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TRUSTED CLOUD EUROPE SURVEY / OPINION OF Jukka S. Rannila

First of all, a lot of thanks to the Commission for organising trusted cloud Europe survey.

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.
European Commission can add the PDF file of this opinion to a relevant web page.

Annex 2 holds information about disclaimers and copyright.

Best Regards,

Jukka S. Rannila
citizen of Finland

signed electronically

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1. General: Previous consultations

In the Annex 1 is a list of my previous opinions, which are mostly addressed to different Directorate-Generals of the European Commission. Some parts of the previous opinions can be used in this opinion.

This consultation most likely will result several ideas .The commission could publish a work program based on the results of these consultation. There can be division to some layers:

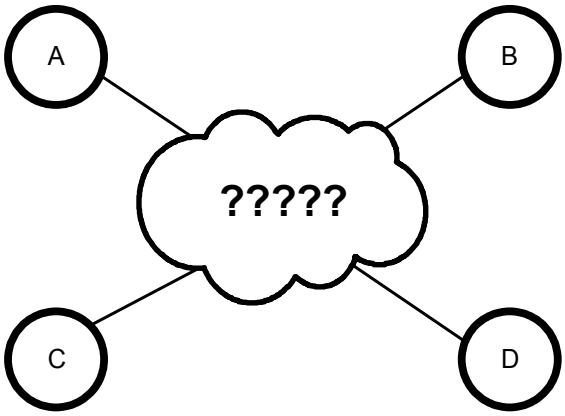
1) Technological layer
2) Data layer
3) Information layer
4) People layer

The easiest layer is naturally the technological layer, and the standardisation in that area can be very fast. In the data layer there can be competing ideas for different IDs (identifiers) and those proposals should be assessed with different stakeholders. The information layer is about understanding the received data - hopefully in the correct / original form. The European Commission can (once more) provide auspices for multi-lingual understanding. The people layer is the hardest layer, since we are very accustomed to certain models.

Proposal 1: The results of this consultation could be classified to these four level (technology, data, information and people).

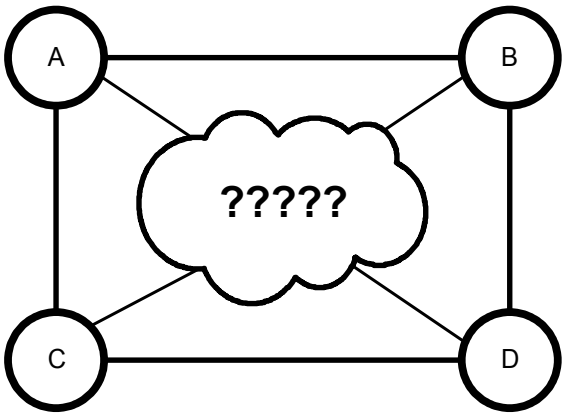
2. Explicating cloud systems

Following figure is one conception of a cloud system.



In theory, a cloud can be an application, and the users just add data to the application, and there is no need to have local computing resources – e.g. “just have an internet connection”.

In practical reality, EU-wide systems (e.g. A, B, C, D) can be joined together with one-to-one connections, and member state systems can be joided with one-to-many system (E.g. 28 systems → System A, etc.).



In reality, one person and/or community can be linked to several cloud information systems. These cloud information systems can be private or public. There can be division to several cloud systems: usage of private and/or public cloud systems.

Proposal 2: The results fo this consultation could be classified to these classes: public and private.

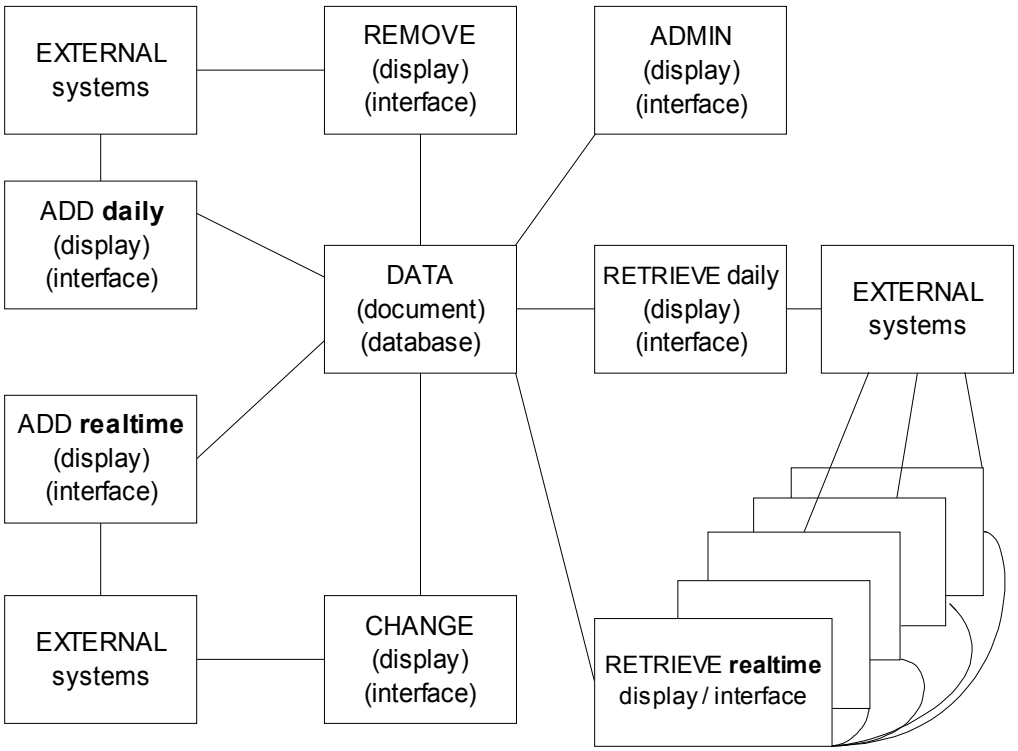
3. Cooperation between several systems

In practical reality much of the computer usage is result of cooperation between several computer-based systems. The following figure is a conception of some possibilities for organising cooperation between system.

In the previous consultations I have explicated the need for standardised interfaces, which are result of different needed viewpoints. However, a large-scale information system can mean thousands of users, and naturally the data in a system can be voluminous. This is not a news item.

In practical reality different communication needs and different interfaces (displays) demand replication of some parts of the (new) system. Since retrieval is the most needed function, there might be replications for different communication methods, e.g. possible real-time retrievals come from different replicated data system. These replicated retrieval systems might work on thousands of retrievals per second. Naturally some external systems might work on real-time basis and they are some-how connected to the (new) information system.

SO – so-called cloud can contain very efficient retrieval systems, and possibly other systems (add, change, remove) can be more traditional.



One aspect in also the difference between real-time systems and archival systems. Like said, efficient retrieval is can be divided to archival and real-time retrieval.

Proposal 3: the difference between real-time systems and archival systems could be explicated more.

4. Membership, ownership and agreement

I have constructed the following figure based on my limited experience.

In short:

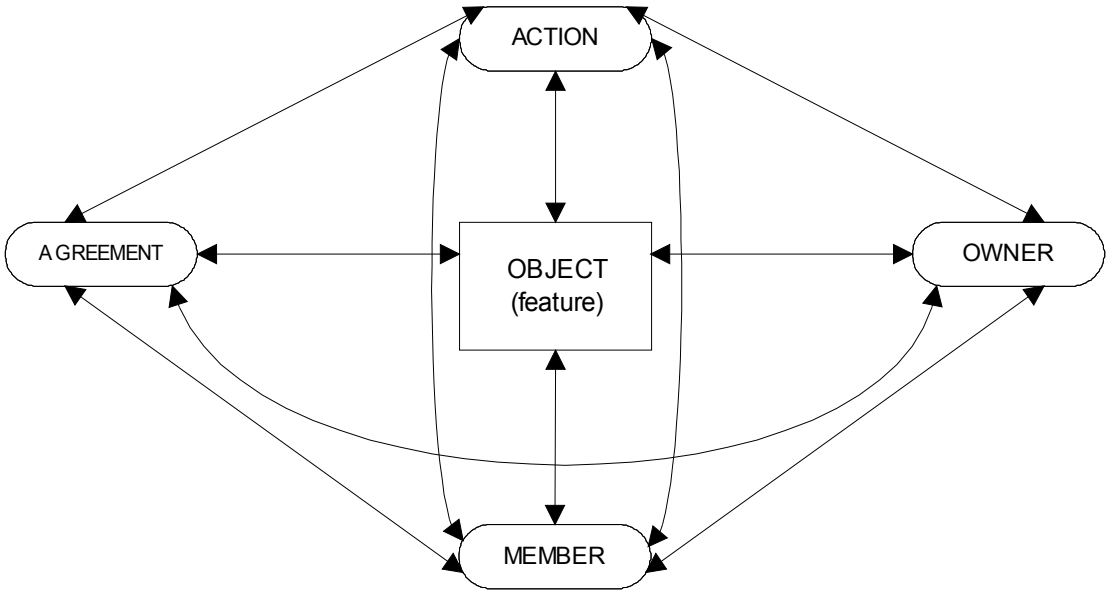
* the world is full of different objects (things)
* objects can be nowadays be digital in all phases
* someone owns some objects
* usage can be based on ownership, agreements and membership
* the linkages between ownership, agreements and membership can be very complex
* the linkages between ownership, agreements and membership can change very often.

The mentioned linkages linkages between ownership, agreements and membership can also be divided to two actions:

* distribution
* usage

There is nothing new on the previous explanations. However, the difference between distribution

and usage should be as clear as possibile; also the juridical text should explicate this difference between distribution and usage.



In a information system there are a numerous features implemented; these features can be based on agreements, ownership or membership. Also, there is a complex web of combinations among agreements, ownership or membership. Generally speaking, we use different information systems without considering agreements, ownership or membership related to a specific solution.

Proposal 4: The Commission could systematically reveal complex webs of combinations among agreements, ownership or membership in different cloud application fields.

There is some mentions about terms of reference. In some previous opinions I have advocated a project for creating very simple and readable documents.

Proposal 5: There could be a project for creating highly readable terms of reference documents.

If external entities are used in evaluation projects, the terms must be very understandable. In practice this means reading the legal text through, and then creating highly readable document. There can be two or more layers for creating readability, e.g. user-friendly version and the actual legal text (“legalese”).

Too often we provide terms written only by lawyers, and naturally this text can be very specific and detailed legal text (“legalese”). In practical reality, the legal text can be presented in very user-friendly forms.

One option is to have some labels for different parts of cloud solutions. An example from previous

endeavours is the [1] EU Ecolabel for printed paper products, which can be assessed critically.

Since the European Union is a multi-lingual community, the question of language is important. Generally speaking, just English versions of texts in some information systems might not be feasible. The developers some information systems could be very interested to have linguistic versions for their information services, but they dont have resources to do that.

Proposal 6: The European Commission could work with global and regional partners for publishing linguistic versions of some important texts in different information systems.

One option is, that the European Commission funds the translation work of some important information systems, and then collects the funded amount of money is collected gradually back, e.g. yearly basis. Naturally, there has to be serious assessment of this approach.

5. European-wide assessment of different licenses / Simplified figures

Another example is Creative Commons license, which have different figures for different licences; here are some examples of these figures.

Attribution-NonCommercial-NoDerivatives 4.0 International

Attribution-NonCommercial 4.0 International

Attribution-NonCommercial-ShareAlike 4.0 International

It is easy to [2] select a Creative Commons licence from the dedicated web page.

Proposal 7: The Commission could work on different standardised licenses (based on Membership, Ownership and Agreements) and specify different figures for these licenses.

6. More and more new identifiers (ID)

1 http://www.euecolabel.eu/, EU Ecolabel for printed paper products

2 http://creativecommons.org/choose/?lang=en, Choosing a Creative Commons license.

In the previous consultations there has been discussion about different identifiers (ID) in the different systems. It can be noted from the previous opinions, that there will be several and different identifiers (ID) for different levels. In the European Union level, there can be several identifiers (ID), e.g. following:

* global identifiers (ID)
* EU-wide identifiers (ID)
* general member state identifiers (ID)
* several identifiers (ID) in a member state.

It can be noted, that some member states (EU) are federations, and different federal states can have their own identifiers (ID).

More IDs is one of the consequences of digitalisation (of everything). The ID is identifier in an information system. Examples of these identifiers are following:

1) Facebook ID for an individual person
2) Facebook ID for the individual up-dates of individuals
3) Data Universal Numbering System (D-U-N-S)
4) Reuters instruments codes (RICs)
5) Social security code for individual citizens in the European Union member states
6) Business identity code for a company in an European Union member state
7) Value added tax code for a company in an European Union member state.

The examples of private IDs (Facebook IDs, Data Universal Numbering System (D-U-N-S), Reuters Instrumens Codes (RICs)) show, that persons and/or communities can use or even demand of using IDs from privately owned information systems.

Social security codes and tax identifier codes are examples of publicly owned information system, and use of public identifiers have spread to several private systems. E.g. in Finland the social security code is so prevalent, that the private companies can possibly combine information from numerous private information systems. Naturally, these combination efforts raise serious questions about the rules and regulations of combining information from private information systems.

There may be new identifiers identifiers based on the development of new cloud systems.

Proposal 8: There could be a systematic project to collect relevant information of different identifiers: e.g. global, EU-wide, regional and national.

When information about relevant identifiers is collected, there could be a serious assessment of possible (near) monopoly situation of some identifiers. Depending on the nature of an identifier, there may be a need for serious (anti-trust?) negotiations with providers of some identifiers.

Proposal 9: The Commission could assess nature of different identifiers.
Proposal 10: The Commission could start serious negotiations with some providers of identifiers.

7. Why use so much text for a simple issue?

The current reality is, that there may be more and more new identifiers, since digitalisation of different areas will result new identifiers and/or combination of new and old identifiers. Another aspect of these public IDs are, that they can demand very comprehensive amount of international diplomacy.

An example is the International Registry pursuant to the Luxembourg Protocol to the Convention on International Interest in Mobile Equipment on Matters specific to Railway Rolling Stock (the Luxembourg Protocol). The mentioned agreement has been signed by the European Union, and the ratification process in underway.

The Reuters Instrumens Codes (RICs) is an example of a near monopoly situation, and some of current private IDs might constitute (near) monopoly situations. Naturally, (near) monopolies can be assessed by the Competition Directorate-General, and it will be interesting to see possible new cases related to private IDs.

The creation YET another public identifier is not always organised by the European Union, and in some cases the European Union (and member states) just have to accept the reality of some of those public identifiers – in some cases even private identifiers are the norm.

In Finland Finnish Business Information System actually combined three previous register together, and the current Business Identity Code have spread to the usage in several private and public systems. Based on this consolidation of three identifiers to just one identifiers, there could be similar work in other application fields.

> **Proposal 11: The Commission could somehow support of consolidation efforts, which could reduce the number of different identifiers.**

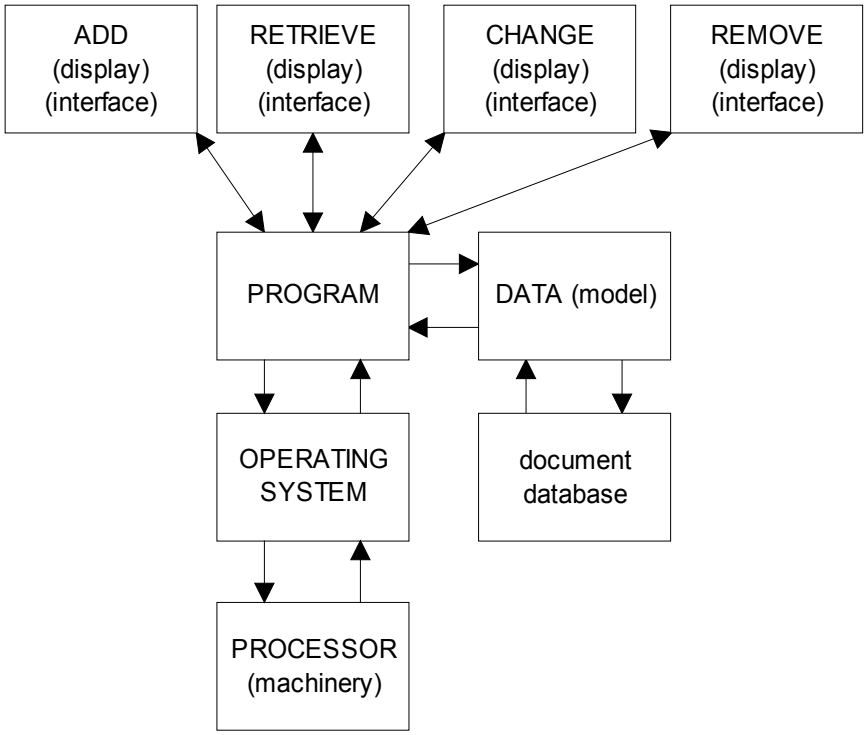
8. Some simple conceptions of information technology

In the center (most arrows) of an information system are programs (software). Without programs there is not any activity in a information system. It can be also noted, that operating system is also part of a information system, since the operating system communicates with processor (machinery). Depending on different data models, programs can use documents/databases.

From this simple (figure) conception we can differentiate several standard classes.

1) Data (documents) standards
2) Data (database) standards
3) Standards for adding data to a system.
4) Standards for retrieving data from a system.
5) Standards for changing data in a system.
6) Standards for removing data from a system.
7) Display standards
8) Interface standards

9) Different communication standards.



The figure above is a simple conception of information technology: especially we should note the difference between documents and databases. It can be noted, that databases can contain links to different documents. We can note that we are mainly working with documents in different forms: e.g. text document, videos, voice, audiovisual and different combinations.

	OPEN	CLOSED
1. Device / Machinery		
2. Operating system		
3. Program(s)		
4. Data model / Conceptual model		
5. Document (Standard)		
6. Database (Standard)		
7. Communications (Standard)		
8. Retrieve / Interface		
9. Add / Interface		
10. Remove / Interface		
11. Change / Interface		

Like the previous figure indicates, the documents can actually change to the database information in a database; the results is naturally new IDs and new databases. The data is consumed/used/etc. by the humans, and their internal mental world can change based on the consumed/used/etc. information. This means, that for some persons the data transmitted with the help of database IDs means something or nothing. Humans use different displays and computer use different interfaces, e.g. a mobile device can access data in an database with an interface, and then the data is converted to the mobile device display.

9. Avoiding lock-ins

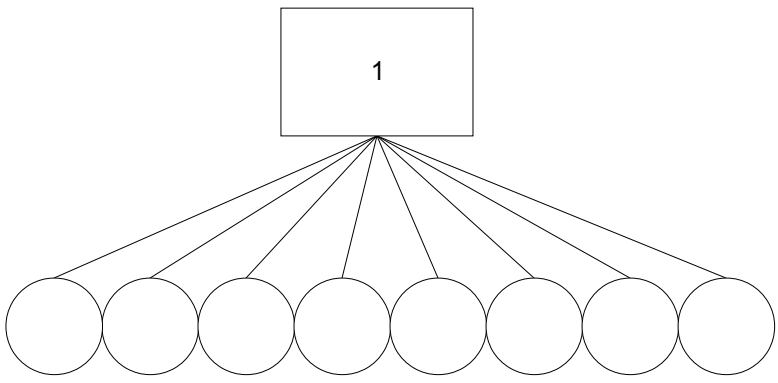
The mentioned functions (11) can be based on open solution or closed solutions. Sometimes there can be different lock-ins based on some closed solutions. Depending on the actual situation of an lock-in, there can be serious problems during the life-cycle of an information system. Depending on the situation, there might be (near) monopoly situation with some lock-ins.

Proposal 12: The Commission could gather together information about different lock-ins in different cloud application fields.
Proposal 13: The Commission could start serious negotiations with some some communities, which are causing some lock-in situation.

10. The needed amount of different interfaces

The actual reality is very complex. In practical terms there are several situations:

* systems must communicate directly with each other
* there will be several communications methods for direct communication
* there are different standards for direct communication
* data in the system is added by processing different documents
* data from the system is extracted and loaded to different documents
* there are different standards for different documents
* there will be several types for different documents
* there are several displays / interfaces to system(s)
* there are several user groups.



Based on the previous differentiation between databases and documents, there can be several different interfaces in a specific system. There is a need for several interfaces to serve external systems / stakeholders. I would differentiate following interface need:

* direct system-to-system connection
* interfaces based on transmitting documents between different systems.

One solution can be standardisation efforts for different interfaces in several systems. The European Commission could work with global and regional partners for creating standardised user interfaces for different stakeholders. These standardised user interfaces could then be implemented by different information systems.

Proposal 14: The Commission can could support work, which rigorously develops and tests different interfaces for different purposes.
Proposal 15: The Commission can advocate standardised user interfaces in the European Union level.

For example, there could be one standardised (EU) interface for security configurations for different cloud applications, which mean that there could be one standardised interface (EU) even though the technology underneath a cloud application could vary.

Most probably the following claims will cause a lot of unrest among ICT specialists:

1. There can be possibly tens of different interfaces (displays)
2. There can be several interfaces (displays) for different user groups
3. Different interfaces will be added and removed irregularly.

One interface to all users will not work, and so-called heavy users will complain about the one interface being too complex and demanding several selections before the actual functions (add, remove, change, retrieve).

For certain ICT specialist, i.e. programmers and database specialists, one interface is a good target, since just getting one interface to work is a good challenge. Therefore creating several interfaces (displays) might cause unrest.

For certain ICT specialist, i.e. usability experts, several displays can be totally non-understandable challenge, since they are used to create one interface with maximum usability – maximum meaning all instructions and all selections well-explained. Also user interface testing is thought to demand several days of testing.

Generally speaking, creating highly usable interfaces is not the norm in many cases; also the problem multiplies when there is just one non-usable interface for a system. Therefore, creating, testing and standardising several interfaces could be an option.

Different stakeholders have their own information systems, which can be very cumbersome and/or antiquated. Here is yet another way for describing information (feed) needs. Four basic functions:

Retrieve, Add, Remove, Change. In the current information technology environment there are .e.g following information system: server, desktop and mobile systems.

Each of these functions can mean real-time system or e.g. systems updated daily. There can be very cumbersome and/or antiquated (customer) systems. Generally speaking, users can divided e.g. in to different classes:

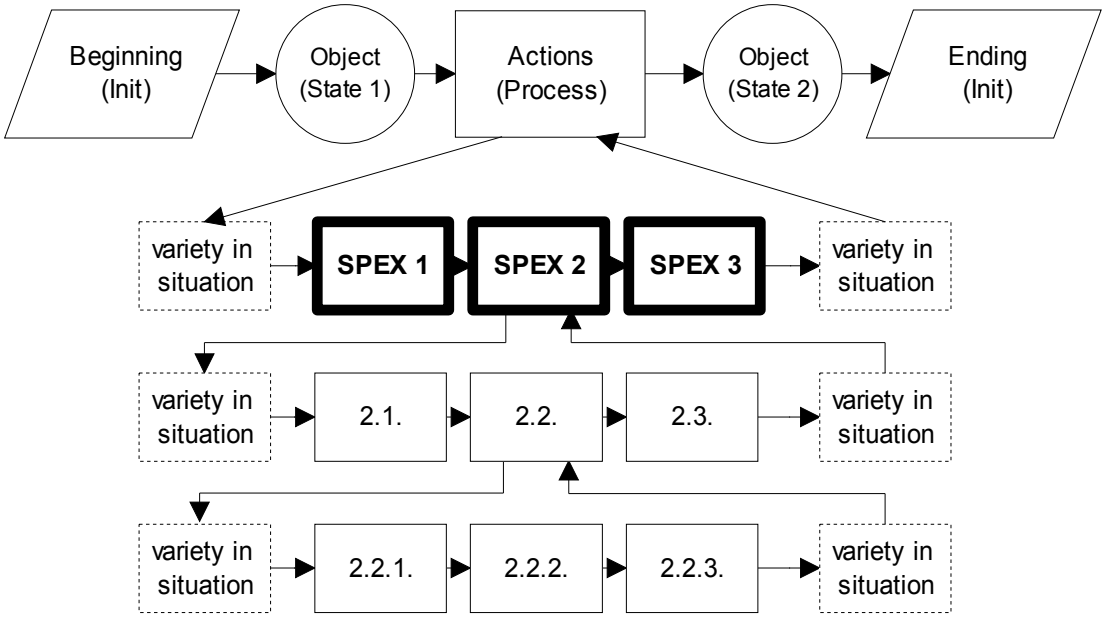
* heavy users – e.g. using the system daily or several times in a day
* casual user – not using daily but montly
* other users – e.g. using system sometime not daily/monthly

So, there can be different user interfaces for different user classes.

11. Concentration on the needed standards

In reality, the distribution and usage (of digital objects) can be described as a process from the beginning to the ending. The level of process description can be on several layers, and different actors have different levels of detail in their processes. In the European level there could be standardisation for some detailed phase(s) in the process (SPEX). For example, part(s) of interfaces could be the same in all relevant systems. Generally speaking, informations system need in some points highly detailed information, and in some cases this information is given by people using displays.

It can be said, that after explicating first the clear outcomes and clear processes there can be very detailed possibilities (SPEX) for the standardisation of the information and communication technology.



Proposal 16: The Commission could specify in a very detailed way possibilities for standardised parts of cloud information systems.
Proposal 17: There can be global solutions for standardised parts of cloud information systems.
Proposal 18: The Commission could gather together information of different standard setting organisations.

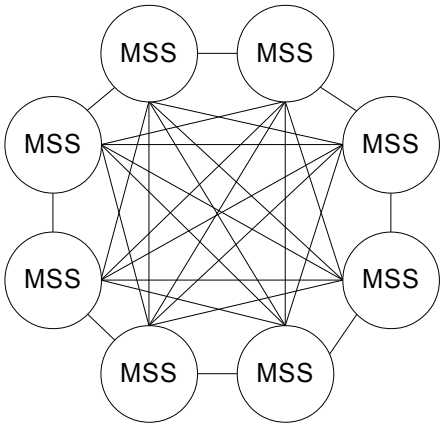
Based on the work done, there can be a list of different standards, which could be relevant. When this list of standards is ready, there could be consultations for clarifying stakeholders´ support of different standards.

Proposal 19: The Commission could consult different stakeholders to find out support for different standards.

One option is to distribute consultation information to members of different information technology experts associations.

12. Avoiding redundant work (or standards)

1

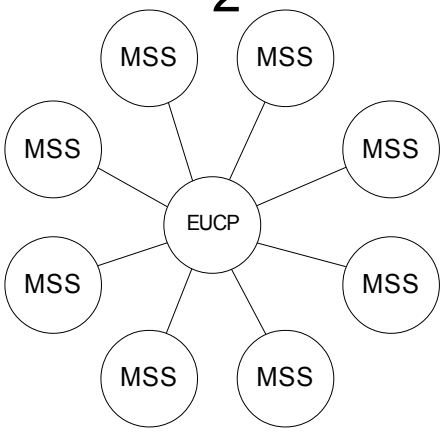


In member states (EU) there are hundreds of different informations systems (MSS = as member state information system). It can be concluded, that these systems are layered in different ways and implement several standard (technology) generations. Generally speaking, there can be several many-to-many connections, which are very cumbersome to implement and maintain.

Generally speaking, in different members states (EU) there are unique situations and unique information systems, when creating cooperation between different copyright holder. These information system can be very specialised, and we can call them as Member State Systems (MSS). The other extreme would be, that there would be just only one system (MSS) in a member state system, and it could be connected to just one European contact point (EUCP).

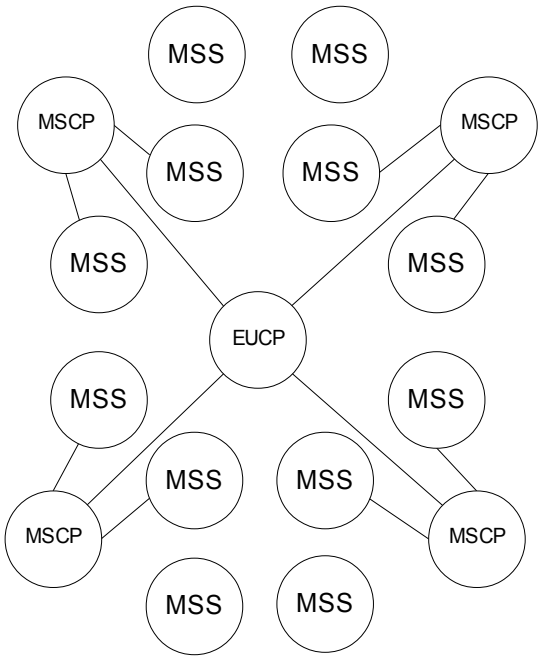
In the Europan Union level there is need to extract information from different member state systems, and then there is a European contact point (EUCP) for this cooperation between different information systems.

2

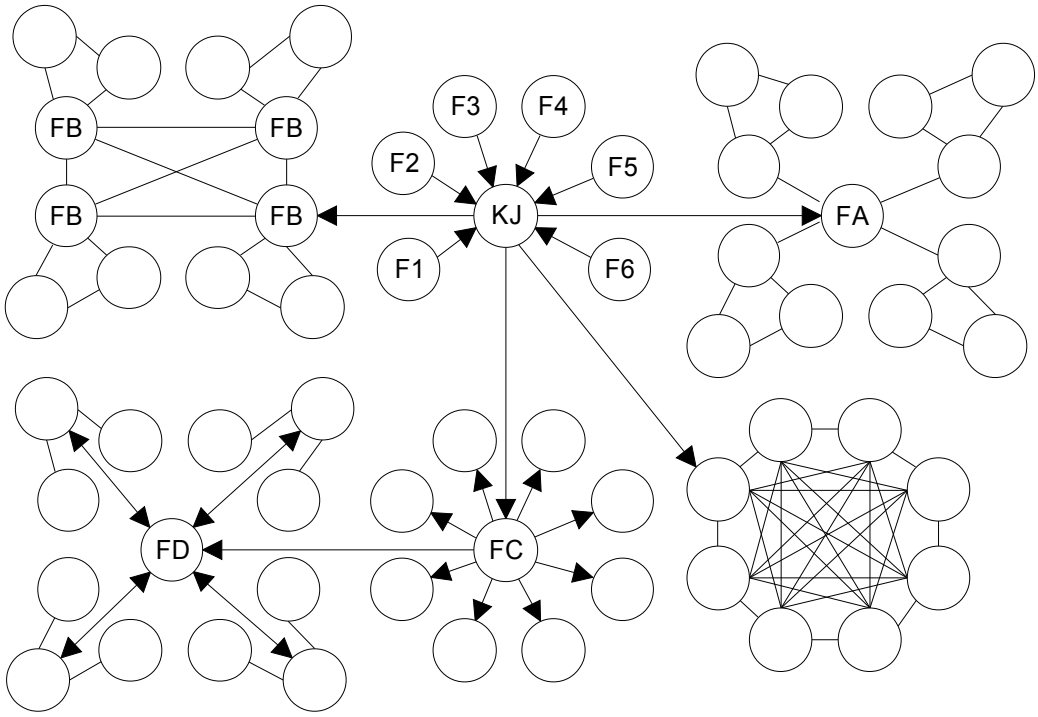


The practical reality is, that there will be several systems (MSS) in different member states. Therefore, there should be Member State Contact Point (MSCP) and the European Contact point (EUCP). Then different member states can consolidate own information systems with the Member State Contact Point (MSCP).

3



In previous consultations I have advocated of creating separate member state contact points (MSCP) and a separate European Union contact point (EUCP). In this way it easier for member state to consolidate different information system with their own timetable.



Like indicated in the previous figure, different informations systems are tightly integrated, and the feeds (e.g. formats F1-F6, FA, FB, FC, FC, FD) between systems can be non-standard or standardised. Generally speaking, there are numerous feeds provided by different information systems. The European Commission could assess the situation, and it could fund the conversion work for some information systems.

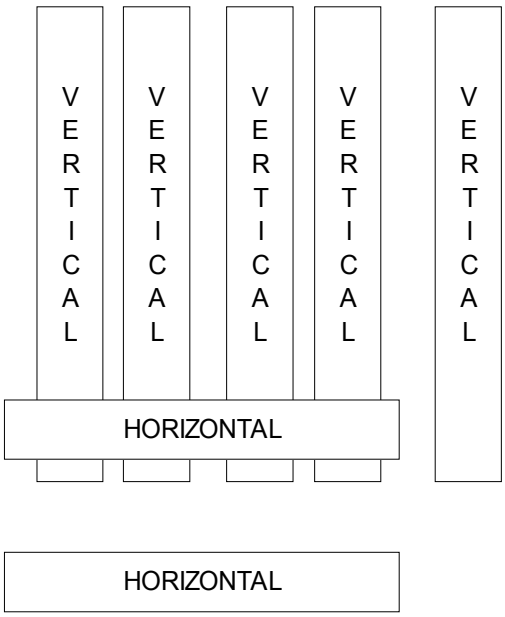
There can be Member State Contact Points (MSCP), which integrates member state systems (MSSs), and this Member State Contact Point (MSCP) integrates to the European Contact Point (EUCP). In reality there are a huge collection of different Member State Systems (MSSs), which are constructed with wide variety of technologies.

Proposal 20: The Commission should start implementing the proposed standards from European Union contact point(s) (EUCP) to member state contact points (MSCP).

13. One theme: horizontal standards and vertical standards

One of the main themes can be division standards: horizontal standards and vertical standards. What this means? Generally speaking, different ICT solutions will implement a large collection of different standards: open standards and closed standards. In many cases, different ICT solutions do

not work together and this might not constitute a problem. However, in many cases different ICT solutions has to work together seamlessly – possibly without further problems.



Proposal 21: There could be separation of horizontal standards and vertical standards.
Proposal 22: There could be different standardisation efforts to horizontal standards and vertical standards.
Proposal 23: Developing horizontal standards should favoured in the development of new and/or revised standards.

It can be said, that in some point there will be need for horizontal standardisation. This means, that several vertical systems can cooperate in different levels. The general development is, that there can be several vertical solutions for the same computerisation area. An example for this standardisation is the email standard (horizontal), when there are numerous email systems (vertical) created with very wide variety of technologies.

Proposal 24: The Commission can collect all relevant information about horizontal standards.
Proposal 25: The Commission can collect all relevant information about vertical standards.

14. Questionnaires for the members of different stakeholders (associations)

One idea is distributing questionnaires for [3] different IT expert associations, and members of those associations could assess different IT standard proposals. Nowadays a lot of questionnaires can be distributed and answered using different electronic measures.

3 http://www.ttlry.fi/english, e.g. The Finnish Information Processing Association, FIPA, (Tietotekniikan liitto ry)

Proposal 26: Part of the evaluation could be organising (electronic) questionnaires for members of different stakeholder/expert associations based on the application field.

The questionnaires can be very structured or very free-form. The advantage of very structured questionnaire is naturally the ease of processing the results of an questionnaire. Answers to free-form questionnaires can result a lot of documents, and their assessment can mean a lot of manual processing.

15. Summary

There are a lot of different issues for organising trusted cloud environments in the European Union. Based on different constructive ideas, the Commission could update/create work program for cloud computing.

16. Good luck !!!

This opinion is quite limited. Hopefully, there are constructive ideas presented in other opinions. This remains to be seen.

[Continues on the next page]

ANNEX 1

My opinions to the previous and relevant consultations – there consultations were mostly organised by the Commission of the Europan Union. General page to all consultations – both in English and in Finnish: http://www.jukkarannila.fi/lausunnot.html

EN: Opinion 1: Review of the rules on access to documents
http://www.jukkarannila.fi/lausunnot.html#nro_1

EN: Opinion 2: Schools for the 21st Century
http://www.jukkarannila.fi/lausunnot.html#nro_2

EN: Opinion 3: The future of pharmaceuticals for Human use in Europe- making Europe a Hub for Safe and Innovative medicines
http://www.jukkarannila.fi/lausunnot.html#nro_3

EN: Opinion 5: Consumer Scoreboard, Questionnaire for stakeholders
http://www.jukkarannila.fi/lausunnot.html#nro_5

EN: Opinion 6: Consultation on a Code of Conduct for Interest Representatives
http://www.jukkarannila.fi/lausunnot.html#nro_6

EN: Opinion 8: European Interoperability Framework, version 2, draft
http://www.jukkarannila.fi/lausunnot.html#nro_8

EN: Opinion 9: CAMSS: Common Assessment Method for Standards and Specifications, CAMSS proposal for comments
http://www.jukkarannila.fi/lausunnot.html#nro_9

EN: Opinion 15: Collective Redress
http://www.jukkarannila.fi/lausunnot.html#nro_15

EN: Opinion 17: Opinion to Antitrust Case No. COMP/C-3/39.530
http://www.jukkarannila.fi/lausunnot.html#nro_17

EN: Opinion 18: Opinion Related to the Public Undertaking by Microsoft
http://www.jukkarannila.fi/lausunnot.html#nro_18

EN: Opinion 19: Official Acknowledgement by the Commission
http://www.jukkarannila.fi/lausunnot.html#nro_19

EN: Opinion 20: SECOND Opinion Related to the Public Undertaking by Microsoft
http://www.jukkarannila.fi/lausunnot.html#nro_20

EN: Opinion 21: Opinion about the European Interoperability Strategy proposal
http://www.jukkarannila.fi/lausunnot.html#nro_21

EN: Opinion 23: Public consultation on the review of the European Standardisation System
http://www.jukkarannila.fi/lausunnot.html#nro_23

EN: Opinion 27: Public Consultation on the Modernisation of EU Public Procurement Policy
http://www.jukkarannila.fi/lausunnot.html#nro_27

EN: Opinion 28: Consultation on the Europe 2020 Project Bond Initiative
http://www.jukkarannila.fi/lausunnot.html#nro_28

EN: Opinion 30: Internet Filtering
http://www.jukkarannila.fi/lausunnot.html#nro_30
NOTE: Organised by the European Committee for Standardization (CEN) [4]

EN: Opinion 32: COMP/C-3/39.692/IBM – Maintenance services
http://www.jukkarannila.fi/lausunnot.html#nro_32

EN: Opinion 34: REMIT Registration Format
http://www.jukkarannila.fi/lausunnot.html#nro_34
NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER) [5]

EN: Opinion 35: Exploiting the employment potential of the personal and household services
http://www.jukkarannila.fi/lausunnot.html#nro_35

EN: Opinion 37: CASE COMP/39.654 - Reuters instrument codes
http://www.jukkarannila.fi/lausunnot.html#nro_37

EN: Opinion 39: Registry options to facilitate linking of emissions trading systems
http://www.jukkarannila.fi/lausunnot.html#nro_39

EN: Opinion 40: Media Freedom and Pluralism / audiovisual regulatory bodies
http://www.jukkarannila.fi/lausunnot.html#nro_40

EN: Opinion 41: AT.39398: observations on the proposed commitments
http://www.jukkarannila.fi/lausunnot.html#nro_41

EN: Opinion 42: Opening up Education
http://www.jukkarannila.fi/lausunnot.html#nro_42

4 http://www.cen.eu/ (Accessed 2 July 2012)
5 http://www.acer.europa.eu/ (Accessed 2 July 2012)

EN: Opinion 43: Publication of extracts of the European register of market participants
http://www.jukkarannila.fi/lausunnot.html#nro_43
NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER)

EN: Opinion 44: Evaluation policy guidelines
http://www.jukkarannila.fi/lausunnot.html#nro_44

EN: Opinion 45: About ICT standardisation
http://www.jukkarannila.fi/lausunnot.html#nro_45

EN: Opinion 46: Review of the EU copyright rules
http://www.jukkarannila.fi/lausunnot.html#nro_46

EN: Opinion 51: European Area of Skills and Qualifications
http://www.jukkarannila.fi/lausunnot.html#nro_51

My opinions to the previous and relevant consultations – there consultations were mostly organised by the Commission of the Europan Union. General page to all consultations – both in English and in Finnish: http://www.jukkarannila.fi/lausunnot.html

[Continues on the next page]

ANNEX 2

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6 Based on the Finnish three-party system there is a phenomenon called extreme-centre in Finland. The 2011 parliamentary elections in Finland challenge the three-party system, since three “old” parties were not traditionally as the three largest parties. The is now a “new” party as the third largest party. We all must remain being interested about this new development in Finland.