Jukka S. Rannila OPINION 1 (17)

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Delivered electronically to: CNECT-GREEN-PAPER-mHealth@ec.europa.eu **European Commission** DG Communications Networks, Content and Technology 31, Avenue de Beaulieu Unit H1, Health & Well-Being Brussels 1049 - Belgium Opinion based on the green paper on mobile Health ("mHealth") (COM(2014) 219 final First of all, a lot of thanks to DG Communications Networks, Content and Technology (CNECT) 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. DG Communications Networks, Content and Technology (CNECT) can add the PDF file of this opinion to a relevant web page. Annex 1 holds information about previous consultations. Annex 2 holds information about disclaimers and copyright. Best Regards, Jukka S. Rannila citizen of Finland signed electronically

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Part 1: General notes before answering the questions (COM(2014) 219 final)

Previous consultations organised by the European Commission

In Annex 1 is a list of previous consultation addressed mainly to different DGs.

I do not know about the cooperation between different DGs and between different units inside specific DGs. However, it can be concluded from the previous consultation answers, that different consultations organised by the European Commission (Units / DGs) have highlighted different aspects of digitalisation (of everything).

Possibly previous consultations could be useful for evaluating some mobile health proposals.

Some contributions from the previous consultations?

One of the main contributions from the previous consultations has been simplified descriptions of information technology. In many consultation documents, there has been quite ambiguous descriptions about information technology in different application fields.

This consultation / green paper on mobile Health ("mHealth") (COM(2014) 219 final)

In reality mobile health applications will be a new layer for existing / current systems. Generally speaking, there are hundreds/thousands of different information technology applications in the member states (EU).

Some member states (e.g. Estonia) have been able to establish their new information systems with a limited number of previous / existing information systems, and their new information systems have been in the internet-based systems from the beginning. E.g. in Finland the current Government has been very interested about the X-Road ¹ system(s) used in Estonia.

 Based on the Estonian-Finnish discussion it can be said, that cooperation of the Finnish information systems with possible Finnish X-Road will be quite difficult, since Finland has so many old systems. So, possible Finnish mobile health applications may demand a lot of work – legislative, administrative and technical work.

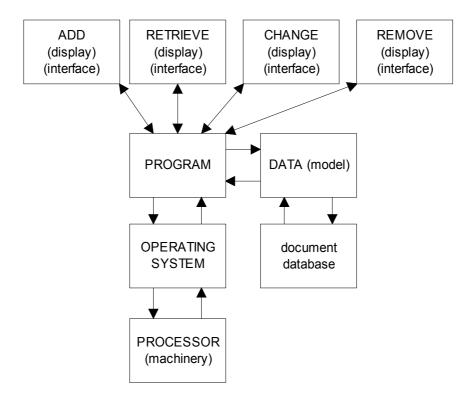
Mobile health – explicating the nature of an application field

One simple conception of information technology solutions is the following figure.

The figure gives us 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.

¹ https://www.ria.ee/x-road-factsheets-2014/, X-Road factsheets 2014, the link worked on 24 June 2014

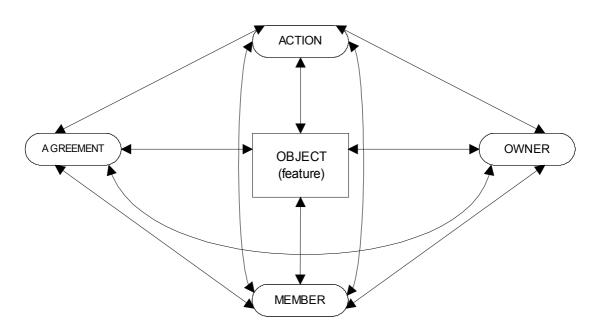
88 It can be said, that in all parts of an information systems there can be open solutions and closed solutions.



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The mentioned linkages linkages between ownership, agreements and membership can also be divided to two actions: distribution and usage. There is nothing new on the previous explanations. However, the difference between distribution and usage should be as clear as possibile.



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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.

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

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	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			

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It can be said, that this consultation (mobile health) is rather general, and there are possibilities for assessing different combinations of different features for mobile health applications.

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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.

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

Proposal 1: The European Commission could organise answers of this consultation based on different combinations explicated in the consultation answers, i.e. Owner, Member, Agreement, Open, Closed and different basic functions (Add, Retrieve, Change, Remove).

Note: The relations between different aspects of information systems can result rather complicated network(s).

Actual reality / Different standards and standards versions

Previously I have advocated open standards for mobile health systems.

It is quite normal situation in the information technology field that there is competing standards for some application field. Therefore there is 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.

Therefore, there should be serious vigilance when assessing different standards and "standards" in some application field, e.g. mobile health.

In the previous consultations the European Commission (DG Competition) has organised Market Tests based on commitments provided by different companies, e.g. Microsoft, IBM, Reuters and VISA. In some cases there has been a (near) monopoly situation, and in some cases different standards has been (so called) de facto standards. Usage of some de facto standards demand e.g. licence fees or other monetary requests, and the European Commission (DG Competition) has been active to assess the monopoly/antitrust aspects of some de facto standards.

Proposal 2: European Commission (DG Communications Networks, Content and Technology, CNECT) could gather information about current standards used in the mobile health application field(s).

There might be some de facto standards, which may be hindering competition in some mobile health application field(s).

Proposal 3: The European Commission (DG Communications Networks, Content and Technology, CNECT) could assess the (near) monopoly situation with current standards used in the mobile health application field(s).

Proposal 4: The need for some antitrust actions has to be assessed carefully after the gathering the information about different standards in the mobile health application fields – especially de facto standards.

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Previously 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 buying power due to its purchasing (power), and therefore public sector can sometimes direct markets to certain standards.

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However, creating a new standard means actual both administrative and technical work, and in some cases creating a new standard can last quite long. There are a lot of different standard setting organisations (SDO), and one comprehensive list is provided ² for us by ConsortiumInfo.org.

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Proposal 5: The European Commission (DG Communications Networks, Content and Technology, CNECT) could assess current standardisation efforts of different standard setting organisations (SDOs).

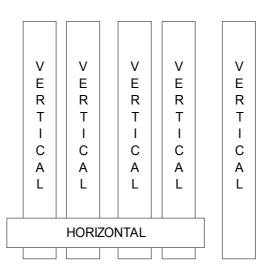
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Proposal 6: The European Commission (DG Communications Networks, Content and Technology, CNECT) could fund development of some important standard(s).

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Supporting and/or developing different standard types



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187 188 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.

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Proposal 7: There could be separation of horizontal standards and vertical standards.

² http://www.consortiuminfo.org/links/linksall.php, Standard Setting Organizations and Standards List

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Proposal 8: There could be different standardisation efforts to horizontal standards and vertical standards.

Proposal 9: Developing (and possible funding of development) horizontal standards should favoured in the development of new and/or revised standards.

An example can be different email standards. There are numerous email systems developed with numerous technologies (vertical), but the cooperation between numerous email systems is possible with different (horizontal) email standards.

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

Standardisation of interfaces for customers (citizens)

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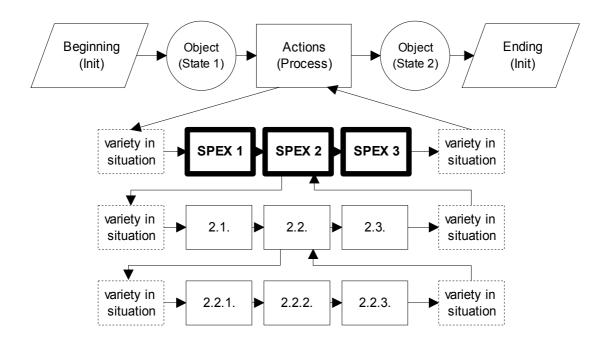
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In previous consultations I have advocated standardisation of interfaces. There are different processes (Beginning \rightarrow Actions \rightarrow Ending), which can be described in different levels of details.



There can be highly detailed points in different processes (SPEX), which could be standardised.

Proposal 10: There could be a project for modelling different customer (care) processes.

Proposal 11: Some parts of the customer (care) processes could be standardised for customer interfaces (SPEX).

Proposal 12: Some standardised customer interfaces (SPEX) could be used for having

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better customer (care) processes.

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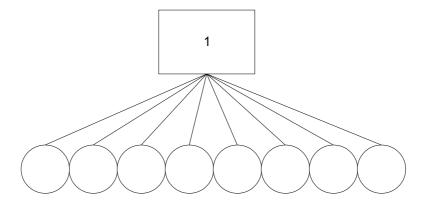
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It can be noted, that different actors can naturally have other non-standardised interfaces for customer(s) (care), and there is nothing wrong with that approach. Also, we have to assess the need for several customer (care) interfaces. In other words, different stakeholder groups need different interfaces, and identity proofing is not an exception of this situation.

In the previous consultations documents I have explicated the need for standardisation of some interfaces. In practical reality, there can be different information technology applications for the same operations, e.g. standardised interfaces for patients. It could be feasible to create different standardised interfaces, which can be implemented with different technologies.



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235 Proposal 13: There could be a project for analysing the quality and the quantity of different interfaces for different stakeholder groups, e.g. patients as one group.

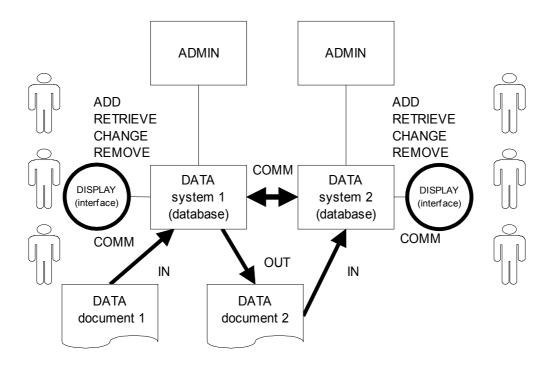
Proposal 14: European Commission can advocate standardised user interfaces in different levels.

Naturally, there can be even tens of different user interfaces depending on the nature of different systems. 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.

The following figure tries to explicate these features of information systems.

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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 15: The Commission can could support work, which rigorously develops and tests different interfaces for different purposes.

In reality there can be some applications (e.g. A, B, C) for the same operations, and there can be different providers for the same solutions. IF every solution has a different interface, there can be a serious hindrance with the needed education for a new interface. When there are some standardised interfaces (SPEX), the efforts for learning of a new interface can be minimised.

Part 2: Answering the questions (COM(2014) 219 final)

Question (COM(2014) 219 final, page 9):

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Which specific security safeguards in mHealth solutions could help to prevent unnecessary and unauthorised processing of health data in an mHealth context?

Proposal 16: Like mentioned before, standardisation of some interfaces could help different stakeholder groups, and some security interfaces could be standardised.

Question (COM(2014) 219 final, page 9):

How could app developers best implement the principles of "data minimisation" and of "data protection by design, and "data protection by default" in mHealth apps?

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Proposal 17: One option is to standardise models in databases.

Proposal 18: One option is to standardise documents, which are distributed between systems.

NOTE: e.g. in Finland different models in different database systems have been cause for serious problems when trying to create actual cooperation with different systems.

Question (COM(2014) 219 final, page 10):

What measures are needed to fully realise the potential of mHealth generated "Big Data" in the EU whilst complying with legal and ethical requirements?

Proposal 19: One option is to create "Big Data" licences for different application fields.

Question (COM(2014) 219 final, page 11):

Are safety and performance requirements of lifestyle and wellbeing apps adequately covered by the current EU legal framework?

Opinion: I dont know the situation in all member states.

Ouestion (COM(2014) 219 final, page 11):

Is there a need to strengthen the enforcement of EU legislation applicable to mHealth by competent authorities and courts; if yes, why and how?

Opinion: I dont know the situation in all member states.

Question (COM(2014) 219 final, page 13):

What good practices exist to better inform end-users about the quality and safety of mHealth solutions (e.g. certification schemes)?

Opinion: I dont know the situation in all member states.

Ouestion (COM(2014) 219 final, page 13):

Which policy action should be taken, if any, to ensure/verify the efficacy of mHealth solutions?

Opinion: I dont know the situation in all member states.

Proposal 20: Technically speaking, there should be different testing environments and/or test suites for creating efficient information systems.

Proposal 21: Different testing environments and/or test suites could be the basis for information systems procurement.

Question (COM(2014) 219 final, page 13):

Jukka S. Rannila **OPINION** 11 (17) 26 June 2014 Public / WWW www.jukkarannila.fi How to ensure the safe use of mHealth solutions for citizens assessing their health and wellbeing? Proposal 22: Like said before, assessing current standardisation efforts can be the starting point for creating mHealth solutions. Opinion: The amount of redundant standardisation should be minimal. **Question (COM(2014) 219 final, page 14):** Do you have evidence on the uptake of mHealth solutions within EU's healthcare systems? **Opinion:** I dont know the situation in all member states. **Question (COM(2014) 219 final, page 14):**

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higher quality care (e.g. clinical guidelines for use of mHealth)?

Question (COM(2014) 219 final, page 14): Do you have evidence of the contribution that mHealth could make to constrain or curb healthcare costs in the EU?

What good practices exist in the organisation of healthcare to maximise the use of mHealth for

Opinion: I dont know the situation in all member states.

Opinion: I dont know the situation in all member states.

Question (COM(2014) 219 final, page 14):

What policy action could be appropriate at EU, as well as at national, level to support equal access and accessibility to healthcare via mHealth?

Proposal 23: Like said before, standardisation of some interfaces could be the starting point for mHealth systems.

Proposal 24: European Commission could gather information of the used standards in national (mHealth) systems.

Proposal 25: Based on the analysis of national (mHealth) system standards there could be a decision of developing different standards in the European Union level.

Opinion: The amount of redundant standardisation should be minimal.

Question (COM(2014) 219 final, page 15):

What, if anything, do you think should be done, in addition to the proposed actions of the eHealth Action Plan 2012-2020, in order to increase interoperability of mHealth solutions?

Opinion: This question has been answered before.

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371	Question	(COM(2014)	219	final,	page 1	15)):
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372 Do you think there is a need to work on ensuring interoperability of mHealth applications with 373

Electronic Health Records? And if yes by whom and how?

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Opinion: The Finnish case of interoperability between different (e.g. electronic health systems) systems is an example of a disastrous situation.

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Opinion: Standardisation has been proposed in previous proposals.

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Question (COM(2014) 219 final, page 16):

Which mHealth services are reimbursed in the EU Member States you operate in and to what extent?

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Opinion: I dont know the situation in all member states.

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Question (COM(2014) 219 final, page 16):

What good practice do you know of that supports refund of mHealth services (e.g. payerreimbursement model, fee-for-a service model, other)? Please give evidence.

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Opinion: I dont know the situation in all member states.

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Ouestion (COM(2014) 219 final, page 17):

What recommendations should be made to mHealth manufacturers and healthcare professionals to help them mitigate the risks posed by the use and prescription of mHealth solutions?

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Opinion: This has been answered before.

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Question (COM(2014) 219 final, page 17):

Could you provide specific topics for EU level research & innovation and deployment priorities for mHealth?

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Opinion: I dont know the situation in all member states.

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Ouestion (COM(2014) 219 final, page 18):

How do you think satellite applications based on EU navigation systems (EGNOS and Galileo) can help the deployment of innovative mHealth solutions?

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Opinion: I dont know the situation in all member states.

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Question (COM(2014) 219 final, page 18):

Which issues should be tackled (as a priority) in the context of international cooperation to increase mHealth deployment and how?

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Proposal 26: Previously mentioned analysis of systems in national level may result ideas for international cooperation, e.g. standardisation possibilities.

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Question (COM(2014) 219 final, page 18):

Which good practice in other major markets (e.g. US and Asia) could be implemented in the EU to boost mHealth deployment?

Opinion: I dont know the worldwide situation.

Question (COM(2014) 219 final, page 18):

Is it a problem for web entrepreneurs to access the mHealth market? If yes, what challenges do they face? How can these be tackled and by whom?

Proposal 27: Like said before, the licences for different functions in information systems has to be assessed very critically.

Proposal 28: The used standards should be public and free.

Question (COM(2014) 219 final, page 18):

If needed, how could the Commission stimulate industry and entrepreneurs involvement in mHealth, e.g. through initiatives such as "Startup Europe" or the European Innovation Partnership on Active and Healthy Ageing?

Opinion: I dont know the situation in all member states.

Proposal 29: The Commission could directly fund and support different standard setting organisations bases on the analysis of different standards in the European Union level and in the national level.

Good luck !!!

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

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450	ANNEX 1
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453	My opinions to the previous and relevant consultations – there consultations were mostly organised
454	by the Commission of the Europan Union. General page to all consultations – both in English and
455	in Finnish: http://www.jukkarannila.fi/lausunnot.html
456	
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458	EN: Opinion 1: Review of the rules on access to documents
459	http://www.jukkarannila.fi/lausunnot.html#nro_1
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461	EN: Opinion 2: Schools for the 21st Century
462	http://www.jukkarannila.fi/lausunnot.html#nro_2
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464	EN: Opinion 3: The future of pharmaceuticals for Human use in Europe- making Europe a Hub for
465	Safe and Innovative medicines
466	http://www.jukkarannila.fi/lausunnot.html#nro_3
467	
468	EN: Opinion 5: Consumer Scoreboard, Questionnaire for stakeholders
469	http://www.jukkarannila.fi/lausunnot.html#nro_5
470	
471	EN: Opinion 6: Consultation on a Code of Conduct for Interest Representatives
472	http://www.jukkarannila.fi/lausunnot.html#nro_6
473	
474	EN: Opinion 8: European Interoperability Framework, version 2, draft
475	http://www.jukkarannila.fi/lausunnot.html#nro_8
476	
477	EN: Opinion 9: CAMSS: Common Assessment Method for Standards and Specifications, CAMSS
478	proposal for comments
479	http://www.jukkarannila.fi/lausunnot.html#nro_9
480	
481	EN: Opinion 15: Collective Redress
482	http://www.jukkarannila.fi/lausunnot.html#nro_15
483	
484	EN: Opinion 17: Opinion to Antitrust Case No. COMP/C-3/39.530
485	http://www.jukkarannila.fi/lausunnot.html#nro_17
486	
487	EN: Opinion 18: Opinion Related to the Public Undertaking by Microsoft
488	http://www.jukkarannila.fi/lausunnot.html#nro_18
489	
490	EN: Opinion 19: Official Acknowledgement by the Commission
491	http://www.jukkarannila.fi/lausunnot.html#nro_19
492	

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494 EN: Opinion 20: SECOND Opinion Related to the Public Undertaking by Microsoft

495 http://www.jukkarannila.fi/lausunnot.html#nro_20

497 EN: Opinion 21: Opinion about the European Interoperability Strategy proposal

498 http://www.jukkarannila.fi/lausunnot.html#nro 21

500 EN: Opinion 23: Public consultation on the review of the European Standardisation System

501 http://www.jukkarannila.fi/lausunnot.html#nro 23

503 EN: Opinion 27: Public Consultation on the Modernisation of EU Public Procurement Policy

504 http://www.jukkarannila.fi/lausunnot.html#nro 27

506 EN: Opinion 28: Consultation on the Europe 2020 Project Bond Initiative

507 http://www.jukkarannila.fi/lausunnot.html#nro 28

509 EN: Opinion 30: Internet Filtering

510 http://www.jukkarannila.fi/lausunnot.html#nro 30

511 NOTE: Organised by the European Committee for Standardization (CEN)³

513 EN: Opinion 32: COMP/C-3/39.692/IBM – Maintenance services

514 http://www.jukkarannila.fi/lausunnot.html#nro 32

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516 EN: Opinion 34: REMIT Registration Format

517 http://www.jukkarannila.fi/lausunnot.html#nro 34

NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER) ⁴

519

520 EN: Opinion 35: Exploiting the employment potential of the personal and household services

521 http://www.jukkarannila.fi/lausunnot.html#nro 35

522

523 EN: Opinion 37: CASE COMP/39.654 - Reuters instrument codes

524 http://www.jukkarannila.fi/lausunnot.html#nro_37

525

526 EN: Opinion 39: Registry options to facilitate linking of emissions trading systems

527 http://www.jukkarannila.fi/lausunnot.html#nro 39

528

529 EN: Opinion 40: Media Freedom and Pluralism / audiovisual regulatory bodies

530 http://www.jukkarannila.fi/lausunnot.html#nro 40

531

EN: Opinion 41: AT.39398: observations on the proposed commitments

533 <u>http://www.jukkarannila.fi/lausunnot.html#nro_41</u>

534

535 EN: Opinion 42: Opening up Education

536 http://www.jukkarannila.fi/lausunnot.html#nro 42

^{3 &}lt;a href="http://www.cen.eu/">http://www.cen.eu/ (Accessed 2 July 2012)

^{4 &}lt;a href="http://www.acer.europa.eu/">http://www.acer.europa.eu/ (Accessed 2 July 2012)

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537 538 EN: Opinion 43: Publication of extracts of the European register of market participants 539 http://www.jukkarannila.fi/lausunnot.html#nro 43 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER) 540 541 542 EN: Opinion 44: Evaluation policy guidelines http://www.jukkarannila.fi/lausunnot.html#nro 44 543 544 EN: Opinion 45: About ICT standardisation 545 http://www.jukkarannila.fi/lausunnot.html#nro 45 546 547 548 EN: Opinion 46: Review of the EU copyright rules 549 http://www.jukkarannila.fi/lausunnot.html#nro 46 550 551 EN: Opinion 51: European Area of Skills and Qualifications http://www.jukkarannila.fi/lausunnot.html#nro 51 552 553 554 EN: Opinion 52: Trusted Cloud Europe Survey 555 http://www.jukkarannila.fi/lausunnot.html#nro 52 556 557 EN: Opinion 53: Trade Reporting User Manual (TRUM) (Draft) http://www.jukkarannila.fi/lausunnot.html#nro 53 558 559 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER) 560 561 EN: Opinion 55: European Energy Regulation http://www.jukkarannila.fi/lausunnot.html#nro 55 562 563 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER) 564 565 566 567 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 568 569 in Finnish: http://www.jukkarannila.fi/lausunnot.html 570 571

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ANNEX 2

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Use of broken English

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⁵ 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.