

1

2 TO:

3 Unit D2: Interoperability

4 Directorate-General for Informatics

5 European Commission

6

7

8 **Ref. Ares(2020)5562536 - 15/10/2020**

9 **Interoperable digital public services — European interoperability framework (EIF)**  
10 **evaluation & strategy**

11

12 First of all, a lot of thanks to Directorate-General for Informatics (Unit D2) for organising this  
13 important consultation.

14

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

16

17 This opinion does not contain:

18 – any business secrets

19 – any trade secrets

20 – any confidential information.

21

22 This opinion is public.

23 PDF file of this opinion can be added to a relevant web page.

24

25 Annex 1 holds information about previous consultations at the European Union level.

26 Annex 2 holds information about copyright, licence and disclaimers.

27

28

29

30 Best Regards,

31

32

33

34 Jukka S. Rannila

35 citizen of Finland

36

37 signed electronically

38

39

40 [Continues on the next page]

41

42

43

44 **About previous consultations / Repeating several issues**

45

46 Annex 1 holds information about previous consultations. I have repeated the same issues several  
 47 times and previous consultation documents can be assessed critically. Different units of the  
 48 European Commission already know something about my previous opinions.

49

50 **Highlighting only some issues**

51

52 This opinion does not handle all issues which are mentioned on the consultation document. I have  
 53 presented different issues to different units of the European Commission. Generally speaking many  
 54 proposals are already implemented and therefore I don't present all possible issues based on this  
 55 consultation.

56

57 **Consultation document is technologically neutral and does not mentioning any company  
58 names**

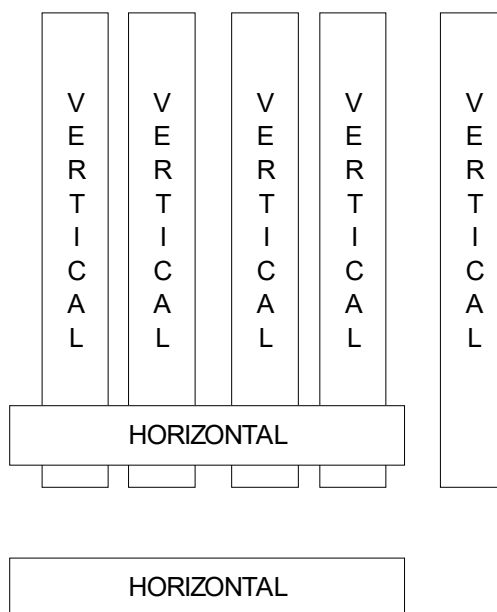
59

60 It is fully understandable that the consultation document is technologically neutral. It is also fully  
 61 understandable that the consultation document does not mention specific company names.

62

63 **Favouring horizontal standards**

64



65

66

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

71  
72 **Proposal: There could be assessment of vertical and horizontal standards.**

73  
74 **Proposal: Using horizontal standards could be favoured when creating different**  
75 **information systems on the European Union level.**

76  
77 Horizontal standards enables technological solutions which can work together. Horizontal standards  
78 hides different complexities in information systems.

79  
80 **Opinion: The number of redundant standardisation efforts should be minimal.**

81  
82 **Proposal: There could be separation of horizontal standards and vertical standards.**

83  
84 **Proposal: There could be different standardisation efforts to horizontal standards and**  
85 **vertical standards.**

86  
87 Personally I have advocated using different horizontal standards. For example email standards  
88 (horizontal) are implemented with very different technologies (vertical).

89  
90 Here we can note some problems:

- 91
- 92 • some systems are based on **de-facto** standards
  - 93 • some systems are based on **de-jure** standards
  - 94 • there can be confrontations between **de-facto** and **de-jure** standards
  - 95 • there can be a monopoly situation in some domain
  - 96 • some standards may inhibit possible actions of some stakeholders
  - 97 • there can be a standard war on some domains
  - 98 • standards have different life-cycles
  - 99 • systems have different life-cycles
  - 100 • there can be mismatches between different life-cycles
  - 101 • there can be failed standards
  - 102 • there can be deprecated standards.
- 103

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

108  
109 I have advocated open standards even though in some cases open standards are not de facto  
110 standards. In practice public sector has very important role, when some standards are competing in  
111 the market place. Because public sector has a considerable power when buying/developing  
112 information systems and therefore public sector can sometimes direct markets to certain standards.  
113 Therefore there should be serious vigilance when assessing different standards and “standards” in  
114 some application fields.

115

116 There are different standards setting organisations on the information technology field. One list <sup>1</sup> of  
117 these standards setting organisations is provided by ConsortiumInfo.org.

118

119 One warning can be said about standards setting organisations. All standards setting organisations  
120 are not successes based on several factors and there can may irrelevant standards setting  
121 organisations. Market situation on different vehicle markets varies a lot based on different factors.

122

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

125

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

128

129 **Proposal: Governments should especially concentrate on horizontal standards.**

130

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

133

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

136

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

139

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

142

143 **Adding more details for information technology solutions**

144

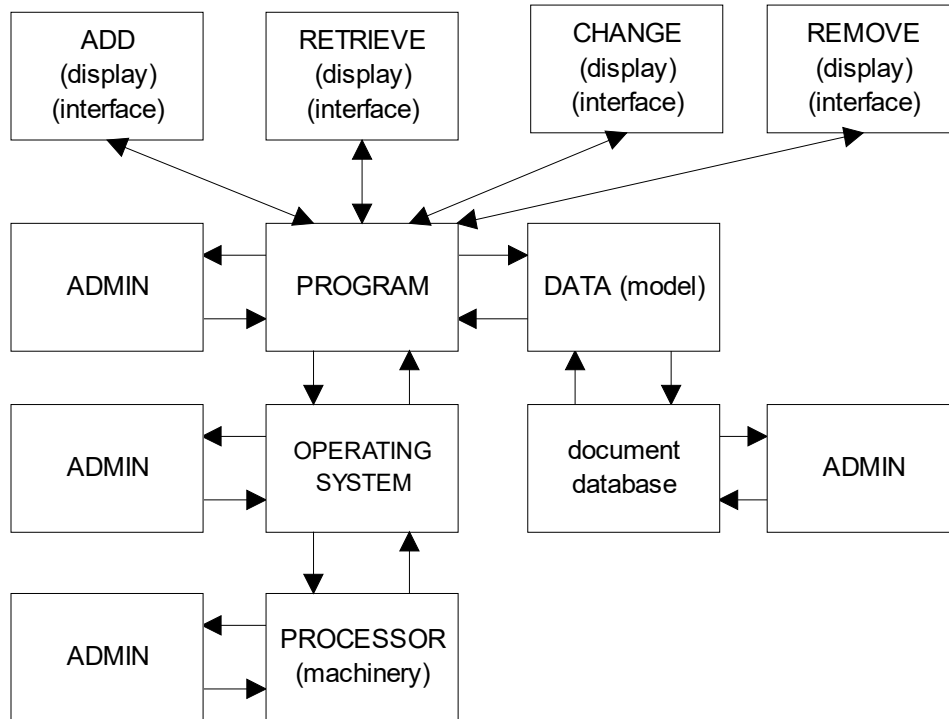
145 [Continues on the next page]

146

147

1 Standard Setting Organizations and Standards List, [www.consortiuminfo.org/links/linksall.php](http://www.consortiuminfo.org/links/linksall.php)

148



149

150

151 All information technology solutions have also processor(s) (machinery), operating system(s) and  
 152 program(s). Processor(s) (machinery), operating system(s) and program(s) all need administration  
 153 for keeping a system up-to-date. All programs handle data in some format and data can be  
 154 database(s) and/or document(s).

155

156 **Owner, member, agreement, standards, openness and closeness**

157

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

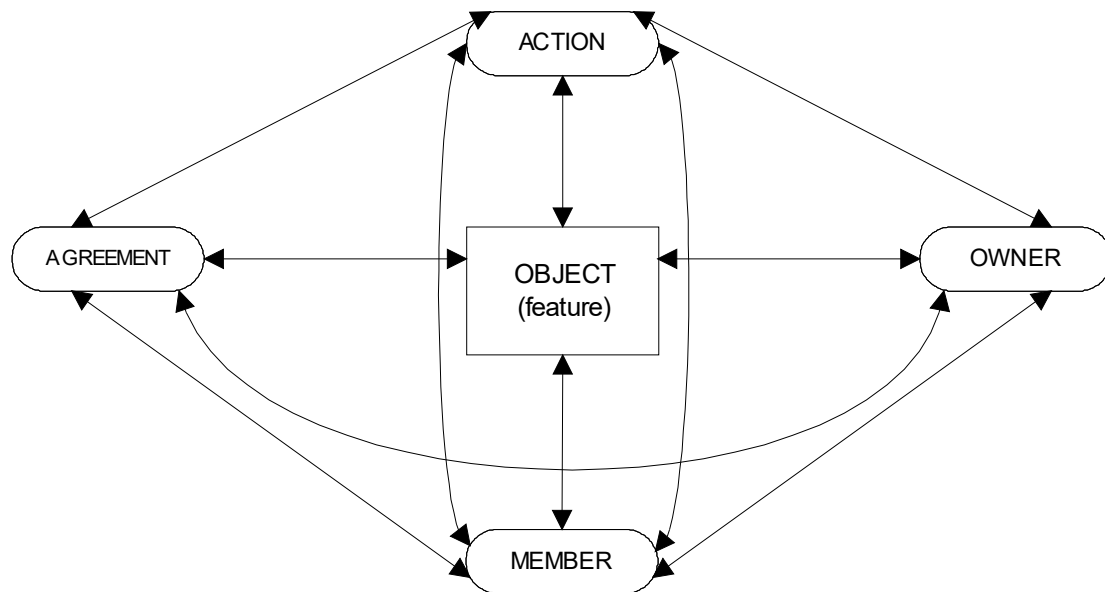
162

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

167

168 All previously mentioned issues can be based on ownership, membership and agreements. There  
 169 can be also different standards, which can be open or closed.

170



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

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.

[Continues on the next page]

187  
188  
189

Based on previous presentations it is possible to present following table.

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

190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210

Here we can note that there are several other issues (check previous table) and not just open data and open source software.

Using and developing open source software can be supported.

**Note: open source software means other expenses when compared to closed source software – for example education and training of users means some new expenses.**

**Recommendation 4: Give preference to open specifications, taking due account of the coverage of functional needs, maturity and market support and innovation**

This issue means usage of open horizontal standards. This issue is discussed before,.

**Another example: 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 (EU-wide systems and member state systems)**

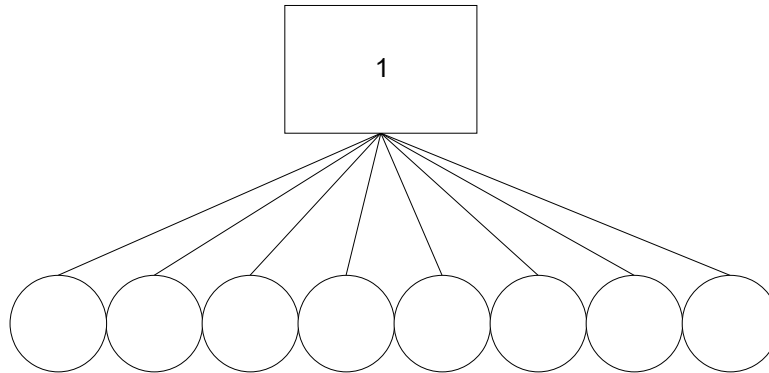
Copyright, licence and disclaimers: check Annex 2.

211 **could be assessed based on implementation of different APIs.**

212

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

214



215

216

217 One issue can be different versions of APIs. Based on timelines of different systems there can be  
218 different API versions in use.

219

220 **EU-wide level?**

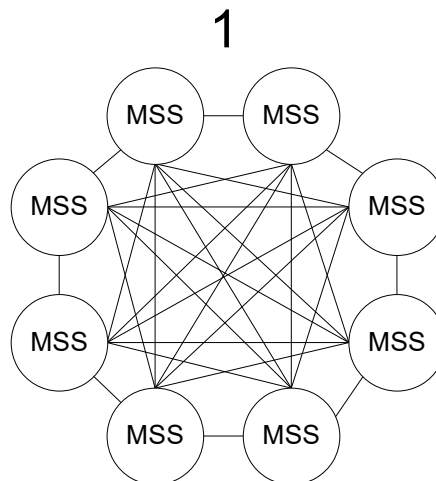
221

222 I have noted several times that different member state systems (MSS) can interlinked in many ways.

223 This means that co-operation with European Union systems means a lot of work. This leads to the

224 question of a European Contact Point (EUCP) for different member state systems (MSS).

225



**MSS = Member State System**

226

227

228

229 There are 27 member states (European Union) at the moment. In reality there are unique situations

230 with information systems in different member states. In some cases information systems can be

231 implemented based on complex system-to-system connections. Complex system-to-system

232 connections means a lot of work when there are changes in some systems.



233  
 234 Naturally there could be direct contacts between different member state systems (MSS) and  
 235 European Union Contact Point (EUCP). This option (MSS ↔ EUCP) could mean very large  
 236 number of different member state system. Based on 27 member state systems there could be  
 237 hundreds of connections:

238  
 239  $27 \times 10 = 270 \text{ MSS} \leftrightarrow 1 \text{ EUCP}$

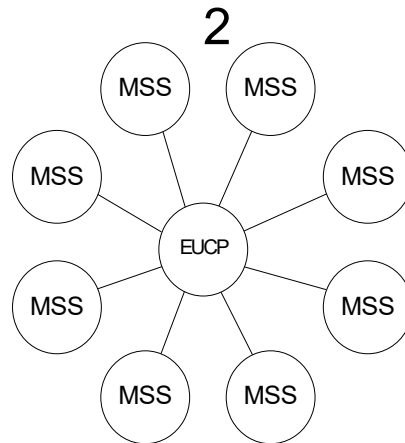
240  $27 \times 20 = 540 \text{ MSS} \leftrightarrow 1 \text{ EUCP}$

241  $27 \times 30 = 810 \text{ MSS} \leftrightarrow 1 \text{ EUCP}$

242  
 243 Here we can note that there can be hierarchy between different system (EU ↔ member states) and  
 244 there can be member state contact points (MCP). Then there can be some hierarchy between  
 245 different systems. (EU ↔ EUCP ↔ MSCP ↔ MSS ↔ Member state). There are unique situations  
 246 with member state systems in member states. Therefore member state contact points (MCP) can  
 247 reduce the complexity with European Union contact point (EUCP)

248  
 249 Based on those large numbers connecting (MSS ↔ EUCP) member state system I have to conclude  
 250 that there should be member state contact points (EUCP ↔ MSCP ↔ MSS).

251



252  
 253 **MSS = Member State System, EUCP = European Contact Point**

254  
 255 In the current situation, European Union member states (and some co-operation states) have their  
 256 own internal IDs for several information systems. Also, the members states organised as a  
 257 federation have their own internal problems with state-level IDs.

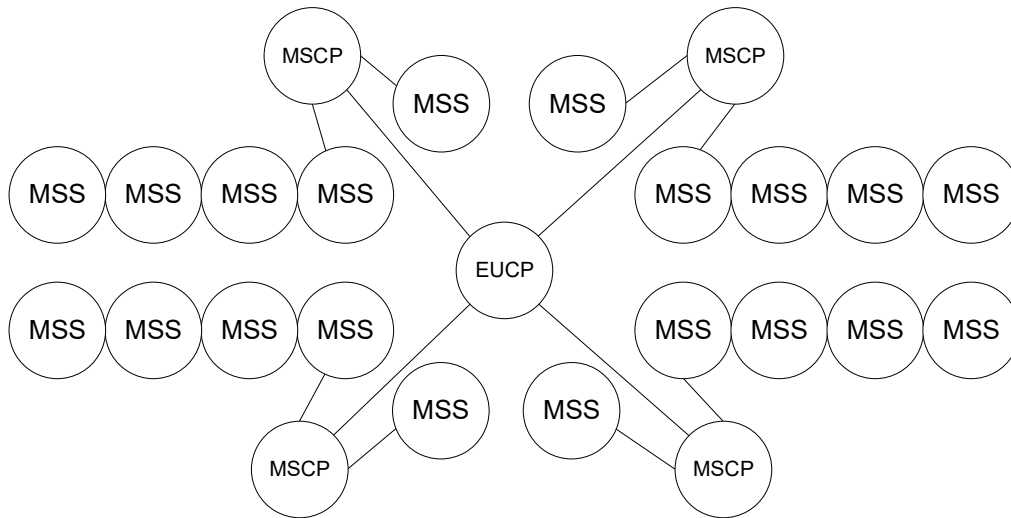
258  
 259 Based on those calculations there could be a lot of direct connections to the European contact point.  
 260 Number of those connections can be overwhelming. The situation between member states can vary  
 261 in many ways. So there can different and unique systems between member states.

262  
 263 On the other hand, there are some working examples of joined or federated EU-wide registers.  
 264 However, the amount of administration and needed legally binding agreements is considerable.

265  
266  
267  
268  
269

**Proposal : There could be one information system (member state contact point, MSCP) on member state level.**

**3**



**MSS = Member State System**

**MSCP = Member State Contact Point, EUCP = European Contact Point**

270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293

The solution can be, that member states have own Member State Contact Points (MSCP) and different state level systems are combined gradually. Then the member state system IDs can be used in the European Contact Point (EUCP).

Based on those large numbers connecting (MSS ↔ EUCP) member state system I have to conclude that there should be member state contact points (EUCP ↔ MSCP ↔ MSS).

Here we can note that there can be hierarchy between different system (EU ↔ member states) and there can be member state contact points (MCP). Then there can be some hierarchy between different systems. (EU ↔ EUCP ↔ MSCP ↔ MSS ↔ Member state). There are unique situations with member state systems in member states. Therefore member state contact points (MCP) can reduce the complexity with European Union contact point (EUCP).

**Proposal: Different member state systems could be consolidated based on limited number system-to-system connections.**

**Proposal: There could be some time frames for consolidating different member state systems (MSS) with member state contact points (MSCP).**

**Proposal: There could be some time frames for consolidating member state contact**

294 **points (MSCP) with the European Union contact point (EUCP).**

295

296 **Proposal: One information system (member state contact point, MSCP) on member**  
 297 **state level could handle system-to-system connections with the European Union level**  
 298 **(European contact point).**

299

300 **Proposal: There could be some serious work for developing a standardised member**  
 301 **state contact point (MSCP).**

302

303 **Proposal: After developing a standardised member state contact point (MSCP)**  
 304 **different member states could consolidate their systems (MSS ↔ MSCP).**

305

306 **Proposal: European Union contact point (EUCP) and member state contact points**  
 307 **(MSCP) could then handle cooperation (EUCP ↔ MSCP ↔ MSS) on the European**  
 308 **Union level.**

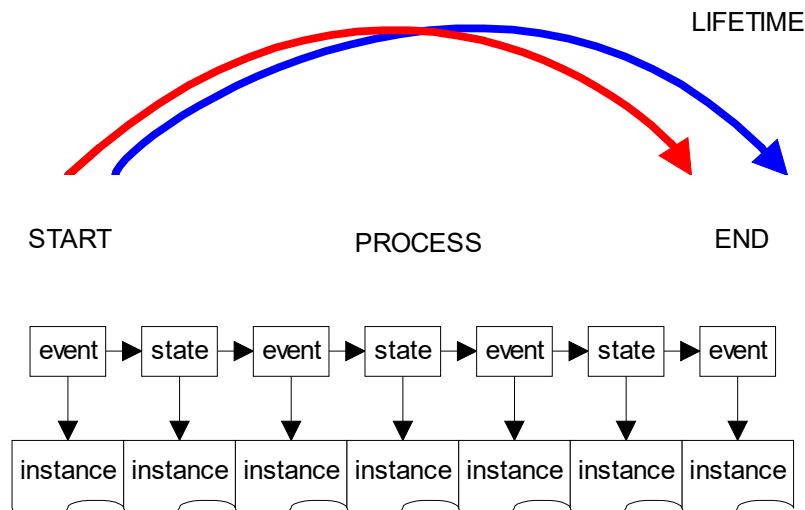
309

310 Naturally we have to note that developing a standardised member state contact point (MSCP) means  
 311 more work. On the other hand a standardised member state contact point (MSCP) could handle  
 312 cooperation (EUCP ↔ MSCP ↔ MSS) based on unique situations in member states. Some member  
 313 states may have more systems than other member states. We have to note that there are different  
 314 systems based on several technological solutions.

315

316 **Processes, events, states, lifetime, instances, start and end**

317



318

319

320 Finally some important concepts can noted: processes, events, states, lifetime, instances start and  
 321 end. It can noted that during the lifetime of an information system there can be significant changes  
 322 with the selected and implemented standards.

323

324 **Proposal: Based on the results of this consultation European Commission could create**

325 **a roadmap/timeline for implementing different interoperable system.**

326

327 **Proposal: Based on the results of this consultation could create roadmap/timeline for**  
 328 **consolidating different interoperable system**

329

330 Therefore European Commission could have a clear roadmap for implementing different standards  
 331 in the near and distant future.

332

333 Here we note that different information system have different lifetime based on several issues.  
 334 Therefore there could be clear roadmap for different information systems based on lifetime.

335

336 **Assessing different application programming interface (APIS) / System timeline**

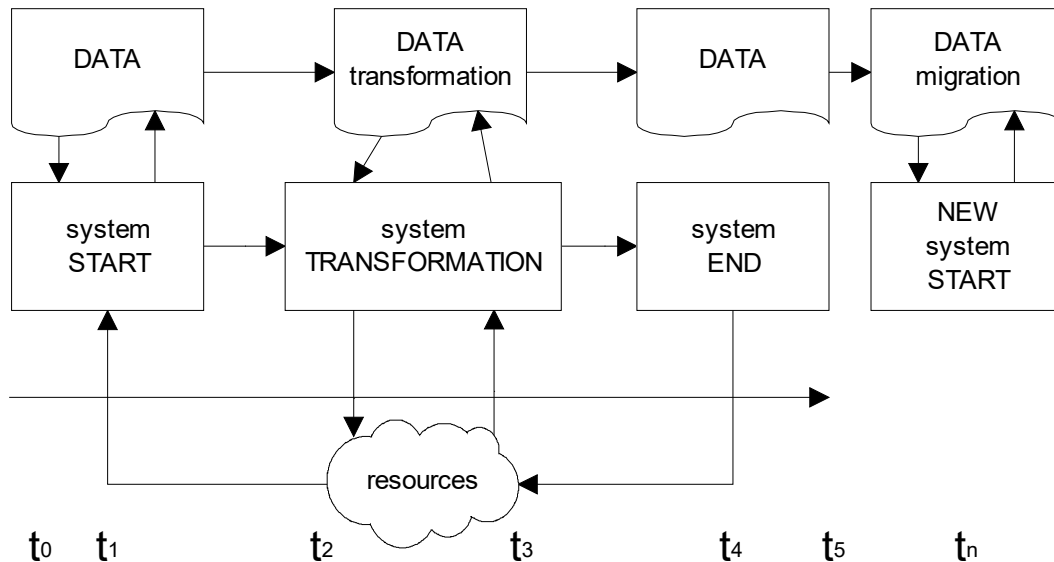
337

338 There can several APIs when using different information systems.

339

340 The natural problem with APIs is timeline of different systems which implement different APIs.  
 341 There can be new and old systems which implement different APIs.

342



343

344

345 **Proposal: Different information systems (EU-wide systems and member state systems)**  
 346 **could be assessed based on informations system timelines.**

347

348 **Proposal: Different information systems (EU-wide systems and member state systems)**  
 349 **could be assessed based on implementation of different APIs.**

350

351 **Proposal: There could be some assessments of different member state systems.**

352

353 **Note: Lifetime of different systems varies.**

354 **Note: Possibly it is not possible to consolidate all possible systems at the same**

355 **time.**

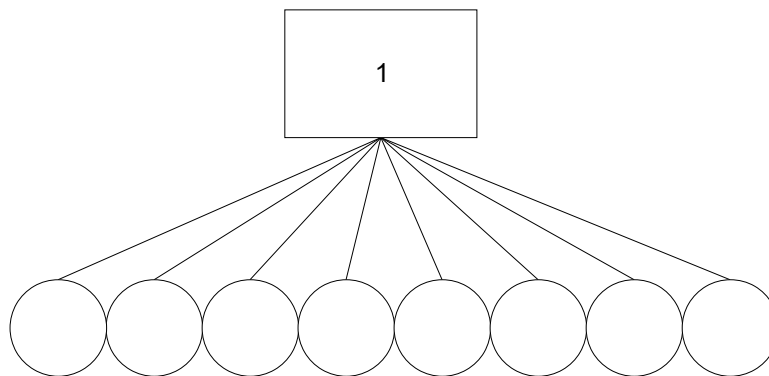
356

357 **Proposal: There could be some timetable for consolidating different systems, i.e.**  
 358 **cooperation between member states systems and European Union systems.**

359

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

361



362

363

364 One issue can be different versions of APIs. Based on timelines of different systems there can be  
 365 different API versions in use.

366

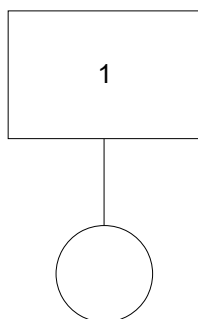
367 **Proposal: Different API versions could be assessed very carefully.**

368

369 Based on previous issues it can be noted that in some cases an older system can implement only  
 370 some versions of different APIs.

371

372



373

374

375 Here we can note different approaches for developing information systems. Some stakeholders  
 376 propose one well-done interface for all users of some information system. Some stakeholders  
 377 propose several smaller well-done interface for different users of some information system.

378

379 **Proposal: Number of different interfaces should be assessed carefully.**

380

381 **Proposal: Number of features for different interfaces should be assessed carefully.**

382

383 **Opinion: One big interface with large number of features is not the best possible**  
384 **way for creating information systems.**

385

386 **Proposal: There could be several interfaces based on needs of different stakeholders.**

387

388 **More and more identifiers (ID)**

389

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

394

395 \* global identifiers (ID)

396 \* EU-wide identifiers (ID)

397 \* general member state identifiers (ID)

398 \* several identifiers (ID) in member states.

399

400 **Proposal: There could be a systematic review of different identifiers (ID).**

401

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

404

405 Examples of these identifiers are following:

406

407 1) Facebook ID for an individual person

408 2) Facebook ID for the individual up-dates of individuals

409 3) Data Universal Numbering System (D-U-N-S)

410 4) Reuters instruments codes (RICs)

411 5) Social security code for individual citizens in the European Union member states

412 6) Business identity code for a company in an European Union member state

413 7) Value added tax code for a company in an European Union member state.

414

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

418

419

420 The information systems were established at different times and have since been modified on legal  
421 and operational grounds.

422

423 **More new identifiers (ID)?**

424

425 The current reality is, that there will be more and more IDs, since digitalisation of different areas

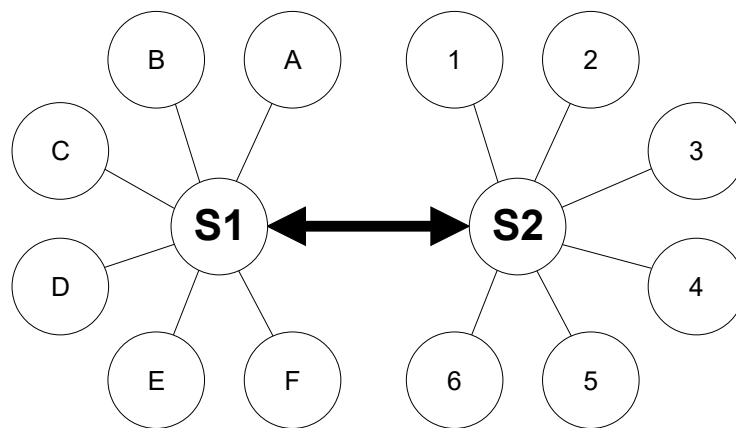
426 will result new IDs and/or combination of new and old IDs.

427

428 The creation YET another public ID is not always organised by the European Union, and in some  
 429 cases the European Union (and member states) just have to accept the reality of some of those  
 430 public IDs – in some cases even private IDs are the norm. The Reuters Instrumens Codes (RICs) is  
 431 an example of a near monopoly situation, and some of current private IDs might constitute (near)  
 432 monopoly situations. Naturally, (near) monopolies can be assessed by the Competition Directorate-  
 433 General, and it will be interesting to see possible new cases related to private IDs.

434

1-2



435

436

**Note: Digitalisation of everything means more identifiers (ID).**

437

**Note: All new identifiers (ID) mean more work for developing existing and new informations systems.**

438

439

**Note: There can be new stakeholder groups in the near/distant future which mean more identifiers (ID).**

440

441

**Proposal: There could be some assessment(s) based on different versions of different identifiers (ID).**

442

443

444

445

446

447

448

449

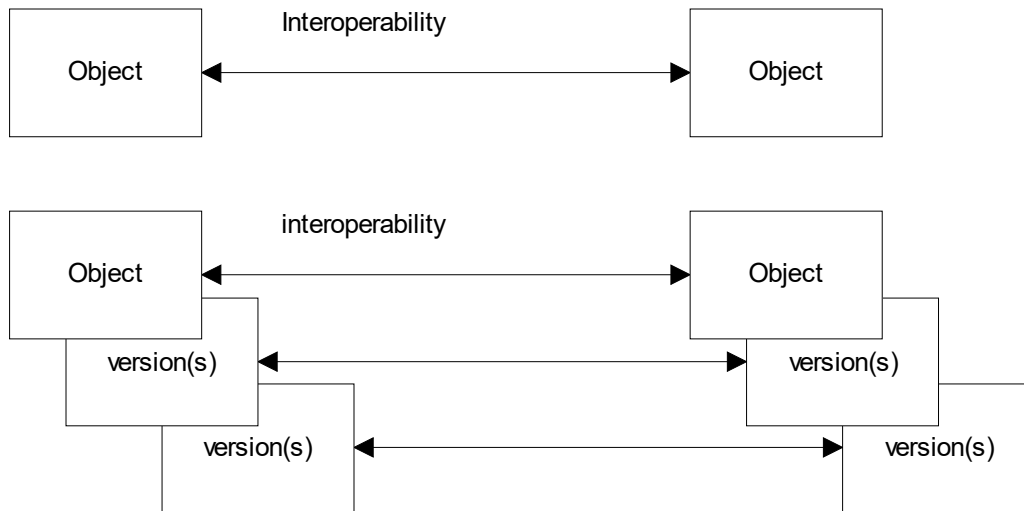
**Interoperability between different versions**

450

451

452

[Continues on the next page]



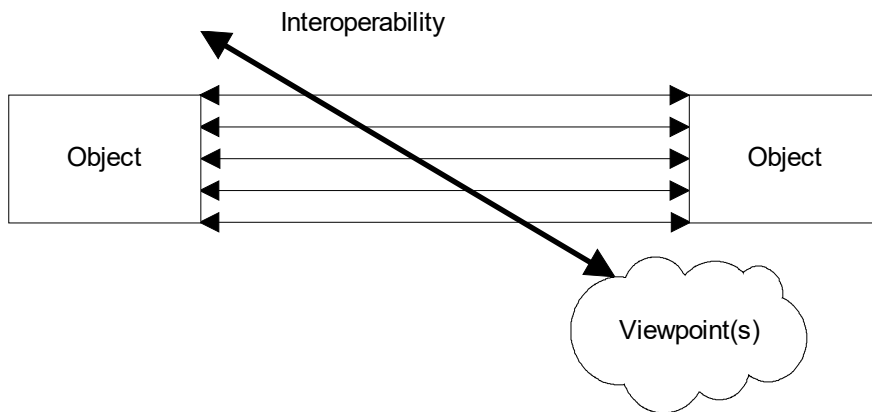
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463

One problem is naturally different versions of digital objects.

**Proposal: There could be careful assessment of interoperability based on versions of digital objects.**

It can be noted that different versions of digital objects may cause problems for interoperability.

One issue for interoperability are different viewpoints.



464  
465  
466  
467  
468  
469  
470  
471

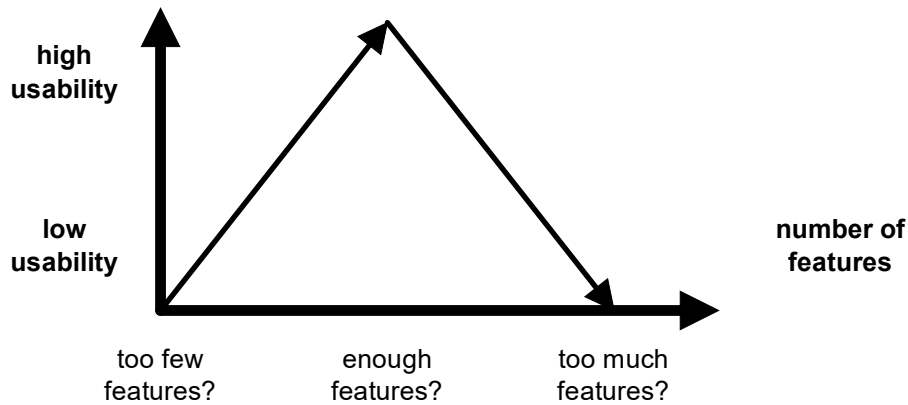
**Proposal: Different viewpoints for assessing interoperability could be evaluated very carefully.**

It can be noted that there can be some new viewpoints in the future.

**Features and requirements in different information systems**



472



473

474

475 One issue is assessment of different features.

476

**Proposal: Number of different information system features could assessed carefully.**

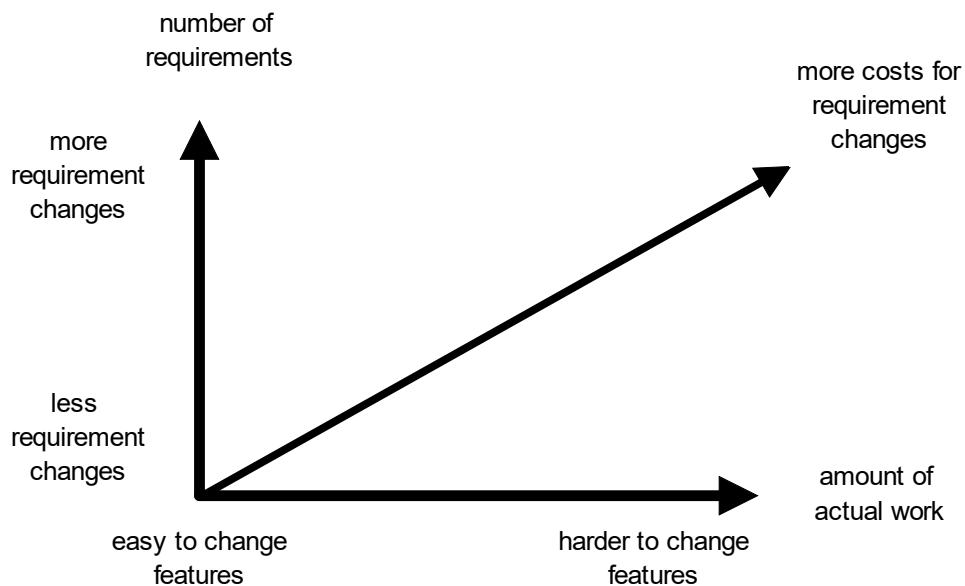
477

478

**Proposal: There should not be too much features in information systems.**

479

480



481

482

483 One issue is number of different requirements. There can be too many requirement changes which  
484 mean more work for system developers.

485

486 **Proposal: Number of requirements could be assessed carefully.**

487

488 **Proposal: All new requirements should be assessed very carefully before implementing**  
489 **different requirements in different information systems.**

490

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

492



493

494

495 I have advocated usage of web feeds <sup>2</sup> on several previous opinion documents. Actually there are  
496 two standards for web feeds: RSS <sup>3 4</sup> and Atom <sup>5 6 7</sup>.

497

498 **Proposal: Web feeds (RSS and/or Atom) could be advocated when developing different**  
499 **informations systems.**

500

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

503

504 **Proposal: There can be different web feeds (RSS and/or Atom) for different**  
505 **stakeholder(s) – having just one web feed (RSS and/or Atom) may not be a feasible**  
506 **solution.**

507

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

509

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

512

513 It can be noted, that different back-office systems (with a wide variety of different technologies) can  
514 implement RSS standards, and these RSS feeds can be used in the front-office systems. With this  
515 kind solutions front-office systems don't need direct system-to-system communications with back-  
516 office systems.

517

518 **Good luck!!!**

519

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

522

2 [https://en.wikipedia.org/wiki/Web\\_feed](https://en.wikipedia.org/wiki/Web_feed)

3 <http://www.rssboard.org/rss-specification>, RSS 2.0 Specification

4 <https://en.wikipedia.org/wiki/RSS>, Wikipedia / RSS

5 [https://en.wikipedia.org/wiki/Atom\\_\(standard\)](https://en.wikipedia.org/wiki/Atom_(standard)), Wikipedia / Atom (standard)

6 <https://tools.ietf.org/html/rfc4287>, The Atom Syndication Format

7 <https://tools.ietf.org/html/rfc5023>, The Atom Publishing Protocol

523

524

**ANNEX 1**

525

526

527 My opinions to the previous and relevant consultations – there consultations were mostly organised  
528 by the European Commission. General page to all consultations – both in English and in Finnish:

529 <http://www.jukkarannila.fi/lausunnot.html>

530

531

532 My opinions to the previous and relevant consultations – there consultations were mostly organised  
533 by the European Commission.

534

535 EN: Opinion 1: Review of the rules on access to documents

536 [http://www.jukkarannila.fi/lausunnot.html#nro\\_1](http://www.jukkarannila.fi/lausunnot.html#nro_1)

537

538 EN: Opinion 2: Schools for the 21st Century

539 [http://www.jukkarannila.fi/lausunnot.html#nro\\_2](http://www.jukkarannila.fi/lausunnot.html#nro_2)

540

541 EN: Opinion 3: The future of pharmaceuticals for Human use in Europe- making Europe a Hub for  
542 Safe and Innovative medicines

543 [http://www.jukkarannila.fi/lausunnot.html#nro\\_3](http://www.jukkarannila.fi/lausunnot.html#nro_3)

544

545 EN: Opinion 5: Consumer Scoreboard, Questionnaire for stakeholders

546 [http://www.jukkarannila.fi/lausunnot.html#nro\\_5](http://www.jukkarannila.fi/lausunnot.html#nro_5)

547

548 EN: Opinion 6: Consultation on a Code of Conduct for Interest Representatives

549 [http://www.jukkarannila.fi/lausunnot.html#nro\\_6](http://www.jukkarannila.fi/lausunnot.html#nro_6)

550

551 EN: Opinion 8: European Interoperability Framework, version 2, draft

552 [http://www.jukkarannila.fi/lausunnot.html#nro\\_8](http://www.jukkarannila.fi/lausunnot.html#nro_8)

553

554 EN: Opinion 9: CAMSS: Common Assessment Method for Standards and Specifications, CAMSS  
555 proposal for comments

556 [http://www.jukkarannila.fi/lausunnot.html#nro\\_9](http://www.jukkarannila.fi/lausunnot.html#nro_9)

557

558 EN: Opinion 15: Collective Redress

559 [http://www.jukkarannila.fi/lausunnot.html#nro\\_15](http://www.jukkarannila.fi/lausunnot.html#nro_15)

560

561 EN: Opinion 17: Opinion to Antitrust Case No. COMP/C-3/39.530

562 [http://www.jukkarannila.fi/lausunnot.html#nro\\_17](http://www.jukkarannila.fi/lausunnot.html#nro_17)

563

564 EN: Opinion 18: Opinion Related to the Public Undertaking by Microsoft

565 [http://www.jukkarannila.fi/lausunnot.html#nro\\_18](http://www.jukkarannila.fi/lausunnot.html#nro_18)

566

567

- 568 EN: Opinion 19: Official Acknowledgement by the Commission  
569 [http://www.jukkarannila.fi/lausunnot.html#nro\\_19](http://www.jukkarannila.fi/lausunnot.html#nro_19)  
570
- 571 EN: Opinion 20: SECOND Opinion Related to the Public Undertaking by Microsoft  
572 [http://www.jukkarannila.fi/lausunnot.html#nro\\_20](http://www.jukkarannila.fi/lausunnot.html#nro_20)  
573
- 574 EN: Opinion 21: Opinion about the European Interoperability Strategy proposal  
575 [http://www.jukkarannila.fi/lausunnot.html#nro\\_21](http://www.jukkarannila.fi/lausunnot.html#nro_21)  
576
- 577 EN: Opinion 23: Public consultation on the review of the European Standardisation System  
578 [http://www.jukkarannila.fi/lausunnot.html#nro\\_23](http://www.jukkarannila.fi/lausunnot.html#nro_23)  
579
- 580 EN: Opinion 27: Public Consultation on the Modernisation of EU Public Procurement Policy  
581 [http://www.jukkarannila.fi/lausunnot.html#nro\\_27](http://www.jukkarannila.fi/lausunnot.html#nro_27)  
582
- 583 EN: Opinion 28: Consultation on the Europe 2020 Project Bond Initiative  
584 [http://www.jukkarannila.fi/lausunnot.html#nro\\_28](http://www.jukkarannila.fi/lausunnot.html#nro_28)  
585
- 586 EN: Opinion 30: Internet Filtering  
587 [http://www.jukkarannila.fi/lausunnot.html#nro\\_30](http://www.jukkarannila.fi/lausunnot.html#nro_30)  
588 NOTE: Organised by the European Committee for Standardization (CEN) <sup>8</sup>  
589
- 590 EN: Opinion 32: COMP/C-3/39.692/IBM – Maintenance services  
591 [http://www.jukkarannila.fi/lausunnot.html#nro\\_32](http://www.jukkarannila.fi/lausunnot.html#nro_32)  
592
- 593 EN: Opinion 34: REMIT Registration Format  
594 [http://www.jukkarannila.fi/lausunnot.html#nro\\_34](http://www.jukkarannila.fi/lausunnot.html#nro_34)  
595 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER) <sup>9</sup>  
596
- 597 EN: Opinion 35: Exploiting the employment potential of the personal and household services  
598 [http://www.jukkarannila.fi/lausunnot.html#nro\\_35](http://www.jukkarannila.fi/lausunnot.html#nro_35)  
599
- 600 EN: Opinion 37: CASE COMP/39.654 - Reuters instrument codes  
601 [http://www.jukkarannila.fi/lausunnot.html#nro\\_37](http://www.jukkarannila.fi/lausunnot.html#nro_37)  
602
- 603 EN: Opinion 39: Registry options to facilitate linking of emissions trading systems  
604 [http://www.jukkarannila.fi/lausunnot.html#nro\\_39](http://www.jukkarannila.fi/lausunnot.html#nro_39)  
605
- 606 EN: Opinion 40: Media Freedom and Pluralism / audiovisual regulatory bodies  
607 [http://www.jukkarannila.fi/lausunnot.html#nro\\_40](http://www.jukkarannila.fi/lausunnot.html#nro_40)  
608
- 609 EN: Opinion 41: AT.39398: observations on the proposed commitments  
610 [http://www.jukkarannila.fi/lausunnot.html#nro\\_41](http://www.jukkarannila.fi/lausunnot.html#nro_41)

<sup>8</sup> <http://www.cen.eu/> (Accessed 2 July 2012)

<sup>9</sup> <http://www.acer.europa.eu/> (Accessed 2 July 2012)

- 611  
612 EN: Opinion 42: Opening up Education  
613 [http://www.jukkarannila.fi/lausunnot.html#nro\\_42](http://www.jukkarannila.fi/lausunnot.html#nro_42)  
614  
615 EN: Opinion 43: Publication of extracts of the European register of market participants  
616 [http://www.jukkarannila.fi/lausunnot.html#nro\\_43](http://www.jukkarannila.fi/lausunnot.html#nro_43)  
617 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER)  
618  
619 EN: Opinion 44: Evaluation policy guidelines  
620 [http://www.jukkarannila.fi/lausunnot.html#nro\\_44](http://www.jukkarannila.fi/lausunnot.html#nro_44)  
621  
622 EN: Opinion 45: About ICT standardisation  
623 [http://www.jukkarannila.fi/lausunnot.html#nro\\_45](http://www.jukkarannila.fi/lausunnot.html#nro_45)  
624  
625 EN: Opinion 46: Review of the EU copyright rules  
626 [http://www.jukkarannila.fi/lausunnot.html#nro\\_46](http://www.jukkarannila.fi/lausunnot.html#nro_46)  
627  
628 EN: Opinion 51: European Area of Skills and Qualifications  
629 [http://www.jukkarannila.fi/lausunnot.html#nro\\_51](http://www.jukkarannila.fi/lausunnot.html#nro_51)  
630  
631 EN: Opinion 52: Trusted Cloud Europe Survey  
632 [http://www.jukkarannila.fi/lausunnot.html#nro\\_52](http://www.jukkarannila.fi/lausunnot.html#nro_52)  
633  
634 EN: Opinion 53: Trade Reporting User Manual (TRUM) (Draft)  
635 [http://www.jukkarannila.fi/lausunnot.html#nro\\_53](http://www.jukkarannila.fi/lausunnot.html#nro_53)  
636 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER)  
637  
638 EN: Opinion 55: European Energy Regulation  
639 [http://www.jukkarannila.fi/lausunnot.html#nro\\_55](http://www.jukkarannila.fi/lausunnot.html#nro_55)  
640 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER)  
641  
642 EN: Opinion 59: Green paper on mobile Health  
643 [http://www.jukkarannila.fi/lausunnot.html#nro\\_59](http://www.jukkarannila.fi/lausunnot.html#nro_59)  
644  
645 EN: Opinion 60: Cross-border inheritance tax problems within the EU  
646 [http://www.jukkarannila.fi/lausunnot.html#nro\\_60](http://www.jukkarannila.fi/lausunnot.html#nro_60)  
647  
648 EN: Opinion 61: European Register of Products Containing Nanomaterials  
649 [http://www.jukkarannila.fi/lausunnot.html#nro\\_61](http://www.jukkarannila.fi/lausunnot.html#nro_61)  
650  
651 EN: Opinion 64: Corporate Social Responsibility - European Commission  
652 [http://www.jukkarannila.fi/lausunnot.html#nro\\_64](http://www.jukkarannila.fi/lausunnot.html#nro_64)  
653  
654 EN: Opinion 66: Net Innovation for the Work Programme 2016-2017  
655 [http://www.jukkarannila.fi/lausunnot.html#nro\\_66](http://www.jukkarannila.fi/lausunnot.html#nro_66)

- 656 EN: Opinion 68: European Network Code Stakeholder Committees  
657 [http://www.jukkarannila.fi/lausunnot.html#nro\\_68](http://www.jukkarannila.fi/lausunnot.html#nro_68)  
658 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER)  
659
- 660 EN: Opinion 71: Common Schema for the Disclosure of Inside Information  
661 [http://www.jukkarannila.fi/lausunnot.html#nro\\_71](http://www.jukkarannila.fi/lausunnot.html#nro_71)  
662 NOTE: Organised by The Agency for the Cooperation of Energy Regulators (ACER)  
663
- 664 EN: Opinion 74: Enabling the Internet of Things  
665 [http://www.jukkarannila.fi/lausunnot.html#nro\\_74](http://www.jukkarannila.fi/lausunnot.html#nro_74)  
666 NOTE: Organised by Body of European Regulators for Electronic Communications (BEREC) <sup>10</sup>  
667
- 668 EN: Opinion 80: Mandatory Transparency Register  
669 [http://www.jukkarannila.fi/lausunnot.html#nro\\_80](http://www.jukkarannila.fi/lausunnot.html#nro_80)  
670
- 671 EN: Opinion 84: Revision of the European Interoperability Framework  
672 [http://www.jukkarannila.fi/lausunnot.html#nro\\_84](http://www.jukkarannila.fi/lausunnot.html#nro_84)  
673
- 674 EN: Opinion 86: 2016 Annual Colloquium on fundamental rights  
675 [http://www.jukkarannila.fi/lausunnot.html#nro\\_86](http://www.jukkarannila.fi/lausunnot.html#nro_86)  
676
- 677 EN: Opinion 88: Evaluation and Review of the ePrivacy Directive  
678 [http://www.jukkarannila.fi/lausunnot.html#nro\\_88](http://www.jukkarannila.fi/lausunnot.html#nro_88)  
679
- 680 EN: Opinion 89: BEREC Guidelines for net neutrality rules  
681 [http://www.jukkarannila.fi/lausunnot.html#nro\\_89](http://www.jukkarannila.fi/lausunnot.html#nro_89)  
682 NOTE: Organised by Body of European Regulators for Electronic Communications (BEREC)  
683
- 684 EN: Opinion 93: Safety of apps and other non-embedded software  
685 [http://www.jukkarannila.fi/lausunnot.html#nro\\_93](http://www.jukkarannila.fi/lausunnot.html#nro_93)  
686
- 687 EN: Opinion 95: Targeted consultation on eForms  
688 [http://www.jukkarannila.fi/lausunnot.html#nro\\_95](http://www.jukkarannila.fi/lausunnot.html#nro_95)  
689
- 690 EN: Opinion 97: COM(2016) 882 final - 2016/0408 (COD)  
691 [http://www.jukkarannila.fi/lausunnot.html#nro\\_97](http://www.jukkarannila.fi/lausunnot.html#nro_97)  
692
- 693 EN: Opinion 98: Opinions related to six (6) co-decision (COD) proposals  
694 [http://www.jukkarannila.fi/lausunnot.html#nro\\_98](http://www.jukkarannila.fi/lausunnot.html#nro_98)  
695
- 696 EN: Opinion 99: COM(2016)0863 - European Union Agency for the Cooperation of Energy  
697 Regulators. Recast  
698 [http://www.jukkarannila.fi/lausunnot.html#nro\\_99](http://www.jukkarannila.fi/lausunnot.html#nro_99)  
699

<sup>10</sup> <http://www.berec.europa.eu>, Body of European Regulators for Electronic Communications (BEREC)

- 700 EN: Opinion 100: Protection of personal data (EU)  
701 [http://www.jukkarannila.fi/lausunnot.html#nro\\_100](http://www.jukkarannila.fi/lausunnot.html#nro_100)  
702
- 703 EN: Opinion 101: Governance of the Energy Union  
704 [http://www.jukkarannila.fi/lausunnot.html#nro\\_101](http://www.jukkarannila.fi/lausunnot.html#nro_101)  
705
- 706 EN: Opinion 102: Smart Wearables  
707 [http://www.jukkarannila.fi/lausunnot.html#nro\\_102](http://www.jukkarannila.fi/lausunnot.html#nro_102)  
708
- 709 EN: Opinion 106: Review of the European Union Agency for Network and Information Security  
710 (ENISA)  
711 [http://www.jukkarannila.fi/lausunnot.html#nro\\_106](http://www.jukkarannila.fi/lausunnot.html#nro_106)  
712
- 713 EN: Opinion 108: Single Digital Gateway  
714 [http://www.jukkarannila.fi/lausunnot.html#nro\\_108](http://www.jukkarannila.fi/lausunnot.html#nro_108)  
715
- 716 EN: Opinion 110: Technical arrangements / Information systems / Union Customs Code  
717 [http://www.jukkarannila.fi/lausunnot.html#nro\\_110](http://www.jukkarannila.fi/lausunnot.html#nro_110)  
718
- 719 EN: Opinion 111: Interoperability of information systems for migration and security  
720 [http://www.jukkarannila.fi/lausunnot.html#nro\\_111](http://www.jukkarannila.fi/lausunnot.html#nro_111)  
721
- 722 EN: Opinion 113: Transform of health and care  
723 [http://www.jukkarannila.fi/lausunnot.html#nro\\_113](http://www.jukkarannila.fi/lausunnot.html#nro_113)  
724
- 725 EN: Opinion 114: Premium content on ECS markets and the effect of devices on the open use of the  
726 Internet  
727 [http://www.jukkarannila.fi/lausunnot.html#nro\\_114](http://www.jukkarannila.fi/lausunnot.html#nro_114)  
728 NOTE: Organised by Body of European Regulators for Electronic Communications (BEREC)  
729
- 730 EN: Opinion 118: Fake news and online disinformation  
731 [http://www.jukkarannila.fi/lausunnot.html#nro\\_118](http://www.jukkarannila.fi/lausunnot.html#nro_118)  
732
- 733 EN: Opinion 119: European Social Security Number  
734 [http://www.jukkarannila.fi/lausunnot.html#nro\\_119](http://www.jukkarannila.fi/lausunnot.html#nro_119)  
735
- 736 EN: Opinion 120: European Labour Authority  
737 [http://www.jukkarannila.fi/lausunnot.html#nro\\_120](http://www.jukkarannila.fi/lausunnot.html#nro_120)  
738
- 739 EN: Opinion 121: 2nd Data Package  
740 [http://www.jukkarannila.fi/lausunnot.html#nro\\_121](http://www.jukkarannila.fi/lausunnot.html#nro_121)  
741
- 742 EN: Opinion 122: Proposal to create a cybersecurity competence network with a European  
743 Cybersecurity Research and Competence Centre  
744 [http://www.jukkarannila.fi/lausunnot.html#nro\\_122](http://www.jukkarannila.fi/lausunnot.html#nro_122)

- 745  
746 EN: Opinion 123: Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF  
747 THE COUNCIL on the re-use of public sector information (recast)  
748 [http://www.jukkarannila.fi/lausunnot.html#nro\\_123](http://www.jukkarannila.fi/lausunnot.html#nro_123)  
749  
750 EN: Opinion 125: Security of identity cards of Union citizens and of residence documents  
751 [http://www.jukkarannila.fi/lausunnot.html#nro\\_125](http://www.jukkarannila.fi/lausunnot.html#nro_125)  
752  
753 EN: Opinion 128: Summertime arrangements  
754 [http://www.jukkarannila.fi/lausunnot.html#nro\\_128](http://www.jukkarannila.fi/lausunnot.html#nro_128)  
755  
756 EN: Opinion 129: Format for a European Electronic Health Record (EHR) Exchange  
757 [http://www.jukkarannila.fi/lausunnot.html#nro\\_129](http://www.jukkarannila.fi/lausunnot.html#nro_129)  
758  
759 EN: Opinion 132: Informative guidance on the Regulation on the Free flow of non-personal data  
760 [http://www.jukkarannila.fi/lausunnot.html#nro\\_132](http://www.jukkarannila.fi/lausunnot.html#nro_132)  
761  
762 EN: Opinion 133: standard forms for the publication of notices in the field of public procurement  
763 ("eForms")  
764 [http://www.jukkarannila.fi/lausunnot.html#nro\\_133](http://www.jukkarannila.fi/lausunnot.html#nro_133)  
765  
766 EN: Opinion 134: Update Implementing act on technical arrangements for the systems defined by  
767 UCC  
768 [http://www.jukkarannila.fi/lausunnot.html#nro\\_134](http://www.jukkarannila.fi/lausunnot.html#nro_134)  
769  
770 EN: Opinion 139: Information management system for official controls Regulation (IMSOC)  
771 [http://www.jukkarannila.fi/lausunnot.html#nro\\_139](http://www.jukkarannila.fi/lausunnot.html#nro_139)  
772  
773 EN: Opinion 141: Farm Accountancy Data Network  
774 [http://www.jukkarannila.fi/lausunnot.html#nro\\_141](http://www.jukkarannila.fi/lausunnot.html#nro_141)  
775  
776 EN: Opinion 142: Horizon Europe (two consultations)  
777 [http://www.jukkarannila.fi/lausunnot.html#nro\\_142](http://www.jukkarannila.fi/lausunnot.html#nro_142)  
778  
779 EN: Opinion 144: Digitisation and online access of cultural material and digital preservation  
780 (evaluation)  
781 [http://www.jukkarannila.fi/lausunnot.html#nro\\_144](http://www.jukkarannila.fi/lausunnot.html#nro_144)  
782  
783 EN: Opinion 146: Draft CWA by the CEN/WS - Journalism Trust Initiative  
784 [http://www.jukkarannila.fi/lausunnot.html#nro\\_146](http://www.jukkarannila.fi/lausunnot.html#nro_146)  
785 NOTE: Organised by the European Committee for Standardization (CEN)  
786  
787 EN: Opinion 147: EU customs procedures - developing and upgrading electronic systems  
788 [http://www.jukkarannila.fi/lausunnot.html#nro\\_147](http://www.jukkarannila.fi/lausunnot.html#nro_147)  
789



- 790 EN: Opinion 152: Revision of the Non-Financial Reporting Directive  
791 [http://www.jukkarannila.fi/lausunnot.html#nro\\_152](http://www.jukkarannila.fi/lausunnot.html#nro_152)  
792
- 793 EN: Opinion 154: Strengthen the exchange of information framework in the field of taxation  
794 [http://www.jukkarannila.fi/lausunnot.html#nro\\_154](http://www.jukkarannila.fi/lausunnot.html#nro_154)  
795
- 796 EN: Opinion 156: Elements of the data for "ICT usage and e-commerce" for the reference year  
797 2021  
798 [http://www.jukkarannila.fi/lausunnot.html#nro\\_156](http://www.jukkarannila.fi/lausunnot.html#nro_156)  
799
- 800 EN: Opinion 159: EU competition law - market definition notice (evaluation)  
801 [http://www.jukkarannila.fi/lausunnot.html#nro\\_159](http://www.jukkarannila.fi/lausunnot.html#nro_159)  
802
- 803 EN: Opinion 161: New Competition Tool ('NCT')  
804 [http://www.jukkarannila.fi/lausunnot.html#nro\\_161](http://www.jukkarannila.fi/lausunnot.html#nro_161)  
805
- 806 EN: Opinion 162: Digital Services Act package: ex ante regulatory instrument of very large online  
807 platforms acting as gatekeepers  
808 [http://www.jukkarannila.fi/lausunnot.html#nro\\_162](http://www.jukkarannila.fi/lausunnot.html#nro_162)  
809
- 810 EN: Opinion 165: Legislative framework for the governance of common European data spaces  
811 [http://www.jukkarannila.fi/lausunnot.html#nro\\_165](http://www.jukkarannila.fi/lausunnot.html#nro_165)  
812
- 813 EN: Opinion 166: Sharing information between national business registers  
814 [http://www.jukkarannila.fi/lausunnot.html#nro\\_166](http://www.jukkarannila.fi/lausunnot.html#nro_166)  
815
- 816
- 817 My opinions to the previous and relevant consultations – there consultations were mostly organised  
818 by the European Commission. General page to all consultations – both in English and in Finnish:  
819 <http://www.jukkarannila.fi/lausunnot.html>  
820

821

822

**ANNEX 2**

823 DISCLAIMERS

824

825 Legal disclaimer:

826 All opinions in this opinion paper are personal opinions and they do not represent opinions of any legal entity I am  
827 member either by law or voluntarily. This opinion paper is only intended to trigger thinking and it is not legal advice.

828 This opinion paper does not apply to any past, current or future legal entity. This opinion paper will not cover any of the  
829 future changes in this fast-developing area. Any actions made based on this opinion is solely responsibility of respective  
830 actor making those actions.

831

832 Political disclaimer:

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

836

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

841

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

843

844 Content of web pages:

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

851

852 Use of broken English

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

855

856 COPYRIGHT

857

858 This opinion paper is distributed under Creative Commons licence, to be specific the licence is "Attribution-  
859 NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)". The text of the licence can be obtained from  
860 the following web page:

861 <http://creativecommons.org/licenses/by-nc-nd/4.0/>

862 The English explanation is on the following web page:

863 <http://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>

864



865

866

867 Tämän lausunnon lisenssi on Creative Commons -lisenssi, tarkemmin ottaen Nimeä-EiKaupallinen-EiMuutoksia 4.0  
868 Kansainvälinen (CC BY-NC-ND 4.0). Lisenssin tekstit saa luettua seuraavilla www-sivuilla:

869

870 <https://creativecommons.org/licenses/by-nc-nd/4.0/deed.fi>

871 <https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode.fi>