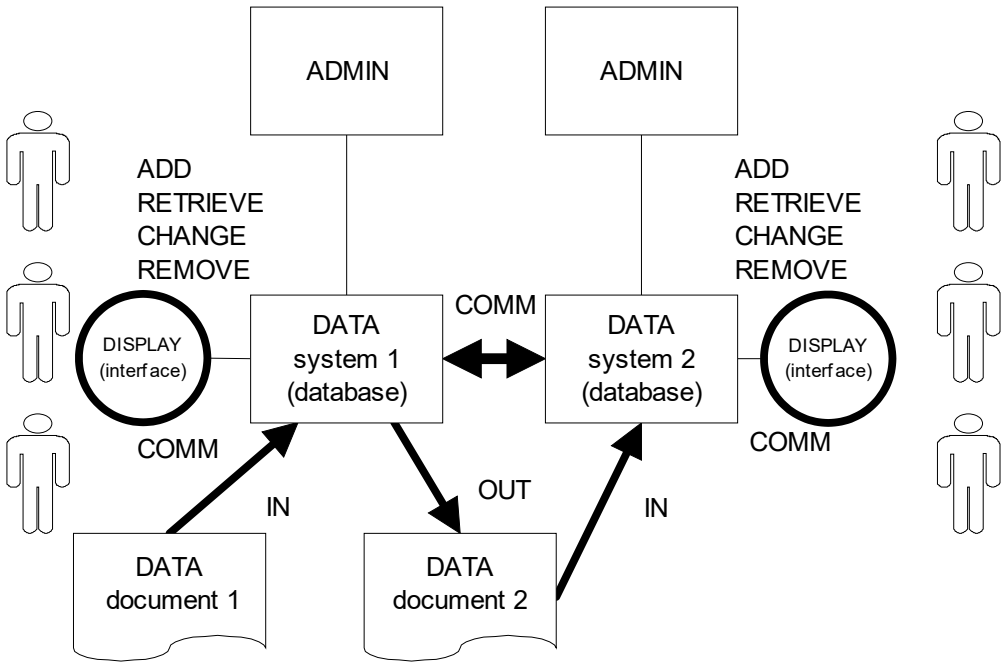
Here we can note some general issues with information systems. Generally speaking there can be direct system-to-system connections. Generally speaking cooperation between systems are based on

transmitting different documents to different systems.

Note: There may be a need for both solutions – direct system-to-system connections and transmitting different documents between systems.

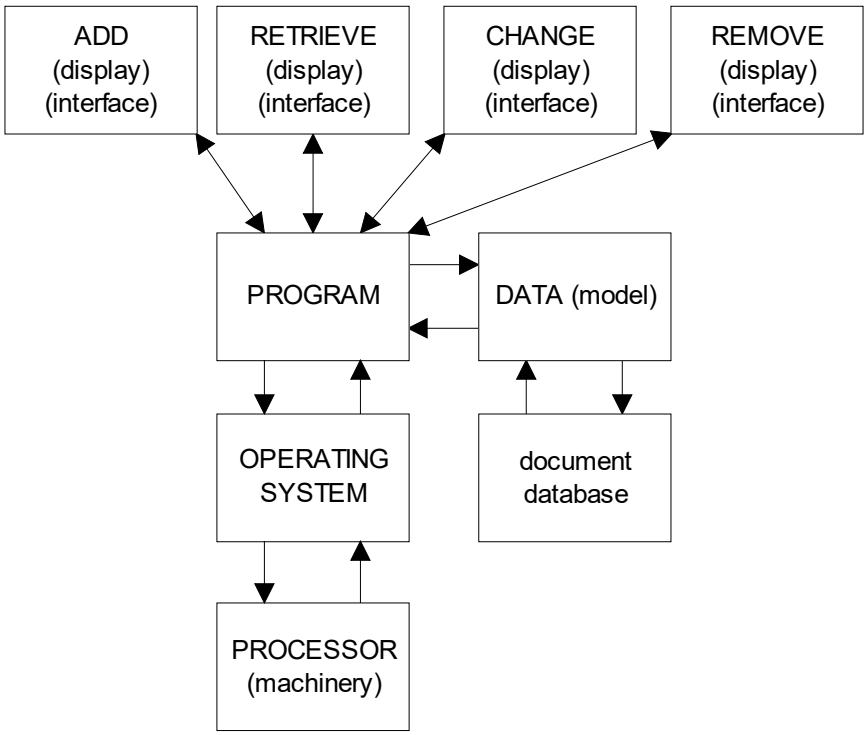
Proposal: Probably there has to both options implemented – direct system-to-system connections and transmitting different documents between systems.

Proposal: There could be a need for technically oriented consultation(s) based on the results of this consultation.



Second conception of information technology

[Continues on the next page]



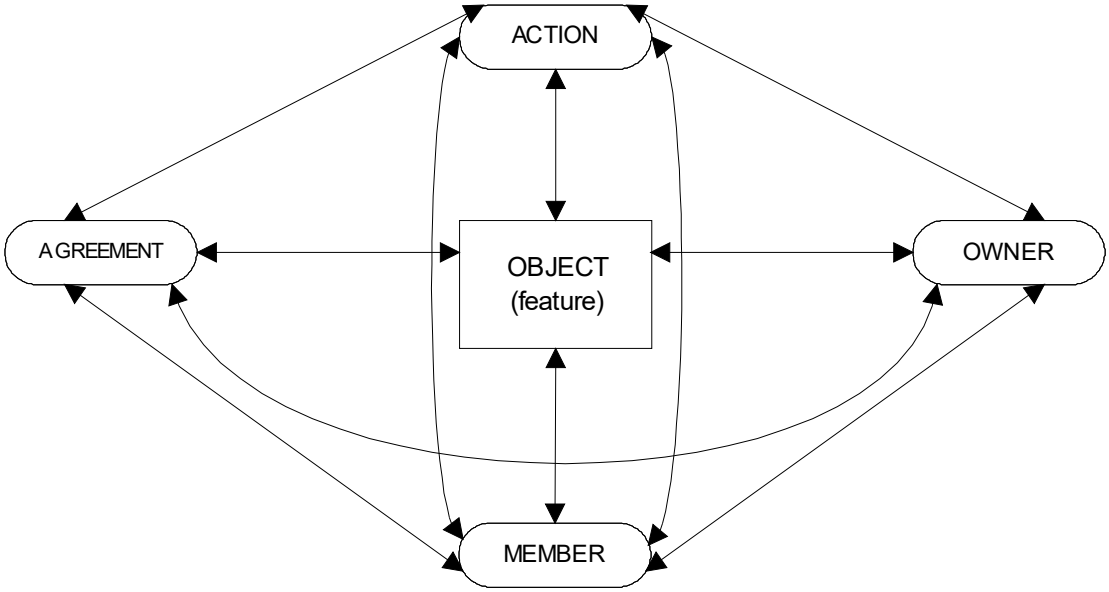
Generally speaking we have different techniques on the information technology field. Here we can note that programs (most arrows) are in the middle of different information systems. Then programs handle the data in a system (documents and/or databases). However we have to have one specific program which is different – i.e. operating system. Operating systems handle connections with machinery and processors. Generally speaking programs can work with an operating system and developers of programs use different parts of an operating system.

We have to note that data can have different models and data (models) are developed and/or used by different stakeholders (four basic functions). Especially in databases there are possibilities for several data models; depending on the modellers there can be different data models in databases. Generally speaking changing data models can be very difficult in many cases.

Owner, member or agreement?

Here we can note the difference between owners, agreements and members. In reality ownerships agreements and memberships cause very complex networks, and those networks are changing all the time: divisions, mergers, ownership changes, agreement changes, cooperation with other entities, life-cycles, etc.

Here we can note that ownership, agreement and membership are interlinked in different ways. Generally speaking average usage of a system means an unique combination of ownership, agreement and membership. When everything works fine there are not problems. However changes with ownership, agreement and membership can result difficult situations.



Proposal: There could be some considerations for assessing possible / future changes in ownerships, agreements and memberships.

In the previous consultations I have advocated following solution as the maximum solution:

* public sector institute owns the machinery and processor of the information system
* the machinery and processor are based on relevant open standards
* the operating system is based on an open-source solution
* public sector institute owns the source code of the information system
* public sector institute owns the database of the information system
* the database is based on open-source solution and on relevant open standards
* public sector institute owns all data in the information system.

Naturally, there can be solutions, which are not based on the maximum solution.

Note: The relations between different aspects of information systems can result rather complicated (legal) network(s): i.e. Ownership, Membership, Agreement.

Next table gives us some possibilities for assessing possibilities for open solutions and closed solutions.

[Continues on the next page]

	Owner? Member? Agreement?	OPEN	CLOSED
1. Device / Machinery			
2. Operating system			
3. Program(s)			
4. Data models / Conceptual models			
5. Documents			
6. Databases			
7. Communications			
8. Retrieve / Interface / Display			
9. Add / Interface / Display			
10. Remove / Interface / Display			
11. Change / Interface / Display			

So there can be several ways for organising different (sub)systems. In many cases there are problems with different concepts since many systems are developed by different communities.

Proposal: Conceptual schemas of different systems could explicated.

Note: There can be a lot of variety with conceptual schemas in different systems.

This means different adjustments in different (sub)systems since different systems are developed with different conceptual schemas.

Proposal: There could be assessment of different systems – can different systems be adjusted to comply with proposed conceptual schemas?

Proposal: Both options could be assessed:

1) Systems handle consolidation of conceptual schemas INSIDE systems.
2) There are EXTERNAL systems which could handle consolidation of conceptual schemas.

Here can noted that there are unique systems used inside/outside of different communities. This means that different information systems have unique situations: some systems can be rather old, some systems are under development, some systems are to be terminated in the (near) future and other different situations.

Proposal: Perhaps both options have to be implemented – some systems handle consolidation INSIDE and some systems handle consolidation OUTSIDE.

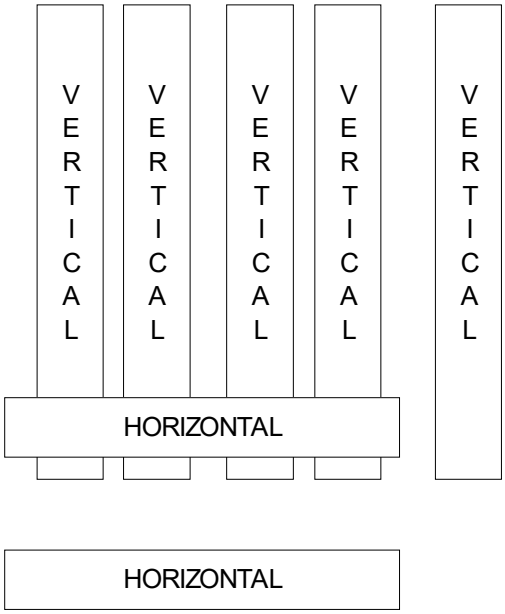
Proposal: Need for different direct contacts (system to system) should be assessed critically.

Proposal: Need for using different documents should be assessed critically.

Note: Like noted earlier there can be some variation of conceptual schemas in different systems.

Favouring open standards / Favouring horizontal standards

I have proposed several times usage of ***open horizontal standards*** when developing different information system.



There are differences between horizontal and vertical standards. A simple example is naturally email solutions. There are several vertical standards when creating technically email solutions. Then there are horizontal standards which enable sending messages between technically different email solutions.

Proposal: There could be assessment of vertical and horizontal standards.

Proposal: Using horizontal standards could be favoured when creating different information systems.

Horizontal standards enables technological solutions which can work together. Horizontal standards hides different complexities in information systems.

Opinion: The number of redundant standardisation efforts should be minimal.

Proposal: There could be separation of horizontal standards and vertical standards.

Proposal: There could be different standardisation efforts to horizontal standards and vertical standards.

Personally I have advocated using different horizontal standards. For example email standards (horizontal) are implemented with very different technologies (vertical).

Here we can note some problems:

- some systems are based on **de-facto** standards
- some systems are based on **de-jure** standards
- there can be confrontations between **de-facto** and **de-jure** standards
- there can be a monopoly situation in some domain
- some standards may inhibit possible actions of some stakeholders
- there can be a standard war on some domains
- standards have different life-cycles
- systems have different life-cycles
- there can be mismatches between different life-cycles
- there can be failed standards
- there can be deprecated standards.

It is quite normal situation in the information technology field that there are competing standards for some application field. Therefore there are all the time ongoing “standards wars” or “format wars”. The information technology standards tend to be interrelated and one “standards war” or “format war” can lead to another similar situation.

I have advocated open standards even though in some cases open standards are not de facto standards. In practice public sector has very important role, when some standards are competing in the market place. Because public sector has a considerable power when buying/developing information systems and therefore public sector can sometimes direct markets to certain standards. Therefore there should be serious vigilance when assessing different standards and “standards” in some application fields.

There are different standards setting organisations on the information technology field. One list [1] of these standards setting organisations is provided by ConsortiumInfo.org.

One warning can be said about standards setting organisations. All standards setting organisations

1 Standard Setting Organizations and Standards List, www.consortiuminfo.org/links/linksall.php

are not successes based on several factors and there can may irrelevant standards setting organisations. Market situation on different markets varies a lot based on different factors.

Proposal: Current standardisation (e.g. list provided by ConsortiumInfo.org) efforts by different standard setting organisations could be assessed carefully.

Personally I have advocated using different horizontal standards. For example email standards (horizontal) are implemented with very different technologies (vertical).

Proposal: Governments should especially concentrate on horizontal standards.

Proposal: Some government agencies could apply for memberships of different standard setting organisations which develop especially horizontal standards.

Proposal: Government agencies should not be passive by-standers when different horizontal standards are developed.

Proposal: Government agencies could financially support development of horizontal standards.

Proposal: There could some guidance for using open horizontal standards on different application fields.

Proposal: There could different standardisation efforts for communication, data, document, database, display/interface standards.

Proposal: Assessing previously developed standards could be done seriously.

Proposal: Providing (open) data with different timeframes could be assessed carefully.

Proposal: Providing (open) data directly from database(s) could be assessed carefully.

Proposal: Providing (open) data as documents could be assessed carefully.

Generally speaking different stakeholder communities can use open data in very intelligently – also adding other (open) data for creation an information service is a possibility. Here we can note that there can be direct system-to-system connections, which can mean some standardised interfaces. Also we can note that different document formats can be used when there is system-to-system connections.

Generally speaking different stakeholder communities can use open data in very intelligently – also adding other (open) data for creation an information service is a possibility. Here we can note that (open) data must be processed with different software. There can be closed software or open software.

Proposal: There can be different software to process open data.

Proposal: Open source software could be favoured when processing open data.

Then there is the problem of developing new software. Both open software and closed software mean a lot of work for developers. Personally I have advocated creation of non-profit foundations which can handle open standards with open source program. Examples of these foundations are following:

- Apache Software Foundation [2] [3]
- Document Foundation [4] [5]
- Eclipse Foundation [6] [7]
- Linux Foundation [8] [9]
- OpenStack Foundation [10] [11]
- Python Software Foundation [12] [13]

There are also some non-profit communities which are not foundations:

- Creative Commons [14] [15]
- Open Knowledge International [16] [17]
- Open Source Hardware Association [18]
- Open Source Initiative [19] [20]
- Open Source Matters [21]
- Open Source Robotics Foundation [22]
- PHP Group [23] [24]

2 https://www.apache.org
3 https://en.wikipedia.org/wiki/Apache_Software_Foundation
4 https://www.documentfoundation.org
5 https://en.wikipedia.org/wiki/The_Document_Foundation
6 https://www.eclipse.org
7 https://en.wikipedia.org/wiki/Eclipse_Foundation
8 http://www.linuxfoundation.org
9 https://en.wikipedia.org/wiki/Linux_Foundation
10 http://www.openstack.org
11 https://en.wikipedia.org/wiki/OpenStack
12 https://www.python.org/psf/
13 https://en.wikipedia.org/wiki/Python_Software_Foundation
14 https://creativecommons.org/
15 https://en.wikipedia.org/wiki/Creative_Commons
16 https://okfn.org
17 https://en.wikipedia.org/wiki/Open_Knowledge_International
18 www.oshwa.org/
19 https://opensource.org/
20 https://en.wikipedia.org/wiki/Open_Source_Initiative
21 http://opensourcematters.org
22 www.osrfoundation.org/
23 https://php.net/
24 https://en.wikipedia.org/wiki/PHP

Standards and/or software provided by these non-profit communities (foundations and other) are usually concentrating on some specific information technology domain. I have advocated single-issue non-profit foundations.

Proposal: Information about non-profit single-issue foundations could be collected.

Proposal: Information about other non-profit single-issue communities could be collected.

Proposal: Membership for these non-profit single-issue foundations and/or communities could be assessed carefully.

Proposal: In some cases it can be reasonable to join some non-profit foundation(s) and/or non-profit communities.

In reality all these non-profit communities need some financial support for their activities.

Proposal: In some cases it can be reasonable to give financial support to non-profit communities.

Note: Here we can note that some non-profit communities are not real successes and some non-profit communities might be closed down after different failures.

An example for cooperation: Web feeds (RSS and Atom)

I have advocated usage of web feeds [25] on several previous opinion documents. Actually there are two standards for web feeds: RSS [26] [27] and Atom [28] [29] [30].

Proposal: Web feeds (RSS and/or Atom) could be advocated when developing different informations systems (EU / Member states).

Proposal: Web feeds (RSS and/or Atom) should be used extensively for providing (real-time) information for different stakeholder(s) (communities).

Proposal: There can be different web feeds (RSS and/or Atom) for different

25 https://en.wikipedia.org/wiki/Web_feed
26 http://www.rssboard.org/rss-specification, RSS 2.0 Specification
27 https://en.wikipedia.org/wiki/RSS, Wikipedia / RSS
28 https://en.wikipedia.org/wiki/Atom_(standard), Wikipedia / Atom (standard)
29 https://tools.ietf.org/html/rfc4287, The Atom Syndication Format
30 https://tools.ietf.org/html/rfc5023, The Atom Publishing Protocol

stakeholder(s) – having just one web feed (RSS and/or Atom) may not be a feasible solution.

Proposal: Several web feeds (RSS and/or Atom) can be based on different viewpoints.

It can be easier to create web feeds in different information systems since web feeds enable connections without direct system-to-system connections.

It can be noted, that different back-office systems (with a wide variety of different technologies) can implement RSS standards, and these RSS feeds can be used in the front-office systems. With this kind solutions front-office systems dont need direct system-to-system communications with back-office systems.

Question 6: About different brokers

Question 6:

Is there value in establishing a national data aggregator or trust broker? Could good data definitions, practices and cooperation between entities achieve the same outcome?

I try go give an opinion about brokers!

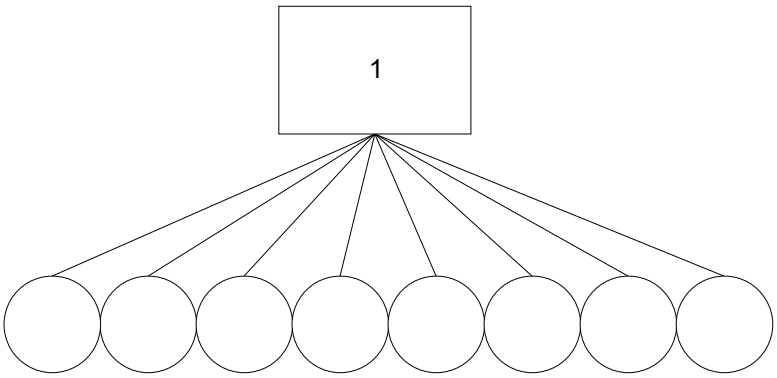
Different application programming interface (APIS)

There can be several APIs implemented in different information system. The natural problem with APIs is timeline of different systems which implement different APIs. There can be new and old systems which implement different APIs.

Proposal: Different information systems could be assessed based on *implementation of different APIs*.

Here can be noted that there can several APIs implemented in different information systems.

[Continues on the next page]



One issue can be different versions of APIs. Based on timelines of different systems there can be different API versions in use. One system may have several displays and interfaces. One problem is different versions of displays and interfaces.

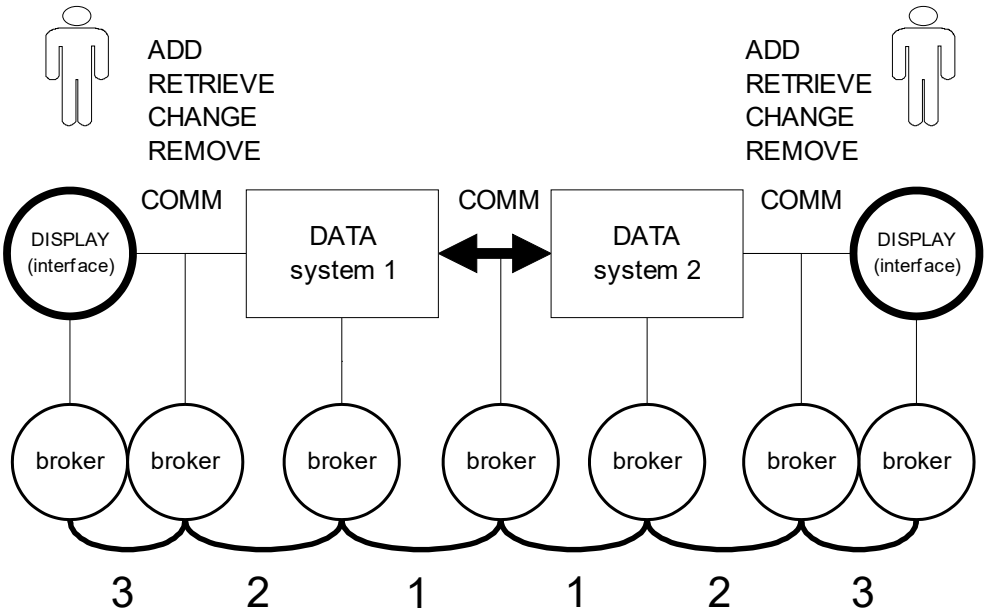
Proposal: There could be assessment about different versions of displays and interfaces.

Note: Different systems implement different versions for displays and interfaces.
Note: Information systems implementing different versions for displays and interfaces can mean lot of work.

Standardisation on several layers

Here we can not that there can be different brokers (or trusted third parties) which are user between different systems. Here we can note that there can be several standards when there is cooperation between different systems.

[Continues on the next page]



Proposal: (Repetition) There could be some assessments of standardisation on several layers.

Proposal: Different brokers could be assessed as part of previously mentioned assessments.

Here we can note that there can be several stakeholder groups using standards. Here we can note that different stakeholder groups can be separated. There can be several stakeholder groups which can be both public sector and private sector communities.

Proposal: There could be development of (open) standards for consolidating standardisation efforts based on several layers (brokers!).

More technical consultations?

Based on answers (this consultation generally) there could be more technically oriented consultations. Previously mentioned issues (this opinion) could be detailed for new technically oriented consultations.

Proposal: More technically oriented consultations could be organised after this consultation.

[Continues on the next page]

ANNEX 1

DISCLAIMERS

Legal disclaimer:

All opinions in this opinion paper are personal opinions and they do not represent opinions of any legal entity I am member either by law or voluntarily. This opinion paper is only intended to trigger thinking and it is not legal advice. This opinion paper does not apply to any past, current or future legal entity. This opinion paper will not cover any of the future changes in this fast-developing area. Any actions made based on this opinion is solely responsibility of respective actor making those actions.

Political disclaimer:

These opinions do not represent opinions of any political party. These opinions are not advices to certain policy and they are only intended to trigger thinking. Any law proposal based on these opinions are sole responsibility of that legal entity making law proposals.

These opinions are not meant to be extreme-right, moderate-right, extreme-centre, moderate-centre, extreme-left or moderate-left. They are only opinions of an individual whose overall thinking might or might not contain elements of different sources. These opinions do not reflect past, current or future political situation in the Finnish, European or worldwide politics.

These opinions are not meant to rally for a candidacy in any public election at any level.

Content of web pages:

This text may or may not refer to web pages. The content of those web pages is not responsibility of author of this document. They are referenced on the date of this document. If referenced web pages are not found after the date when this document is dated, that situation is not responsibility of the author. All changes done in the web pages this document refers are sole responsibility of those organisations and individuals maintaining those web pages. All illegal content found on the referred web pages is not on the responsibility of the author of this document, and producing that kind content is not endorsed by the author of this document.

Use of broken English

This text is in English, but from a person, whose is not a native English-speaking person. Therefore the text may or may not contain bad, odd and broken English, and can contain awkward linguistic solutions.

COPYRIGHT