

Digital Single Market

Promoting the shared use of Europe's radio spectrum

Team responsible

[DG CONNECT](#) ^[1]

Different users can sometimes share a given spectrum frequency band. This means more spectrum resources available, and lower access barriers for new users. But it needs regulators to grant shared spectrum access rights. Common examples are Wi-Fi networks, baby monitors, garage door openers, and radio frequency identification device (RFID) systems.

From a regulatory point of view, band sharing can be achieved in two ways: either by the Collective Use of Spectrum (CUS), allowing spectrum to be used by more than one user simultaneously without a licence; or using Licensed Shared Access (LSA), under which users have individual rights to access a shared spectrum band.

Broader context

The EU's Radio Spectrum Policy Programme (RSPP) sets out the framework, based on the principle that spectrum should be used efficiently and managed effectively. To enhance efficiency and flexibility, it requires Member States, in cooperation with the Commission, to foster the collective use and shared use of spectrum where appropriate. To meet the growing demand for wireless connectivity, and given advances in the technologies for sharing spectrum, the Commission has proposed a [common approach](#) ^[2] to identify beneficial opportunities to share spectrum (BSO).

Current Developments

In September 2012, the European Commission published its views on "[Promoting the shared use of radio spectrum resources in the EU](#)" ^[2]". This document highlights the importance of technologies to share radio frequencies; as well as the need to create incentives and legal certainty for innovators. It proposes ways to promote wireless innovations to share spectrum more efficiently, in particular:

- Developing a common approach to identify beneficial opportunities to share spectrum (BSO) in the internal market;
- Providing economic incentives and legal certainty for users to develop and deploy spectrum-sharing

- technologies, for example based on sharing contracts;
- Authorising shared spectrum access with "guaranteed rights of use", as a tool for regulators to leverage economies of scale for wireless innovation;
 - Monitoring and extending the harmonised licence-exempt internal market bands.

With the support of EU legislators, national regulators, stakeholders and researchers, we can together create a regulatory environment that both incentivises investment in research and deployment of wireless innovation; and enables regulators to allow more shared spectrum access.

In this context, an [independent study sets out some "Perspectives on the value of shared spectrum access"](#) [3]; while the Radio Spectrum Policy Group has also reported on "[collective use of spectrum and other sharing approaches](#)" [4]. In addition, the Commission is currently working on a study on the "Impact of traffic offloading and technological trends on the demand for wireless broadband spectrum" ([SMART 2012/0015](#)) [5], and on the spectrum inventory.

Two different approaches

Sharing radio frequency in the EU can be done in two ways: the CUS model (also called licence-exempt approach); or a variety of different implementations of the LSA model, in which different users need a licence to access a shared band. Even though many applications still depend on exclusive access to spectrum, shared bands are increasingly recognised as the breeding ground for wireless innovation that stimulates the development and deployment of more resilient wireless technologies.

The main difference between the two pillars relates to the regulatory guarantees for accessing shared bands. The CUS model provides all users with shared or "collective" usage rights to access a particular band. To manage interference, CUS users rely on technical usage parameters that are specified in spectrum regulations (in combination with a degree of self-regulation for the sharing rules). These parameters can, for example, be specified in harmonised equipment standards. Legally based on the concept of a [general authorisation](#) [6], [7] the CUS model allows lower regulatory constraints, but means more responsibility for spectrum users to share spectrum efficiently and manage interference effectively.

The LSA concept, in contrast, gives users shared spectrum access rights that are guaranteed by a regulator, making it possible to ensure a predictable quality of service. Each user needs an individual (but not exclusive) licence to access a particular frequency band. Such authorisations depend on the specific sharing conditions in a band, which need to be sufficiently attractive and predictable for new investment in equipment and networks. Under such a licensed regime, interference management is the responsibility of the spectrum management authority, which sets the access parameters through regulation and licence conditions. A user that receives such a usage right, for example by acquiring a licence through a spectrum auction, is often also entitled to be protected against harmful interference.

CUS model in practice

Important advantages of the CUS model are the low entry barriers, the certainty of access (which in turn can encourage wireless innovations), and lower administrative burdens for both user and regulator. Under the model, an undetermined number of independent users and/or devices is allowed to access spectrum in the same range of frequencies simultaneously and in a particular geographic area under a well-defined set of conditions. This is particularly the case if shared spectrum bands are "licence-exempt", i.e. if users do not have to acquire a licence to access the spectrum.

A broad range of applications and technologies currently benefit from the CUS model of spectrum regulation. Among those are most [short-range devices](#) [8] (SRD) with applications such as Radio Frequency Identification Devices (RFID) that support supply chain automation and machine-to-machine (M2M) applications. Emerging [intelligent transport systems](#) [9] and [automotive short-range radars](#) [10] (SRR) also depend on CUS bands; as do Wi-Fi routers.

Ultra wide-band (UWB) wireless technologies also depend on the CUS model. UWB transmits low-power radio signals across a wide range of frequencies, supporting short-range applications like high-data communications, location tracking and ground-penetration radar. UWB is a type of 'underlay' spectrum usage - in that it shares frequencies with other applications but without causing harmful interference to these existing user applications.

Promoting the shared use of radio spectrum resources

Radio spectrum is an extremely valuable natural resource. The exponential increase in demand for technologies like Wi-Fi or smart electricity grids means we must use this finite resource efficiently. But meeting that growing demand for wireless connectivity is harder in the absence of vacant spectrum. In addition, making existing bands available is often expensive, involves delays and runs the occasional risk of having to "switch off" existing users.

Traditional spectrum regulation separates technologies into different frequency bands to avoid inference, and to more easily guarantee quality of service. (For example, bands for TV and Radio broadcasts are kept separate from those used for mobile internet connections). But advances in technologies increasingly make it possible for different types of technology to operate in the same frequency band.

To share spectrum more efficiently, the EU needs to support new technologies, and make it easier for different users to use a given frequency band; in effect making additional spectrum available without having to remove existing users. One example is "cognitive radio" technology to provide wireless broadband services in the "white spaces" between TV frequencies.

What action does the EU have to take?

The EU needs a common approach to spectrum sharing to achieve economies of scale in the internal market. If undertaken solely at national level, spectrum sharing would instead fragment the market, and would mean wireless innovations miss out on considerable benefits.

The Commission therefore proposes to unlock additional spectrum resources, based on a common methodology, to identify beneficial sharing opportunities (BSO) across the radio spectrum; and to enable regulators to authorise users with shared spectrum access rights (SSAR).

Benefits of shared spectrum access for citizens and industry

Citizens will get affordable wireless broadband services over shared frequencies (e.g. via Wi-Fi hotspots); and can enjoy using ever more wireless gadgets.

Innovators developing wireless technologies can get more chances to access more parts of the spectrum. In particular, the licence-exempt bands which are the breeding ground for wireless innovation.

And existing spectrum users can get a regulatory environment which encourages investment in

research and deployment of wireless innovation: which will have numerous benefits in the medium and long term. For example, shared spectrum bands for wireless broadband can be used at the same time by internet providers to offer affordable wireless connectivity services and by mobile networks operators to save costs. In addition, more possibilities to share licensed spectrum may open new possibilities to share infrastructure.

More information

- Commission Communication on "Promoting the shared use of radio spectrum resources in the EU" [COM\(2012\) 478](#) [11].
- Consultants study on [\[3\] Perspectives on the value of shared spectrum access](#) [3], March 2012
- [Final RSPG Report](#) [4] on Collective Use of Spectrum and Other Sharing Approaches, November 2011
- [Final RSPG Opinion](#) [12] on Cognitive Technologies, February 2011
- [Final RSPG Report](#) [13] on Cognitive Technologies, February 2010
- [Final RSPG Opinion](#) [14] on Aspects of a European Approach to 'Collective Use of Spectrum' November 2008
- Consultants [Study on Legal, Economic & Technical Aspects](#) [15] of 'Collective Use' of Spectrum in the European Community, November 2006.
- [Get involved](#) [16]

Published:

23 October 2012

Last update:

9 May 2017

You may be interested in

- [Users' rights](#) [17]
- [Open Data](#) [18]
- [2012 promotional campaign](#) [19]
- [Roaming Tariffs](#) [20]
- [EU rules on 116](#) [21]
- [Media Freedom and Pluralism](#) [22]
- [EU's spectrum policy framework](#) [23]
- [The Media Pluralism Monitor \(MPM\)](#) [24]
- [Radio Spectrum Committee \(RSC\)](#) [25]
- [Radio Spectrum Policy Group \(RSPG\)](#) [26]
- [Easier access to radio spectrum: the EU's electronic communications framework](#) [27]
- [Managing and monitoring the EU's radio spectrum](#) [28]
- [EU Coordination on Radio Spectrum](#) [29]
- [Audiovisual Media Services Directive \(AVMSD\)](#) [30]
- [General Principles](#) [31]
- [How to get involved in EU Radio Spectrum Policy](#) [16]
- [What is Radio Spectrum Policy?](#) [32]
- [Promotion and Distribution of European Works](#) [33]
- [Connecting Europe Facility](#) [34]
- [Protection of minors | AVMSD](#) [35]
- [Open data portals](#) [36]
- [AVMSD - Application and Implementation](#) [37]
- [Contact Committee](#) [38]

- [ERGA - Audiovisual Regulators](#) [39]
- [AVMSD - Infringement procedures](#) [40]
- [AVMSD - Application Reports](#) [41]
- [AVMSD - Reports on European works](#) [42]
- [Protection of film heritage](#) [43]
- [Radio Spectrum Policy Programme: the roadmap for a wireless Europe](#) [44]
- [Content distribution](#) [45]
- [The international dimension of audiovisual policy](#) [46]
- [European legislation on re-use of public sector information](#) [47]
- [Radio Spectrum: coordination, harmonisation and information](#) [48]
- [Safer Internet Day \(SID\)](#) [49]
- [Smart Cities](#) [50]
- [Improving access to Radio Spectrum through Market Mechanisms](#) [51]
- [WAPECS - a flexible approach to spectrum use](#) [52]
- [Spectrum needs and spectrum availability](#) [53]
- [Reorganising the EU's spectrum](#) [54]
- [Delivering the digital dividend](#) [55]
- [Electronic access: anytime, anywhere](#) [56]
- [Phoning from the flight](#) [57]
- [Staying in touch while on board ship](#) [58]
- [Electronics](#) [59]
- [Going mobile with satellite services](#) [60]
- [A European Strategy to deliver a Better Internet for our Children](#) [61]
- [Boosting broadband on the move](#) [62]
- [Promoting the shared use of Europe's radio spectrum](#) [63]
- [Short range, mass market](#) [64]
- [Public use of spectrum](#) [65]
- [Radio controlled road use](#) [66]
- [Cars that communicate](#) [67]
- [Digital Champions](#) [68]
- [A radar for your car](#) [69]
- [Mandating Europe's spectrum experts](#) [70]
- [The National Role in Radio Spectrum Policy](#) [71]
- [Implementation](#) [72]
- [WRC - setting the world's radio spectrum rules](#) [73]
- [Digital Champions meetings](#) [74]
- [Useful Links - Spectrum](#) [75]
- [EU Actions on 112](#) [76]
- [112 in your country](#) [77]
- [Web Accessibility](#) [78]
- [Research and innovation for ageing well with ICT](#) [79]
- [EU-funded research into robotics for ageing well](#) [80]
- [Digitisation & Digital Preservation](#) [81]
- [Digitisation & Digital Preservation](#) [81]
- [Member States expert group on digitisation & digital preservation](#) [82]
- [From a Safer Internet to a Better Internet for Kids](#) [83]
- [Photonics and our daily life](#) [84]
- [Photonics Research Stories](#) [85]
- [Industrial innovation and cooperation at the European level](#) [86]
- [Telecoms Rules](#) [87]
- [AVMSD - List of Major Events](#) [88]

- [Transformation of Health and Care in the Digital Single Market](#) [89]
- [Research and innovation in digital solutions for health, wellbeing and ageing](#) [90]
- [Research and innovation in digital solutions for health, wellbeing and ageing](#) [90]
- [Research and innovation in digital solutions for health, wellbeing and ageing](#) [90]
- [Managing Health Data](#) [91]
- [Telemedicine](#) [92]
- [Virtual Physiological Human](#) [93]
- [Consultation procedures](#) [94]
- [112 Promotional material](#) [95]
- [Going Local Initiative](#) [96]
- [Digital scoreboard](#) [97]
- [Create Graphs](#) [98]
- [Countries' performance in digitisation](#) [99]
- [Download data](#) [100]
- [National Regulatory Authorities](#) [101]
- [National Regulatory Authorities](#) [101]
- [Wireless Europe](#) [102]
- [The H2020 Future Internet Forum \(FIF\)](#) [103]
- [Broadband Europe](#) [104]
- [Collective Awareness Platforms for Sustainability and Social Innovation](#) [105]
- [Startup Europe](#) [106]
- [Startup Europe](#) [106]
- [Creating a Better Internet for Kids](#) [107]
- [ICT and Art - the STARTS initiative](#) [108]
- [Implementation of the Public Sector Information Directive](#) [109]
- [Implementation of the Public Sector Information Directive](#) [109]
- [Self-regulation for a Better Internet for Kids](#) [110]
- [Trust services](#) [111]
- [Open Internet](#) [112]
- [Consultations](#) [113]
- [Future & Emerging Technologies \(FET\)](#) [114]
- [FET Proactive](#) [115]
- [FET Flagships](#) [116]
- [FET Flagships](#) [116]
- [Convergence](#) [117]
- [Women in Digital](#) [118]
- [The Digital Skills and Jobs Coalition](#) [119]
- [Roaming](#) [120]
- [Roaming](#) [120]
- [Roaming](#) [120]
- [Non-legislative measures to facilitate re-use](#) [121]
- [112](#) [122]
- [EU rules on 112](#) [123]
- [Kids' Corner](#) [124]
- [Girls in ICT Day](#) [125]
- [Photonics - what is it about?](#) [126]
- [Digital privacy](#) [127]
- [2013 promotional campaign](#) [128]
- [Cybersecurity](#) [129]
- [The Open Innovation Strategy and Policy Group](#) [130]
- [Open Innovation 2.0](#) [131]

- [eBooks](#) [132]
- [Europeana - a European Cultural Heritage Platform for all](#) [133]
- [Transatlantic Cooperation](#) [134]
- [Integrated care: health and social care become one](#) [135]
- [e-Identification](#) [136]
- [Trust Services and eID](#) [137]
- [Broadband in Member States](#) [138]
- [The Active and Assisted Living Joint Programme \(AAL JP\)](#) [139]
- [Connected TV](#) [140]
- [Consultations on media issues](#) [141]
- [The top-level domain .eu](#) [142]
- [Open and Participative Innovation](#) [143]
- [Investing in network technologies](#) [144]
- [Connected TV - background reading](#) [145]
- [116 in your country](#) [146]
- [Open Science](#) [147]
- [Open Access to scientific information](#) [148]
- [Global Systems Science](#) [149]
- [Electronics Strategy for Europe](#) [150]
- [ICT Innovation Vouchers Scheme for Regions](#) [151]
- [Open standards](#) [152]
- [International Cooperation on 5G](#) [153]
- [Towards 5G](#) [154]
- [Cloud Select Industry Groups](#) [155]
- [Cloud Select Industry Group on Service Level Agreements](#) [156]
- [Cloud Select Industry Group on Code of Conduct](#) [157]
- [Time to ECSEL](#) [158]
- [Cloud Standards Coordination \(ETSI\)](#) [159]
- [Cyber-Physical Systems](#) [160]
- [Advanced Computing](#) [161]
- [Smart Manufacturing](#) [162]
- [The Factories of the Future](#) [163]
- [Q&A for entrepreneurs - support](#) [164]
- [eHealth Experts](#) [165]
- [ICT Innovation](#) [166]
- [The Internet of Things](#) [167]
- [ICT and Standardisation](#) [168]
- [The Electronics strategy in action](#) [169]
- [Completed projects](#) [170]
- [Broadband for all via satellite](#) [171]
- [Innovation Procurement](#) [172]
- [Interoperability & standardisation: connecting eHealth services](#) [173]
- [Research and Innovation in eHealth](#) [174]
- [Research and Innovation in eHealth](#) [174]
- [Vision and Innovation of advanced computing](#) [175]
- [Promote capital investment in production in Europe](#) [176]
- [Smart Specialisation, dialogue with Member States and Regions](#) [177]
- [Successful research projects in Advanced computing](#) [178]
- [Embedded Systems](#) [179]
- [Monitoring and Control](#) [180]
- [Access to design and silicon, developing skills](#) [181]

- [System-of-Systems](#) [182]
- [Future and Emerging Technologies projects portfolio](#) [183]
- [Lighting the Future](#) [184]
- [Organic and Large Area Electronics](#) [185]
- [Opening Up Education](#) [186]
- [Coding - the 21st century skill](#) [187]
- [Research and Innovation for ICT in education](#) [188]
- [Financing Innovation](#) [189]
- [Open Innovation Group Members](#) [190]
- [Rolling plan for ICT standardisation](#) [191]
- [Identification of ICT specifications](#) [192]
- [Funding for digital skills](#) [193]
- [OISPG Activities](#) [194]
- [ICT Innovation in Horizon 2020](#) [195]
- [An Electronics Roadmap for Europe](#) [196]
- [An overview of eHealth studies](#) [197]
- [Public Procurement of Innovative Solutions](#) [198]
- [Pre-Commercial Procurement](#) [199]
- [Broadband investment guide](#) [200]
- [European Digital Forum](#) [201]
- [Big Data](#) [202]
- [Elements of the European data economy strategy](#) [203]
- [Broadband strategy & policy](#) [204]
- [Financing the broadband project](#) [205]
- [Broadband Technologies](#) [206]
- [Startup Europe networks](#) [207]
- [Startup Europe networks](#) [207]
- [Startup Europe: building the ecosystem](#) [208]
- [Startup Europe: building the ecosystem](#) [208]
- [Language Technologies](#) [209]
- [Americas](#) [210]
- [International Organisations and Fora](#) [211]
- [Regional and Bilateral Relations](#) [212]
- [Language Technologies and Big Data](#) [213]
- [Research & Standards](#) [214]
- [EU rules to reduce cost of high-speed broadband deployment](#) [215]
- [Broadband value chain, actors and business models](#) [216]
- [EU funded projects](#) [217]
- [Global internet and telecommunications](#) [218]
- [Carrier model options](#) [219]
- [Automated Translation](#) [220]
- [Media Freedom Projects](#) [221]
- [mHealth](#) [222]
- [Startup success stories](#) [223]
- [Open Disruptive Innovation](#) [224]
- [SME Instrument | Frequently Asked Questions](#) [225]
- [What can big data do for you ?](#) [226]
- [The Global Internet Policy Observatory \(GIPO\)](#) [227]
- [EU Code Week - Bringing ideas to life](#) [228]
- [National Coalitions](#) [229]
- [e-Infrastructures](#) [230]

- [Access to existing physical infrastructure](#) [231]
- [Coordination of civil works](#) [232]
- [Permit granting | Broadband Europe](#) [233]
- [In-building infrastructure](#) [234]
- [ICT innovation vouchers in action](#) [235]
- [Get Involved in the Digital Skills and Jobs Coalition](#) [236]
- [Big Data Value Public-Private Partnership](#) [237]
- [Open government](#) [238]
- [ICT-enabled public sector innovation in Horizon 2020](#) [239]
- [High-Performance Computing](#) [240]
- [Copyright](#) [241]
- [Horizon Prizes](#) [242]
- [eGovernment & Digital Public Services](#) [243]
- [Robotics](#) [244]
- [Telecom Laws](#) [245]
- [Cloud computing](#) [246]
- [Strengthening trust and security](#) [247]
- [Supporting media and digital culture](#) [248]
- [Digital cultural heritage](#) [249]
- [Digital cultural heritage](#) [249]
- [European broadband mapping](#) [250]
- [Broadband action plan](#) [251]
- [Defining your broadband plan](#) [252]
- [Four key strategic choices](#) [253]
- [Infrastructure and service-based competition](#) [254]
- [Network and Topology](#) [255]
- [Actors in the broadband value chain](#) [256]
- [Basic business models](#) [257]
- [Main financing tools](#) [258]
- [Financing of public-private joint ventures and private-run deployments](#) [259]
- [State aid](#) [260]
- [Investment models](#) [261]
- [Robotics Public-Private Partnership in Horizon 2020](#) [262]
- [Emergency and support lines](#) [263]
- [Shaping the Digital Single Market](#) [264]
- [Creating a digital society](#) [265]
- [Advancing in digital science and infrastructures](#) [266]
- [Tech All Stars](#) [267]
- [The Digital Economy and Society Index \(DESI\)](#) [268]
- [EU Member States](#) [269]
- [Digital Skills & Jobs](#) [270]
- [Citizen science](#) [271]
- [The Innovation Radar](#) [272]
- [Our Studies and Open Datasets](#) [273]
- [The MEDIA sub-programme of Creative Europe](#) [274]
- [The Alliance for Internet of Things Innovation \(AIOTI\)](#) [275]
- [Better access for consumers and business to online goods](#) [276]
- [Right environment for digital networks and services](#) [277]
- [Economy & Society](#) [278]
- [Human Capital and Digital Skills](#) [279]
- [Use of Internet and Online Activities](#) [280]

- [Broadband Connectivity](#) [281]
- [Digital Public Services](#) [282]
- [Research & Development in ICT](#) [283]
- [Integration of Digital Technology by Enterprises](#) [284]
- [The European Film Forum](#) [285]
- [The European Film Forum](#) [285]
- [The Satellite and Cable Directive](#) [286]
- [The EU copyright legislation](#) [287]
- [Media Literacy](#) [288]
- [High Performance Computing Contractual Public-Private Partnership \(HPC cPPP\)](#) [289]
- [Online Platforms](#) [290]
- [Geo-blocking](#) [291]
- [e-Commerce Directive](#) [292]
- [e-Commerce Directive](#) [292]
- [e-Commerce Directive](#) [292]
- [EU funded societal challenges projects | From Lab to market](#) [293]
- [EU funded societal challenges projects | From Lab to market](#) [293]
- [EU funded societal challenges projects | From Lab to market](#) [293]
- [EU funded societal challenges projects | From Lab to market](#) [293]
- [Cybersecurity industry](#) [294]
- [Digital Inclusion for a better EU society](#) [295]
- [European Broadband Awards](#) [296]
- [Broadband Competence Offices Network](#) [297]
- [Broadband Competence Offices Network](#) [297]
- [The Fourth Industrial Revolution](#) [298]
- [The European Cloud Initiative](#) [299]
- [European eGovernment Action Plan 2016-2020](#) [300]
- [eGovernment Action Plan](#) [301]
- [Standards](#) [302]
- [Standards](#) [302]
- [Financial guarantee facility for the cultural and creative sector](#) [303]
- [Financial guarantee facility for the cultural and creative sector](#) [303]
- [Research & Innovation in Internet of Things](#) [304]
- [The GÉANT Project | A European Success Story](#) [305]
- [25 years of MEDIA Programme](#) [306]
- [Quantum technologies](#) [307]
- [Revision of the Audiovisual Media Services Directive \(AVMSD\)](#) [308]
- [Boosting e-commerce in the EU](#) [309]
- [eIDAS Observatory](#) [310]
- [EU trust mark](#) [311]
- [Privacy Code of Conduct on mobile health apps](#) [312]
- [The Directive on security of network and information systems \(NIS Directive\)](#) [313]
- [Europe's Digital Progress Report](#) [314]
- [Connectivity for a European Gigabit Society](#) [315]
- [Modernisation of the EU copyright rules](#) [316]
- [5G for Europe Action Plan](#) [317]
- [Next Generation Internet initiative](#) [318]
- [International cooperation on cloud computing](#) [319]
- [Coordination of European, national & regional initiatives](#) [320]
- [Pan-European network of Digital Innovation Hubs \(DIHs\)](#) [321]
- [Industrial platforms and large scale pilots](#) [322]

- [WiFi4EU | Free Wi-Fi for Europeans](#) [323]
- [WiFi4EU | Free Wi-Fi for Europeans](#) [323]
- [Platform-to-business trading practices](#) [324]
- [Illegal content on online platforms](#) [325]
- [European Open Science Cloud](#) [326]
- [Multimedia Actions](#) [327]
- [Building a European data economy](#) [328]
- [Alliance to better protect minors online](#) [329]
- [Cooperative, connected and automated mobility in Europe](#) [330]
- [Digital skills initiatives](#) [331]
- [Pledges for action](#) [332]
- [Become a member of the Digital Skills and Jobs Coalition](#) [333]
- [Social media and networks, innovation and policy](#) [334]
- [Question and Answers | Roaming](#) [335]
- [Roaming charges | What has the European Commission done so far?](#) [336]
- [Roaming charges | What has the European Commission done so far?](#) [336]
- [Roaming charges | What has the European Commission done so far?](#) [336]
- [Cross-border portability of online content services](#) [337]
- [Practical Information for ICT Proposers' Day 2017](#) [338]
- [Foreign Policy](#) [339]
- [Expert Group on Digital Cultural Heritage and Europeana \(DCHE\)](#) [340]
- [Expert Group on Digital Cultural Heritage and Europeana \(DCHE\)](#) [340]
- [Collective rights management directive](#) [341]
- [Graphene Flagship](#) [342]
- [The EU cybersecurity certification framework](#) [343]
- [Free flow of non-personal data](#) [344]
- [Free flow of non-personal data](#) [344]
- [Fake news](#) [345]
- [Digital Opportunity traineeships: boosting digital skills on the job](#) [346]
- [The Governing Board of the Digital Skills and Jobs Coalition](#) [347]
- [Questions and Answers on WiFi4EU](#) [348]
- [Pillars of the Digitising European Industry initiative](#) [349]

Share this page

Source URL: <https://ec.europa.eu/digital-single-market/en/promoting-shared-use-europes-radio-spectrum>

Links

- [1] https://ec.europa.eu/info/departments/communications-networks-content-and-technology_en
- [2] <https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/com-ssa.pdf>
- [3] https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/scf_study_shared_spectrum_access_20120210.pdf
- [4] http://rspg.ec.europa.eu/_documents/documents/meeting/rspg26/rspg11_392_report_CUS_other_approaches_final.pdf
- [5] <https://ec.europa.eu/digital-single-market/node/2474>
- [6] <https://ec.europa.eu/digital-single-market/node/125>
- [7] <http://ec.europa.eu/digital-single-market/easier-access-radio-spectrum-eus-electronic-communications-framework>
- [8] <https://ec.europa.eu/digital-single-market/node/319>
- [9] <https://ec.europa.eu/digital-single-market/node/1399>
- [10] <https://ec.europa.eu/digital-single-market/node/329>
- [11] <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52012DC0478:EN:NOT>
- [12] http://rspg.ec.europa.eu/_documents/documents/meeting/rspg24/rspg_10_348_ct_opinion_final.pdf
- [13] http://rspg.ec.europa.eu/_documents/documents/meeting/rspg21/rspg10_306_cognitivetechologies_report_0421.pdf

[14] https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/rspg08244_finalopinion_collectiveuse.pdf

[15] https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/cus_rep_fin.pdf

[16] <https://ec.europa.eu/digital-single-market/en/how-get-involved-eu-radio-spectrum-policy>

[17] <https://ec.europa.eu/digital-single-market/en/users-rights>

[18] <https://ec.europa.eu/digital-single-market/en/open-data>

[19] <https://ec.europa.eu/digital-single-market/en/2012-promotional-campaign>

[20] <https://ec.europa.eu/digital-single-market/en/roaming-tariffs>

[21] <https://ec.europa.eu/digital-single-market/en/content/eu-rules-116>

[22] <https://ec.europa.eu/digital-single-market/en/policies/media-freedom-and-pluralism>

[23] <https://ec.europa.eu/digital-single-market/en/content/eus-spectrum-policy-framework>

[24] <https://ec.europa.eu/digital-single-market/en/media-pluralism-monitor-mpm>

[25] <https://ec.europa.eu/digital-single-market/en/radio-spectrum-committee-rsc>

[26] <https://ec.europa.eu/digital-single-market/en/content/radio-spectrum-policy-group-rspg>

[27] <https://ec.europa.eu/digital-single-market/en/content/easier-access-radio-spectrum-eus-electronic-communications-framework>

[28] <https://ec.europa.eu/digital-single-market/en/content/managing-and-monitoring-eus-radio-spectrum>

[29] <https://ec.europa.eu/digital-single-market/en/eu-coordination-radio-spectrum>

[30] <https://ec.europa.eu/digital-single-market/en/policies/audiovisual-media-services>

[31] <https://ec.europa.eu/digital-single-market/en/general-principles>

[32] <https://ec.europa.eu/digital-single-market/en/what-radio-spectrum-policy>

[33] <https://ec.europa.eu/digital-single-market/en/promotion-and-distribution-european-works>

[34] <https://ec.europa.eu/digital-single-market/en/connecting-europe-facility>

[35] <https://ec.europa.eu/digital-single-market/en/protection-minors-avmsd>

[36] <https://ec.europa.eu/digital-single-market/en/policies/open-data>

[37] <https://ec.europa.eu/digital-single-market/en/avmsd-application-and-implementation>

[38] <https://ec.europa.eu/digital-single-market/en/avmsd-contact-committee>

[39] <https://ec.europa.eu/digital-single-market/en/audiovisual-regulators>

[40] <https://ec.europa.eu/digital-single-market/en/avmsd-infringement-procedures>

[41] <https://ec.europa.eu/digital-single-market/en/avmsd-application-reports>

[42] <https://ec.europa.eu/digital-single-market/en/avmsd-reports-european-works>

[43] <https://ec.europa.eu/digital-single-market/en/film-heritage>

[44] <https://ec.europa.eu/digital-single-market/en/radio-spectrum-policy-programme-roadmap-wireless-europe>

[45] <https://ec.europa.eu/digital-single-market/en/content-distribution>

[46] <https://ec.europa.eu/digital-single-market/en/international-dimension-audiovisual-policy>

[47] <https://ec.europa.eu/digital-single-market/en/european-legislation-reuse-public-sector-information>

[48] <https://ec.europa.eu/digital-single-market/en/content/radio-spectrum-coordination-harmonisation-and-information>

[49] <https://ec.europa.eu/digital-single-market/en/safer-internet-day-sid>

[50] <https://ec.europa.eu/digital-single-market/en/policies/smart-cities>

[51] <https://ec.europa.eu/digital-single-market/en/content/improving-access-radio-spectrum-through-market-mechanisms>

[52] <https://ec.europa.eu/digital-single-market/en/wapecs-flexible-approach-spectrum-use>

[53] <https://ec.europa.eu/digital-single-market/en/content/spectrum-needs-and-spectrum-availability>

[54] <https://ec.europa.eu/digital-single-market/en/content/reorganising-eus-spectrum>

[55] <https://ec.europa.eu/digital-single-market/en/content/delivering-digital-dividend>

[56] <https://ec.europa.eu/digital-single-market/en/electronic-access-anytime-anywhere>

[57] <https://ec.europa.eu/digital-single-market/en/content/phoning-flight>

[58] <https://ec.europa.eu/digital-single-market/en/content/staying-touch-while-board-ship>

[59] <https://ec.europa.eu/digital-single-market/en/electronics>

[60] <https://ec.europa.eu/digital-single-market/en/content/going-mobile-satellite-services>

[61] <https://ec.europa.eu/digital-single-market/en/european-strategy-deliver-better-internet-our-children>

[62] <https://ec.europa.eu/digital-single-market/en/content/boosting-broadband-move>

[63] <https://ec.europa.eu/digital-single-market/en/promoting-shared-use-europes-radio-spectrum>

[64] <https://ec.europa.eu/digital-single-market/en/content/short-range-mass-market>

[65] <https://ec.europa.eu/digital-single-market/en/content/public-use-spectrum>

[66] <https://ec.europa.eu/digital-single-market/en/content/radio-controlled-road-use>

[67] <https://ec.europa.eu/digital-single-market/en/content/cars-communicate>

[68] <https://ec.europa.eu/digital-single-market/en/digital-champions>

[69] <https://ec.europa.eu/digital-single-market/en/content/radar-your-car>

[70] <https://ec.europa.eu/digital-single-market/en/mandating-europe%E2%80%99s-spectrum-experts>

[71] <https://ec.europa.eu/digital-single-market/en/content/national-role-radio-spectrum-policy>
[72] <https://ec.europa.eu/digital-single-market/en/implementation>
[73] <https://ec.europa.eu/digital-single-market/en/content/wrc-setting-worlds-radio-spectrum-rules>
[74] <https://ec.europa.eu/digital-single-market/en/meetings-digital-champions>
[75] <https://ec.europa.eu/digital-single-market/en/content/useful-links-spectrum>
[76] <https://ec.europa.eu/digital-single-market/en/eu-actions-112>
[77] <https://ec.europa.eu/digital-single-market/en/112-your-country>
[78] <https://ec.europa.eu/digital-single-market/en/web-accessibility>
[79] <https://ec.europa.eu/digital-single-market/en/research-and-innovation-ageing-well-ict>
[80] <https://ec.europa.eu/digital-single-market/en/robotics-ageing-well-current-research>
[81] <https://ec.europa.eu/digital-single-market/en/digitisation-digital-preservation>
[82] <https://ec.europa.eu/digital-single-market/en/member-states-expert-group-digitisation-digital-preservation>
[83] <https://ec.europa.eu/digital-single-market/en/content/safer-internet-better-internet-kids>
[84] <https://ec.europa.eu/digital-single-market/en/photronics-and-our-daily-life>
[85] <https://ec.europa.eu/digital-single-market/en/relevant-research-projects-photonics>
[86] <https://ec.europa.eu/digital-single-market/en/industrial-innovation-and-cooperation-european-level>
[87] <https://ec.europa.eu/digital-single-market/en/telecoms-rules>
[88] <https://ec.europa.eu/digital-single-market/en/avmsd-list-major-events>
[89] <https://ec.europa.eu/digital-single-market/en/policies/ehealth>
[90] <https://ec.europa.eu/digital-single-market/en/content/benefiting-personalised-care>
[91] <https://ec.europa.eu/digital-single-market/en/content/managing-health-data>
[92] <https://ec.europa.eu/digital-single-market/en/telemedicine>
[93] <https://ec.europa.eu/digital-single-market/en/content/virtual-physiological-human>
[94] <https://ec.europa.eu/digital-single-market/en/art-7-consultation-procedures>
[95] <https://ec.europa.eu/digital-single-market/en/112-promotional-material>
[96] <https://ec.europa.eu/digital-single-market/en/going-local>
[97] <https://ec.europa.eu/digital-single-market/en/policies/scoreboard>
[98] <https://ec.europa.eu/digital-single-market/en/create-graphs>
[99] <https://ec.europa.eu/digital-single-market/en/progress-country>
[100] <https://ec.europa.eu/digital-single-market/en/download-data>
[101] <https://ec.europa.eu/digital-single-market/en/national-regulatory-authorities>
[102] <https://ec.europa.eu/digital-single-market/en/policies/wireless-europe>
[103] <https://ec.europa.eu/digital-single-market/en/future-internet-forum>
[104] <https://ec.europa.eu/digital-single-market/en/policies/broadband-europe>
[105] <https://ec.europa.eu/digital-single-market/en/collective-awareness-platforms-sustainability-and-social-innovation>
[106] <https://ec.europa.eu/digital-single-market/en/policies/startup-europe>
[107] <https://ec.europa.eu/digital-single-market/en/policies/better-internet-kids>
[108] <https://ec.europa.eu/digital-single-market/en/ict-art-starts-platform>
[109] <https://ec.europa.eu/digital-single-market/en/implementation-public-sector-information-directive>
[110] <https://ec.europa.eu/digital-single-market/en/self-regulation-and-stakeholders-better-internet-kids>
[111] <https://ec.europa.eu/digital-single-market/en/trust-services>
[112] <https://ec.europa.eu/digital-single-market/en/policies/open-internet-net-neutrality>
[113] <https://ec.europa.eu/digital-single-market/en/consultations>
[114] <https://ec.europa.eu/digital-single-market/en/policies/future-and-emerging-technologies>
[115] <https://ec.europa.eu/digital-single-market/en/fet-proactive>
[116] <https://ec.europa.eu/digital-single-market/en/fet-flagships>
[117] <https://ec.europa.eu/digital-single-market/en/media-convergence>
[118] <https://ec.europa.eu/digital-single-market/en/women-ict>
[119] <https://ec.europa.eu/digital-single-market/en/digital-skills-jobs-coalition>
[120] <https://ec.europa.eu/digital-single-market/en/policies/roaming>
[121] <https://ec.europa.eu/digital-single-market/en/non-legislative-measures-facilitate-re-use>
[122] <https://ec.europa.eu/digital-single-market/en/112>
[123] <https://ec.europa.eu/digital-single-market/en/eu-rules-112>
[124] <https://ec.europa.eu/digital-single-market/en/kids-corner>
[125] <https://ec.europa.eu/digital-single-market/en/girls-ict-day>
[126] <https://ec.europa.eu/digital-single-market/en/policies/photonics>
[127] <https://ec.europa.eu/digital-single-market/en/policies/online-privacy>
[128] <https://ec.europa.eu/digital-single-market/en/2013-promotional-campaign>
[129] <https://ec.europa.eu/digital-single-market/en/policies/cybersecurity>

[130] <https://ec.europa.eu/digital-single-market/en/open-innovation-strategy-and-policy-group>

[131] <https://ec.europa.eu/digital-single-market/en/policies/open-innovation>

[132] <https://ec.europa.eu/digital-single-market/en/ebooks>

[133] <https://ec.europa.eu/digital-single-market/en/europeana-european-digital-library-all>

[134] <https://ec.europa.eu/digital-single-market/en/transatlantic-cooperation>

[135] <https://ec.europa.eu/digital-single-market/en/integrated-care-health-and-social-care-become-one>

[136] <https://ec.europa.eu/digital-single-market/en/e-identification>

[137] <https://ec.europa.eu/digital-single-market/en/policies/trust-services-and-eidentification>

[138] <https://ec.europa.eu/digital-single-market/en/broadband-member-states>

[139] <https://ec.europa.eu/digital-single-market/en/active-and-assisted-living-joint-programme-aal-jp>

[140] <https://ec.europa.eu/digital-single-market/en/connected-tv>

[141] <https://ec.europa.eu/digital-single-market/en/consultations-media-issues>

[142] <https://ec.europa.eu/digital-single-market/en/the-top-level-domain-.eu>

[143] <https://ec.europa.eu/digital-single-market/en/open-and-participative-innovation>

[144] <https://ec.europa.eu/digital-single-market/en/policies/investing-network-technologies>

[145] <https://ec.europa.eu/digital-single-market/en/connected-tv-background-reading>

[146] <https://ec.europa.eu/digital-single-market/en/116-your-country>

[147] <https://ec.europa.eu/digital-single-market/en/open-science>

[148] <https://ec.europa.eu/digital-single-market/en/policies/open-access>

[149] <https://ec.europa.eu/digital-single-market/en/global-systems-science>

[150] <https://ec.europa.eu/digital-single-market/en/electronics-strategy-europe>

[151] <https://ec.europa.eu/digital-single-market/en/ict-innovation-vouchers-scheme-regions>

[152] <https://ec.europa.eu/digital-single-market/en/open-standards>

[153] <https://ec.europa.eu/digital-single-market/en/5G-international-cooperation>

[154] <https://ec.europa.eu/digital-single-market/en/policies/5G>

[155] <https://ec.europa.eu/digital-single-market/en/cloud-computing-strategy-working-groups>

[156] <https://ec.europa.eu/digital-single-market/en/cloud-select-industry-group-service-level-agreements>

[157] <https://ec.europa.eu/digital-single-market/en/cloud-select-industry-group-code-conduct>

[158] <https://ec.europa.eu/digital-single-market/en/time-ecsel>

[159] <https://ec.europa.eu/digital-single-market/en/etsi-cloud-standards-coordination>

[160] <https://ec.europa.eu/digital-single-market/en/policies/cyber-physical-systems>

[161] <https://ec.europa.eu/digital-single-market/en/policies/advanced-computing>

[162] <https://ec.europa.eu/digital-single-market/en/policies/smart-manufacturing>

[163] <https://ec.europa.eu/digital-single-market/en/factories-future>

[164] <https://ec.europa.eu/digital-single-market/en/qa-entrepreneurs-support>

[165] <https://ec.europa.eu/digital-single-market/en/ehealth-experts>

[166] <https://ec.europa.eu/digital-single-market/en/policies/ict-innovation>

[167] <https://ec.europa.eu/digital-single-market/en/policies/internet-things>

[168] <https://ec.europa.eu/digital-single-market/en/policies/ict-and-standardisation>

[169] <https://ec.europa.eu/digital-single-market/en/electronics-strategy-action>

[170] <https://ec.europa.eu/digital-single-market/en/content/completed-projects>

[171] <https://ec.europa.eu/digital-single-market/en/broadband-all-satellite>

[172] <https://ec.europa.eu/digital-single-market/en/innovation-procurement>

[173] <https://ec.europa.eu/digital-single-market/en/interoperability-standardisation-connecting-ehealth-services>

[174] <https://ec.europa.eu/digital-single-market/en/research-and-innovation-ehealth>

[175] <https://ec.europa.eu/digital-single-market/en/vision-and-innovation>

[176] <https://ec.europa.eu/digital-single-market/en/promote-capital-investment-production-europe>

[177] <https://ec.europa.eu/digital-single-market/en/smart-specialisation-dialogue-member-states-and-regions>

[178] <https://ec.europa.eu/digital-single-market/en/advanced-computing-research-projects>

[179] <https://ec.europa.eu/digital-single-market/en/embedded-systems>

[180] <https://ec.europa.eu/digital-single-market/en/monitoring-and-control>

[181] <https://ec.europa.eu/digital-single-market/en/access-design-and-silicon-developing-skills>

[182] <https://ec.europa.eu/digital-single-market/en/system-systems>

[183] <https://ec.europa.eu/digital-single-market/en/fet-projects-portfolio>

[184] <https://ec.europa.eu/digital-single-market/en/lighting-future>

[185] <https://ec.europa.eu/digital-single-market/en/organic-and-large-area-electronics>

[186] <https://ec.europa.eu/digital-single-market/en/opening-education>

[187] <https://ec.europa.eu/digital-single-market/en/coding-21st-century-skill>

[188] <https://ec.europa.eu/digital-single-market/en/research-and-innovation-ict-education>

[189] <https://ec.europa.eu/digital-single-market/en/financing-innovation>

[190] <https://ec.europa.eu/digital-single-market/en/open-innovation-group-members>

[191] <https://ec.europa.eu/digital-single-market/en/rolling-plan-ict-standardisation>

[192] <https://ec.europa.eu/digital-single-market/en/identification-ict-specifications>

[193] <https://ec.europa.eu/digital-single-market/en/potential-funding>

[194] <https://ec.europa.eu/digital-single-market/en/oispg-activities>

[195] <https://ec.europa.eu/digital-single-market/en/ict-innovation-horizon-2020>

[196] <https://ec.europa.eu/digital-single-market/en/electronics-roadmap-europe>

[197] <https://ec.europa.eu/digital-single-market/en/ehealth-studies-overview>

[198] <https://ec.europa.eu/digital-single-market/en/public-procurement-innovative-solutions>

[199] <https://ec.europa.eu/digital-single-market/en/pre-commercial-procurement>

[200] <https://ec.europa.eu/digital-single-market/en/guide-high-speed-broadband-investment>

[201] <https://ec.europa.eu/digital-single-market/en/european-digital-forum>

[202] <https://ec.europa.eu/digital-single-market/en/policies/big-data>

[203] <https://ec.europa.eu/digital-single-market/en/towards-thriving-data-driven-economy>

[204] <https://ec.europa.eu/digital-single-market/en/broadband-strategy-policy>

[205] <https://ec.europa.eu/digital-single-market/en/financing-broadband-project>

[206] <https://ec.europa.eu/digital-single-market/en/broadband-technologies>

[207] <https://ec.europa.eu/digital-single-market/en/startup-europe-networks>

[208] <https://ec.europa.eu/digital-single-market/en/startup-europe-building-ecosystem>

[209] <https://ec.europa.eu/digital-single-market/en/policies/language-technologies>

[210] <https://ec.europa.eu/digital-single-market/en/americas>

[211] <https://ec.europa.eu/digital-single-market/en/content/international-organisations-and-fora>

[212] <https://ec.europa.eu/digital-single-market/en/regional-and-bilateral-relations>

[213] <https://ec.europa.eu/digital-single-market/en/language-technologies-and-big-data>

[214] <https://ec.europa.eu/digital-single-market/en/research-standards>

[215] <https://ec.europa.eu/digital-single-market/en/cost-reduction-measures>

[216] <https://ec.europa.eu/digital-single-market/en/broadband-business-models>

[217] <https://ec.europa.eu/digital-single-market/en/eu-funded-projects>

[218] <https://ec.europa.eu/digital-single-market/en/global-internet-and-telecommunications>

[219] <https://ec.europa.eu/digital-single-market/en/carrier-model-options>

[220] <https://ec.europa.eu/digital-single-market/en/automated-translation>

[221] <https://ec.europa.eu/digital-single-market/en/media-freedom-projects>

[222] <https://ec.europa.eu/digital-single-market/en/mhealth>

[223] <https://ec.europa.eu/digital-single-market/en/startup-success-stories>

[224] <https://ec.europa.eu/digital-single-market/en/open-disruptive-innovation-0>

[225] <https://ec.europa.eu/digital-single-market/en/sme-instrument-frequently-asked-questions>

[226] <https://ec.europa.eu/digital-single-market/en/what-big-data-can-do-you>

[227] <https://ec.europa.eu/digital-single-market/en/global-internet-policy-observatory-gipo>

[228] <https://ec.europa.eu/digital-single-market/en/eu-code-week>

[229] <https://ec.europa.eu/digital-single-market/en/national-local-coalitions>

[230] <https://ec.europa.eu/digital-single-market/en/policies/einfrastructure>

[231] <https://ec.europa.eu/digital-single-market/en/access-passive-infrastructure>

[232] <https://ec.europa.eu/digital-single-market/en/coordination-civil-works>

[233] <https://ec.europa.eu/digital-single-market/en/permit-granting>

[234] <https://ec.europa.eu/digital-single-market/en/building-infrastructure>

[235] <https://ec.europa.eu/digital-single-market/en/ict-innovation-vouchers-action-1>

[236] <https://ec.europa.eu/digital-single-market/en/get-involved-digital-coalition>

[237] <https://ec.europa.eu/digital-single-market/en/big-data-value-public-private-partnership>

[238] <https://ec.europa.eu/digital-single-market/en/open-government>

[239] <https://ec.europa.eu/digital-single-market/en/ict-enabled-public-sector-innovation-horizon-2020>

[240] <https://ec.europa.eu/digital-single-market/en/policies/high-performance-computing>

[241] <https://ec.europa.eu/digital-single-market/en/policies/copyright>

[242] <https://ec.europa.eu/digital-single-market/en/horizon-prizes>

[243] <https://ec.europa.eu/digital-single-market/en/policies/egovernment>

[244] <https://ec.europa.eu/digital-single-market/en/policies/robotics>

[245] <https://ec.europa.eu/digital-single-market/en/policies/telecom-laws>

[246] <https://ec.europa.eu/digital-single-market/en/policies/cloud-computing>

[247] <https://ec.europa.eu/digital-single-market/en/policies/strengthening-trust-and-security>

[248] <https://ec.europa.eu/digital-single-market/en/policies/supporting-media-and-digital-culture>
[249] <https://ec.europa.eu/digital-single-market/en/policies/digital-cultural-heritage>
[250] <https://ec.europa.eu/digital-single-market/en/broadband-and-infrastructure-mapping-project>
[251] <https://ec.europa.eu/digital-single-market/en/broadband-action-plan>
[252] <https://ec.europa.eu/digital-single-market/en/defining-your-broadband-plan>
[253] <https://ec.europa.eu/digital-single-market/en/four-key-strategic-choices>
[254] <https://ec.europa.eu/digital-single-market/en/infrastructure-and-service-based-competition>
[255] <https://ec.europa.eu/digital-single-market/en/network-and-topology>
[256] <https://ec.europa.eu/digital-single-market/en/actors-broadband-value-chain>
[257] <https://ec.europa.eu/digital-single-market/en/basic-business-models>
[258] <https://ec.europa.eu/digital-single-market/en/main-financing-tools>
[259] <https://ec.europa.eu/digital-single-market/en/financing-public-private-joint-ventures-and-private-run-deployments>
[260] <https://ec.europa.eu/digital-single-market/en/state-aid>
[261] <https://ec.europa.eu/digital-single-market/en/investment-models>
[262] <https://ec.europa.eu/digital-single-market/en/robotics-public-private-partnership-horizon-2020>
[263] <https://ec.europa.eu/digital-single-market/en/policies/emergency-and-support-lines>
[264] <https://ec.europa.eu/digital-single-market/en/policies/shaping-digital-single-market>
[265] <https://ec.europa.eu/digital-single-market/en/policies/creating-digital-society>
[266] <https://ec.europa.eu/digital-single-market/en/policies/advancing-digital-science-and-infrastructures>
[267] <https://ec.europa.eu/digital-single-market/en/tech-all-stars>
[268] <https://ec.europa.eu/digital-single-market/en/desi>
[269] <https://ec.europa.eu/digital-single-market/en/eu-member-states>
[270] <https://ec.europa.eu/digital-single-market/en/policies/digital-skills>
[271] <https://ec.europa.eu/digital-single-market/en/citizen-science>
[272] <https://ec.europa.eu/digital-single-market/en/innovation-radar>
[273] <https://ec.europa.eu/digital-single-market/en/our-studies-and-open-datasets>
[274] <https://ec.europa.eu/digital-single-market/en/policies/media-programme>
[275] <https://ec.europa.eu/digital-single-market/en/alliance-internet-things-innovation-aioti>
[276] <https://ec.europa.eu/digital-single-market/en/better-access-consumers-and-business-online-goods>
[277] <https://ec.europa.eu/digital-single-market/en/right-environment-digital-networks-and-services>
[278] <https://ec.europa.eu/digital-single-market/en/economy-society>
[279] <https://ec.europa.eu/digital-single-market/en/human-capital>
[280] <https://ec.europa.eu/digital-single-market/en/use-internet>
[281] <https://ec.europa.eu/digital-single-market/en/connectivity>
[282] <https://ec.europa.eu/digital-single-market/en/digital-public-services-scoreboard>
[283] <https://ec.europa.eu/digital-single-market/en/research-development-scoreboard>
[284] <https://ec.europa.eu/digital-single-market/en/integration-digital-technology>
[285] <https://ec.europa.eu/digital-single-market/en/european-film-forum>
[286] <https://ec.europa.eu/digital-single-market/en/satellite-and-cable-directive>
[287] <https://ec.europa.eu/digital-single-market/en/eu-copyright-legislation>
[288] <https://ec.europa.eu/digital-single-market/en/media-literacy>
[289] <https://ec.europa.eu/digital-single-market/en/high-performance-computing-contractual-public-private-partnership-hpc-cppp>
[290] <https://ec.europa.eu/digital-single-market/en/policies/online-platforms>
[291] <https://ec.europa.eu/digital-single-market/en/policies/geoblocking>
[292] <https://ec.europa.eu/digital-single-market/en/e-commerce-directive>
[293] <https://ec.europa.eu/digital-single-market/en/eu-funded-societal-challenges-projects-lab-market>
[294] <https://ec.europa.eu/digital-single-market/en/cybersecurity-industry>
[295] <https://ec.europa.eu/digital-single-market/en/policies/digital-inclusion-and-web-accessibility>
[296] <https://ec.europa.eu/digital-single-market/en/european-broadband-award>
[297] <https://ec.europa.eu/digital-single-market/en/broadband-competence-offices>
[298] <https://ec.europa.eu/digital-single-market/en/fourth-industrial-revolution>
[299] <https://ec.europa.eu/digital-single-market/en/%20european-cloud-initiative>
[300] <https://ec.europa.eu/digital-single-market/en/european-egovernment-action-plan-2016-2020>
[301] <https://ec.europa.eu/digital-single-market/en/egovernment-action-plan-digitising-european-industry>
[302] <https://ec.europa.eu/digital-single-market/en/standards-digitising-european-industry>
[303] <https://ec.europa.eu/digital-single-market/en/financial-guarantee-facility-culture-creative>
[304] <https://ec.europa.eu/digital-single-market/en/research-innovation-iot>

[305] <https://ec.europa.eu/digital-single-market/en/geant-project-european-success-story>

[306] <https://ec.europa.eu/digital-single-market/en/25-years-media-programme>

[307] <https://ec.europa.eu/digital-single-market/en/policies/quantum-technologies>

[308] <https://ec.europa.eu/digital-single-market/en/revision-audiovisual-media-services-directive-avmsd>

[309] <https://ec.europa.eu/digital-single-market/en/policies/ecommerce>

[310] <https://ec.europa.eu/digital-single-market/en/eidas-observatory>

[311] <https://ec.europa.eu/digital-single-market/en/eu-trust-mark>

[312] <https://ec.europa.eu/digital-single-market/en/privacy-code-conduct-mobile-health-apps>

[313] <https://ec.europa.eu/digital-single-market/en/network-and-information-security-nis-directive>

[314] <https://ec.europa.eu/digital-single-market/en/european-digital-progress-report>

[315] <https://ec.europa.eu/digital-single-market/en/policies/improving-connectivity-and-access>

[316] <https://ec.europa.eu/digital-single-market/en/modernisation-eu-copyright-rules>

[317] <https://ec.europa.eu/digital-single-market/en/5g-europe-action-plan>

[318] <https://ec.europa.eu/digital-single-market/en/policies/next-generation-internet>

[319] <https://ec.europa.eu/digital-single-market/en/international-cooperation-cloud-computing>

[320] <https://ec.europa.eu/digital-single-market/en/cordination-european-national-regional-initiatives>

[321] <https://ec.europa.eu/digital-single-market/en/digital-innovation-hubs>

[322] <https://ec.europa.eu/digital-single-market/en/industrial-platforms-and-large-scale-pilots>

[323] <https://ec.europa.eu/digital-single-market/en/policies/wifi4eu-free-wi-fi-europeans>

[324] <https://ec.europa.eu/digital-single-market/en/platforms-to-business-trading-practices>

[325] <https://ec.europa.eu/digital-single-market/en/illegal-content-online-platforms>

[326] <https://ec.europa.eu/digital-single-market/en/european-open-science-cloud>

[327] <https://ec.europa.eu/digital-single-market/en/policies/multimedia-actions>

[328] <https://ec.europa.eu/digital-single-market/en/policies/building-european-data-economy>

[329] <https://ec.europa.eu/digital-single-market/en/alliance-better-protect-minors-online>

[330] <https://ec.europa.eu/digital-single-market/en/cooperative-connected-and-automated-mobility-europe>

[331] <https://ec.europa.eu/digital-single-market/en/digital-skills-initiatives>

[332] <https://ec.europa.eu/digital-single-market/en/pledges-action>

[333] <https://ec.europa.eu/digital-single-market/en/become-member-digital-skills-and-jobs-coalition>

[334] <https://ec.europa.eu/digital-single-market/en/policies/social-media-and-networks-innovation-and-policy>

[335] <https://ec.europa.eu/digital-single-market/en/faq/question-and-answers-roaming>

[336] <https://ec.europa.eu/digital-single-market/en/roaming-charges-what-has-european-commission-done-so-far>

[337] <https://ec.europa.eu/digital-single-market/en/cross-border-portability-online-content-services>

[338] <https://ec.europa.eu/digital-single-market/en/practical-information-ict-proposers-day-2017>

[339] <https://ec.europa.eu/digital-single-market/en/policies/foreign-policy>

[340] <https://ec.europa.eu/digital-single-market/en/expert-group-digital-cultural-heritage-and-europeana-dche>

[341] <https://ec.europa.eu/digital-single-market/en/collective-rights-management-directive>

[342] <https://ec.europa.eu/digital-single-market/en/graphene-flagship>

[343] <https://ec.europa.eu/digital-single-market/en/eu-cybersecurity-certification-framework>

[344] <https://ec.europa.eu/digital-single-market/en/free-flow-non-personal-data>

[345] <https://ec.europa.eu/digital-single-market/en/fake-news>

[346] <https://ec.europa.eu/digital-single-market/en/digital-opportunity-traineeships-boosting-digital-skills-job>

[347] <https://ec.europa.eu/digital-single-market/en/governing-board-digital-skills-and-jobs-coalition>

[348] <https://ec.europa.eu/digital-single-market/en/faq/questions-and-answers-wifi4eu>

[349] <https://ec.europa.eu/digital-single-market/en/pillars-digitising-european-industry-initiative>