Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (Recast) (Text with EEA relevance)

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(Recast)

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THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 114 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee[(1)],

Having regard to the opinion of the Committee of the Regions[(2)],

Acting in accordance with the ordinary legislative procedure[(3)],

Whereas:

(1) Directives 2002/19/EC[(4)], 2002/20/EC[(5)], 2002/21/EC[(6)] and 2002/22/EC[(7)] of the European Parliament and of the Council have been substantially amended. Since further amendments are to be made, those Directives should be recast in the interests of clarity.

(2) The functioning of the five Directives which are part of the existing regulatory framework for electronic communications networks and services, namely Directives 2002/19/EC, 2002/20/EC, 2002/21/EC and 2002/22/EC, and Directive 2002/58/EC of the European Parliament and of the Council[(8)], is subject to periodic review by the Commission, with a view, in particular, to determining the need for modification in light of technological and market developments.

(3) In its communication or 6 May 2015 setting out a Digital Single Market Strategy for Europe, the Commission stated that its review of the telecommunications framework would focus on measures that aim to provide incentives for investment in high-speed broadband networks, bring a more consistent internal market approach to radio spectrum policy and management, deliver conditions for a true internal market by tackling regulatory fragmentation, ensure effective protection of consumers, a level playing field for all market players and consistent application of the rules, as well as provide a more effective regulatory institutional framework.

(4) This Directive is part of a 'Regulatory Fitness' (REFIT) exercise, the scope of which includes four Directives, namely 2002/19/EC, 2002/20/EC, 2002/21/EC and 2002/22/EC, and Regulation (EC) No 1211/2009 of the European Parliament and of the Council[(9)]. Each of those Directives contains measures applicable to providers of electronic communications networks and of electronic communications services, consistently with the regulatory history of the sector under which undertakings were vertically integrated, namely, active in both the provision of networks and of services. The review offers an occasion to recast the four Directives in order to simplify the current structure with a view to reinforcing its consistency and accessibility in relation to the REFIT objective. It also offers the possibility to adapt the structure to the new market reality, where the provision of communications services is no longer necessarily bundled to the provision of a network. As provided in the Interinstitutional Agreement of 28 November 2001 on a more structured use of the recasting technique for legal acts[(10)], recasting consists in the adoption of a new legal act which incorporates in a single text both the substantive amendments which it makes to an earlier act and the unchanged provisions of that act. The proposal for recasting deals with the substantive amendments which it makes to an earlier act, and on a secondary level, includes the codification of the unchanged provisions of the earlier act with those substantive amendments.

(5) This Directive creates a legal framework to ensure freedom to provide electronic communications networks and services, subject only to the conditions laid down in this Directive and to any restrictions in accordance with Article 52(1) of the Treaty on the Functioning of the European Union (TFEU), in particular measures regarding public policy, public security and public health, and consistent with Article 52(1) of the Charter of Fundamental Rights of the European Union (the 'Charter').

(6) This Directive is without prejudice to the possibility for each Member State to take the necessary measures to ensure the protection of its essential security interests, to safeguard public policy and public security, and to permit the investigation, detection and prosecution of criminal offences, taking into account that any limitation to the exercise of the rights and freedoms recognised by the Charter, in particular in Articles 7, 8 and 11 thereof, such as limitations regarding the processing of data, are to be provided for by law, respect the essence of those rights and freedoms and be subject to the principle of proportionality, in accordance with Article 52(1) of the Charter.

(7) The convergence of the telecommunications, media and information technology sectors means that all electronic communications networks and services should be covered to the extent possible by a single European electronic communications code established by means of a single Directive, with the exception of matters better dealt with through directly applicable rules established by means of regulations. It is necessary to separate the regulation of electronic communications networks and services from the regulation of content. Therefore, this Directive does not cover the content of services delivered over electronic communications networks using electronic communications services, such as broadcasting content, financial services and certain information society services, and is without prejudice to measures taken at Union or national level

in respect of such services, in accordance with Union law, in order to promote cultural and linguistic diversity and to ensure the defence of media pluralism. The content of television programmes is covered by Directive 2010/13/EU of the European Parliament and of the Council[(11)]. The regulation of audiovisual policy and content aims at achieving general interest objectives, such as freedom of expression, media pluralism, impartiality, cultural and linguistic diversity, social inclusion, consumer protection and the protection of minors. The separation between the regulation of electronic communications and the regulation of content does not affect the taking into account of the links existing between them, in particular in order to guarantee media pluralism, cultural diversity and consumer protection. Within the limits of their competences, competent authorities should contribute to ensuring the implementation of policies aiming to promote those objectives.

(8) This Directive does not affect the application to radio equipment of Directive 2014/53/EU of the European Parliament and of the Council[(12)], but does cover car radio and consumer radio receivers, and consumer digital television equipment.

(9) In order to allow national regulatory and other competent authorities to meet the objectives set out in this Directive, in particular concerning end-to-end interoperability, the scope of the Directive should cover certain aspects of radio equipment as defined in Directive 2014/53/EU and consumer equipment used for digital television, in order to facilitate access for end-users with disabilities. It is important for national regulatory and other competent authorities to encourage network operators and equipment manufacturers to cooperate in order to facilitate access by end-users with disabilities to electronic communications services. The non-exclusive use of radio spectrum for the self-use of radio terminal equipment, although not related to an economic activity, should also be the subject of this Directive in order to ensure a coordinated approach with regard to their authorisation regime.

(10) Certain electronic communications services under this Directive could also fall within the scope of the definition of ‘information society service’ set out in Article 1 of Directive (EU) 2015/1535 of the European Parliament and of the Council[(13)]. The provisions of that Directive that govern information society services apply to those electronic communications services to the extent that this Directive or other Union legal acts do not contain more specific provisions applicable to electronic communications services. However, electronic communications services such as voice telephony, messaging services and electronic mail services are covered by this Directive. The same undertaking, for example an internet service provider, can offer both an electronic communications service, such as access to the internet, and services not covered by this Directive, such as the provision of web-based and not communications-related content.

(11) The same undertaking, for example a cable operator, can offer both an electronic communications service, such as the conveyance of television signals, and services not covered under this Directive, such as the commercialisation of an offer of sound or television broadcasting content services, and therefore additional obligations can be imposed on such an undertaking in relation to its activity as a content provider or

distributor, in accordance with provisions other than those of this Directive, without prejudice to the conditions laid in an annex to this Directive.

(12) The regulatory framework should cover the use of radio spectrum by all electronic communications networks, including the emerging self-use of radio spectrum by new types of networks consisting exclusively of autonomous systems of mobile radio equipment that is connected via wireless links without a central management or centralised network operator, and not necessarily within the exercise of any specific economic activity. In the developing 5G wireless communications environment, such networks are likely to develop in particular outside buildings and on the roads, for transport, energy, research and development, eHealth, public protection and disaster relief, the Internet of Things, machine-to-machine and connected cars. As a result, the application by Member States, based on Article 7 of Directive 2014/53/EU, of additional national requirements regarding the putting into service or use of such radio equipment, or both, in relation to the effective and efficient use of radio spectrum and avoidance of harmful interference should reflect the principles of the internal market.

(13) The requirements concerning the capabilities of electronic communications networks are constantly increasing. While in the past the focus was mainly on growing bandwidth available overall and to each individual user, other parameters such as latency, availability and reliability are becoming increasingly important. The current response towards that demand is to bring optical fibre closer and closer to the user, and future 'very high capacity networks' require performance parameters which are equivalent to those that a network based on optical fibre elements at least up to the distribution point at the serving location can deliver. In the case of fixed-line connection, this corresponds to network performance equivalent to that achievable by an optical fibre installation up to a multi-dwelling building, considered to be the serving location. In the case of wireless connection, this corresponds to network performance similar to that achievable based on an optical fibre installation up to the base station, considered to be the serving location. Variations in end-users' experience which are due to the different characteristics of the medium by which the network ultimately connects with the network termination point should not be taken into account for the purposes of establishing whether a wireless network could be considered as providing similar network performance. In accordance with the principle of technology neutrality, other technologies and transmission media should not be excluded, where they compare with that baseline scenario in terms of their capabilities. The roll-out of such 'very high capacity networks' is likely to further increase the capabilities of networks and pave the way for the roll-out of future wireless network generations based on enhanced air interfaces and a more densified network architecture.

(14) Definitions need to be adjusted to ensure that they are in line with the principle of technology neutrality and to keep pace with technological development, including new forms of network management such as through software emulation or software-defined networks. Technological and market evolution has brought networks to move to internet protocol (IP) technology, and enabled end-users to choose between a range of competing voice service providers. Therefore, the term 'publicly available telephone service', which is exclusively used in Directive 2002/22/EC and widely

perceived as referring to traditional analogue telephone services, should be replaced by the more current and technological neutral term 'voice communications service'. Conditions for the provision of a service should be separated from the actual definitional elements of a voice communications service, namely, a publicly available electronic communications service for originating and receiving, directly or indirectly, national or national and international calls through a number or numbers in a national or international numbering plan, whether such a service is based on circuit switching or packet switching technology. It is the nature of such a service that it is bidirectional, enabling both parties to communicate. A service which does not fulfil all those conditions, such as for example a 'click-through' application on a customer service website, is not such a service. Voice communications services also include means of communication specifically intended for end-users with disabilities using text relay or total conversation services.

(15) The services used for communications purposes, and the technical means of their delivery, have evolved considerably. End-users increasingly substitute traditional voice telephony, text messages (SMS) and electronic mail conveyance services by functionally equivalent online services such as Voice over IP, messaging services and web-based e-mail services. In order to ensure that end-users and their rights are effectively and equally protected when using functionally equivalent services, a future-oriented definition of electronic communications services should not be purely based on technical parameters but rather build on a functional approach. The scope of necessary regulation should be appropriate to achieve its public interest objectives. While 'conveyance of signals' remains an important parameter for determining the services falling into the scope of this Directive, the definition should cover also other services that enable communication. From an end-user's perspective it is not relevant whether a provider conveys signals itself or whether the communication is delivered via an internet access service. The definition of electronic communications services should therefore contain three types of services which may partly overlap, that is to say internet access services as defined in point (2) of Article 2 of Regulation (EU) 2015/2120 of the European Parliament and of the Council[(14)], interpersonal communications services as defined in this Directive, and services consisting wholly or mainly in the conveyance of signals. The definition of electronic communications service should eliminate ambiguities observed in the implementation of the definition as it existed prior to the adoption of this Directive and allow a calibrated provision-by-provision application of the specific rights and obligations contained in the framework to the different types of services. The processing of personal data by electronic communications services, whether as remuneration or otherwise, should comply with Regulation (EU) 2016/679 of the European Parliament and of the Council[(15)].

(16) In order to fall within the scope of the definition of electronic communications service, a service needs to be provided normally in exchange for remuneration. In the digital economy, market participants increasingly consider information about users as having a monetary value. Electronic communications services are often supplied to the end-user not only for money, but increasingly and in particular for the provision of personal data or other data. The concept of remuneration should therefore encompass situations

where the provider of a service requests and the end-user knowingly provides personal data within the meaning of Regulation (EU) 2016/679 or other data directly or indirectly to the provider. It should also encompass situations where the end-user allows access to information without actively supplying it, such as personal data, including the IP address, or other automatically generated information, such as information collected and transmitted by a cookie. In line with the case-law of the Court of Justice of the European Union (Court of Justice) on Article 57 TFEU[16], remuneration also exists within the meaning of the TFEU if the service provider is paid by a third party and not by the service recipient. The concept of remuneration should therefore also encompass situations in which the end-user is exposed to advertisements as a condition for gaining access to the service, or situations in which the service provider monetises personal data it has collected in accordance with Regulation (EU) 2016/679.

(17) Interpersonal communications services are services that enable interpersonal and interactive exchange of information, covering services like traditional voice calls between two individuals but also all types of emails, messaging services, or group chats. Interpersonal communications services only cover communications between a finite, that is to say not potentially unlimited, number of natural persons, which is determined by the sender of the communication. Communications involving legal persons should fall within the scope of the definition where natural persons act on behalf of those legal persons or are involved at least on one side of the communication. Interactive communication entails that the service allows the recipient of the information to respond. Services which do not meet those requirements, such as linear broadcasting, video on demand, websites, social networks, blogs, or exchange of information between machines, should not be considered to be interpersonal communications services. In exceptional circumstances a service should not be considered to be an interpersonal communications service if the interpersonal and interactive communication facility is a minor and purely ancillary feature to another service and for objective technical reasons cannot be used without that principal service, and its integration is not a means to circumvent the applicability of the rules governing electronic communications services. As elements of an exemption from the definition the terms ‘minor’ and ‘purely ancillary’ should be interpreted narrowly and from an objective end-user’s perspective. An interpersonal communications feature could be considered to be minor where its objective utility for an end-user is very limited and where it is in reality barely used by end-users. An example of a feature that could be considered to fall outside the scope of the definition of interpersonal communications services might be, in principle, a communication channel in online games, depending on the features of the communication facility of the service.

(18) Interpersonal communications services using numbers from national and international numbering plans connect with publicly assigned numbering resources. Those number-based interpersonal communications services comprise both services to which end-users numbers are assigned for the purpose of ensuring end-to-end connectivity and services enabling end-users to reach persons to whom such numbers have been assigned. The mere use of a number as an identifier should not be considered to be equivalent to the use of a number to connect with publicly assigned numbers

and should therefore, in itself, not be considered to be sufficient to qualify a service as a number-based interpersonal communications service. Number-independent interpersonal communications services should be subject to obligations only where public interests require that specific regulatory obligations apply to all types of interpersonal communications services, regardless of whether they use numbers for the provision of their service. It is justified to treat number-based interpersonal communications services differently, as they participate in, and hence also benefit from, a publicly assured interoperable ecosystem.

(19) The network termination point represents a boundary for regulatory purposes between the regulatory framework for electronic communications networks and services and the regulation of telecommunications terminal equipment. Defining the location of the network termination point is the responsibility of the national regulatory authority. In light of the practice of national regulatory authorities, and given the variety of fixed and wireless topologies, the Body of European Regulators for Electronic Communications ('BEREC') should, in close cooperation with the Commission, adopt guidelines on common approaches to the identification of the network termination point, in accordance with this Directive, in various concrete circumstances.

(20) Technical developments make it possible for end-users to access emergency services not only by voice calls but also by other interpersonal communications services. The concept of emergency communication should therefore cover all interpersonal communications services that allow such emergency services access. It builds on the emergency system elements already enshrined in Union law, namely a public safety answering point ('PSAP') and a most appropriate PSAP as defined in Regulation (EU) 2015/758 of the European Parliament and of the Council[(17)], and on emergency services as defined in Commission Delegated Regulation (EU) No 305/2013[(18)].

(21) National regulatory and other competent authorities should have a harmonised set of objectives and principles to underpin their work, and should, where necessary, coordinate their actions with the authorities of other Member States and with BEREC in carrying out their tasks under this regulatory framework.

(22) The tasks assigned to competent authorities by this Directive contribute to the fulfilment of broader policies in the areas of culture, employment, the environment, social cohesion and town and country planning.

(23) The regulatory framework should, in addition to the existing three primary objectives of promoting competition, the internal market and end-user interests, pursue an additional connectivity objective, articulated in terms of outcomes: widespread access to and take-up of very high capacity networks for all citizens of the Union and Union businesses on the basis of reasonable price and choice, effective and fair competition, open innovation, efficient use of radio spectrum, common rules and predictable regulatory approaches in the internal market and the necessary sector-specific rules to safeguard the interests of citizens of the Union. For the Member States, the national regulatory and other competent authorities and the stakeholders, that connectivity objective translates, on the one hand, into aiming for the highest capacity networks and services economically

sustainable in a given area, and, on the other, into pursuing territorial cohesion, in the sense of convergence in capacity available in different areas.

(24) Progress towards the achievement of the general objectives of this Directive should be supported by a robust system of continuous assessment and benchmarking by the Commission of Member States with respect to the availability of very high capacity networks in all major socio-economic drivers such as schools, transport hubs and major providers of public services, and highly digitised businesses, the availability of uninterrupted 5G coverage for urban areas and major terrestrial transport paths, and the availability to all households in each Member State of electronic communications networks which are capable of providing at least 100 Mbps, and which are promptly upgradeable to gigabit speeds. To that end, the Commission should continue monitoring the performance of Member States, including, by way of an example, indexes that summarise relevant indicators on the Union's digital performance and track the evolution of Member States in digital competitiveness, such as the Digital Economy and Society Index, and, where necessary, establish new methods and new objective, concrete and quantifiable criteria for benchmarking the effectiveness of Member States.

(25) The principle that Member States should apply Union law in a technologically neutral fashion, that is to say that a national regulatory or other competent authority should neither impose nor discriminate in favour of the use of a particular type of technology, does not preclude the taking of proportionate steps to promote certain specific services where justified in order to attain the objectives of the regulatory framework, for example digital television as a means for increasing radio spectrum efficiency. Furthermore, that principle does not preclude taking into account that certain transmission media have physical characteristics and architectural features that can be superior in terms of quality of service, capacity, maintenance cost, energy efficiency, management flexibility, reliability, robustness and scalability, and, ultimately, performance, which can be reflected in actions taken with a view to pursuing the various regulatory objectives.

(26) Both efficient investment and competition should be encouraged in tandem, in order to increase economic growth, innovation and consumer choice.

(27) Competition can best be fostered through an economically efficient level of investment in new and existing infrastructure, complemented by regulation, where necessary, to achieve effective competition in retail services. An efficient level of infrastructure-based competition is the extent of infrastructure duplication at which investors can reasonably be expected to make a fair return based on reasonable expectations about the evolution of market shares.

(28) It is necessary to give appropriate incentives for investment in new very high capacity networks that support innovation in content-rich internet services and strengthen the international competitiveness of the Union. Such networks have enormous potential to deliver benefits to consumers and businesses across the Union. It is therefore vital to promote sustainable investment in the development of those new networks, while safeguarding competition, as bottlenecks and barriers to entry remain at the

infrastructure level, and boosting consumer choice through regulatory predictability and consistency.

(29) This Directive aims to progressively reduce ex ante sector-specific rules as competition in the markets develops and, ultimately, to ensure that electronic communications are governed only by competition law. Considering that the markets for electronic communications have shown strong competitive dynamics in recent years, it is essential that ex ante regulatory obligations are imposed only where there is no effective and sustainable competition on the markets concerned. The objective of ex ante regulatory intervention is to produce benefits for end-users by making retail markets effectively competitive on a sustainable basis. Obligations at wholesale level should be imposed where otherwise one or more retail markets are not likely to become effectively competitive in the absence of those obligations. It is likely that national regulatory authorities are gradually, through the process of market analysis, able to find retail markets to be competitive even in the absence of wholesale regulation, especially taking into account expected improvements in innovation and competition. In such a case, the national regulatory authority should conclude that regulation is no longer needed at wholesale level, and assess the corresponding relevant wholesale market with a view to withdrawing ex ante regulation. In doing so, the national regulatory authority should take into account any leverage effects between wholesale and related retail markets which might require the removal of barriers to entry at the infrastructure level in order to ensure long-term competition at the retail level.

(30) Electronic communications are becoming essential for an increasing number of sectors. The Internet of Things is an illustration of how the radio signal conveyance underpinning electronic communications continues to evolve and shape societal and business reality. To derive the greatest benefit from those developments, the introduction and accommodation of new wireless communications technologies and applications in radio spectrum management is essential. As other technologies and applications relying on radio spectrum are equally subject to growing demand, and can be enhanced by integrating or combining them with electronic communications, radio spectrum management should adopt, where appropriate, a cross-sectorial approach to improve the efficient use of radio spectrum.

(31) Strategic planning, coordination and, where appropriate, harmonisation at Union level can help ensure that radio spectrum users derive the full benefits of the internal market and that Union interests can be effectively defended globally. For those purposes it should be possible to adopt multiannual radio spectrum policy programmes, where appropriate. The first such programme was established by Decision No 243/2012/EU of the European Parliament and of the Council[19], setting out policy orientations and objectives for the strategic planning and harmonisation of the use of radio spectrum in the Union. It should be possible for those policy orientations and objectives to refer to the availability and efficient use of radio spectrum necessary for the establishment and functioning of the internal market, in accordance with this Directive.

(32) National borders are increasingly irrelevant in determining optimal radio spectrum use. Undue fragmentation amongst national policies result in increased costs and lost market

opportunities for radio spectrum users and slows down innovation to the detriment of the proper functioning of the internal market and prejudice to consumers and the economy as a whole.

(33) The radio spectrum management provisions of this Directive should be consistent with the work of international and regional organisations dealing with radio spectrum management, such as the International Telecommunications Union (ITU) and the European Conference of Postal and Telecommunications Administrations (CEPT), in order to ensure the effective management of and harmonisation of the use of radio spectrum across the Union and between the Member States and other members of the ITU.

(34) In accordance with the principle of the separation of regulatory and operational functions, Member States should guarantee the independence of the national regulatory and other competent authorities with a view to ensuring the impartiality of their decisions. This requirement of independence is without prejudice to the institutional autonomy and constitutional obligations of the Member States or to the principle of neutrality with regard to the rules in Member States governing the system of property ownership laid down in Article 345 TFEU. National regulatory and other competent authorities should be in possession of all the necessary resources, in terms of staffing, expertise, and financial means, for the performance of their tasks.

(35) Certain tasks pursuant to the Directive, such as ex ante market regulation, including the imposition of obligations for access and interconnection, and the resolution of disputes between undertakings are tasks which should be undertaken only by national regulatory authorities, namely, bodies which are independent both from the sector and from any external intervention or political pressure. Unless otherwise provided, Member States should be able to assign other regulatory tasks provided for in this Directive either to the national regulatory authorities or to other competent authorities. In the course of transposition, Member States should promote the stability of competences of the national regulatory authorities with regard to the assignment of tasks which resulted from the transposition of the Union electronic communications regulatory framework as amended in 2009, in particular those related to market competition or market entry. Where tasks are assigned to other competent authorities, those other competent authorities should seek to consult the national regulatory authorities before taking a decision. Pursuant to the principle of good cooperation, national regulatory and other competent authorities should exchange information for the exercise of their tasks.

(36) This Directive does not include substantive provisions on open internet access or roaming and is without prejudice to the allocation of competences to national regulatory authorities in Regulation (EU) No 531/2012 of the European Parliament and of the Council[(20)] and in Regulation (EU) 2015/2120. However, this Directive provides, in addition, for national regulatory authorities to be competent for assessing and monitoring closely market access and competition issues which potentially affect the rights of end-users to an open internet access.

(37) The independence of the national regulatory authorities was strengthened in the review of the electronic communications regulatory framework completed in 2009 in order

to ensure a more effective application of the regulatory framework and to increase their authority and the predictability of their decisions. To that end, express provision had to be made in national law to ensure that, in the exercise of its tasks, a national regulatory authority is protected against external intervention or political pressure liable to jeopardise its independent assessment of matters coming before it. Such outside influence makes a national legislative body unsuited to act as a national regulatory authority under the regulatory framework. For that purpose, rules had to be laid down at the outset regarding the grounds for the dismissal of the head of the national regulatory authority in order to remove any reasonable doubt as to the neutrality of that body and its imperviousness to external factors. In order to avoid arbitrary dismissals, dismissed members should have the right to request that the competent courts verify the existence of a valid reason to dismiss, among those provided for in this Directive. Such dismissals should relate only to the personal or professional qualifications of the head or member. It is important that national regulatory authorities have their own budget allowing them, in particular, to recruit a sufficient number of qualified staff. In order to ensure transparency, that budget should be published annually. Within the limits of their budget, they should have autonomy in managing their resources, human and financial. In order to ensure impartiality, Member States that retain ownership of, or control, undertakings contributing to the budget of the national regulatory or other competent authorities through administrative charges should ensure that there is effective structural separation of activities associated with the exercise of ownership or control from the exercise of control over the budget.

(38) There is a need to further reinforce the independence of the national regulatory authorities to ensure the imperviousness of its head and members to external pressure, by providing minimum appointment qualifications, and a minimum duration for their mandate. Furthermore, to address the risk of regulatory capture, ensure continuity and enhance independence, Member States should consider limiting the possibility of renewing the mandates of the head or members of the board and set up an appropriate rotation scheme for the board and the top management. This could be arranged, for instance, by appointing the first members of the collegiate body for different periods in order for their mandates, as well as that of their successors, not to lapse at the same moment.

(39) National regulatory authorities should be accountable for, and should be required to report on, the way in which they are exercising their tasks. That obligation should normally take the form of an annual reporting obligation rather than ad hoc reporting requests, which, if disproportionate, could limit their independence or hinder them in the exercise of their tasks. Indeed, according to the case-law of the Court of Justice[(21)], extensive or unconditional reporting obligations may indirectly affect the independence of an authority.

(40) Member States should notify the Commission of the identity of the national regulatory and other competent authorities. For authorities competent for granting rights of way, it should be possible to fulfil the notification requirement by a reference to the single information point established pursuant to Directive 2014/61/EU of the European Parliament and of the Council[(22)].

(41) The least onerous authorisation system possible should be used to allow the provision of electronic communications networks and services in order to stimulate the development of new communications services and pan-European communications networks and services and to allow service providers and consumers to benefit from the economies of scale of the internal market.

(42) The benefits of the internal market to service providers and end-users can be best achieved by general authorisation of electronic communications networks and of electronic communications services other than number-independent interpersonal communications services, without requiring any explicit decision or administrative act by the national regulatory authority and by limiting any procedural requirements to a declaratory notification only. Where Member States require notification by providers of electronic communications networks or services when they start their activities, such notification should not entail administrative cost for the providers and could be made available via an entry point at the website of the competent authorities. In order to support effective cross-border coordination, in particular for pan-European operators, BEREC should establish and maintain a database of such notifications. Competent authorities should transmit only complete notifications to BEREC. Member States should not impede the provision of networks or services in any way, including on grounds of incompleteness of a notification.

(43) Notifications should entail a mere declaration of the provider's intention to commence the provision of electronic communications networks and services. A provider should be required to complement that declaration only with the information set out in this Directive. Member States should not impose additional or separate notification requirements.

(44) Contrary to the other categories of electronic communications networks and services as defined in this Directive, number-independent interpersonal communications services do not benefit from the use of public numbering resources and do not participate in a publicly assured interoperable ecosystem. It is therefore not appropriate to subject those types of services to the general authorisation regime.

(45) When granting rights of use for radio spectrum, for numbering resources or rights to install facilities, the competent authorities should inform the undertakings to which they grant such rights of the relevant conditions. Member States should be able to lay down such conditions for the use of radio spectrum in individual rights of use or in the general authorisation.

(46) General authorisations should contain only conditions which are specific to the electronic communications sector. They should not be made subject to conditions which are already applicable by virtue of other existing national law, in particular regarding consumer protection, which is not specific to the communications sector. For instance, competent authorities should be able to inform undertakings about the applicable environmental and town-and-country-planning requirements. Conditions imposed under the general authorisation do not affect the determination of applicable law pursuant to Regulation (EC) No 593/2008 of the European Parliament and of the Council[23].

(47) The conditions that could be attached to general authorisations should cover specific conditions governing accessibility for end-users with disabilities and the need of public authorities and emergency services to communicate between themselves and with the general public before, during and after major disasters.

(48) It is necessary to include the rights and obligations of undertakings under general authorisations explicitly in such authorisations in order to ensure a level playing field throughout the Union and to facilitate cross-border negotiation of interconnection between public electronic communications networks.

(49) General authorisations entitle undertakings providing electronic communications networks and services to the public to negotiate interconnection under the conditions of this Directive. Undertakings providing electronic communications networks and services other than to the public can negotiate interconnection on commercial terms.

(50) Competent authorities should duly take into account, when attaching conditions to general authorisations and applying administrative charges, situations in which electronic communications networks or services are provided by natural persons on a not-for-profit basis. In the case of electronic communications networks and services not provided to the public it is appropriate to impose fewer and lighter conditions, if any, than are justified for electronic communications networks and services provided to the public.

(51) Specific obligations imposed on undertakings providing electronic communications networks and electronic communications services in accordance with Union law by virtue of their designation as having significant market power as defined in this Directive should be imposed separately from the general rights and obligations under the general authorisation.

(52) It is possible that undertakings providing electronic communications networks and services need confirmation of their rights under the general authorisation with respect to interconnection and rights of way, in particular to facilitate negotiations with other, regional or local, levels of government or with service providers in other Member States. To that end competent authorities should provide declarations to undertakings either upon request or alternatively as an automatic response to a notification under the general authorisation. Such declarations should not by themselves constitute entitlements to rights, nor should any rights under the general authorisation, rights of use or the exercise of such rights depend upon a declaration.

(53) It should be possible to impose administrative charges on undertakings providing electronic communications services in order to finance the activities of the national regulatory or other competent authority in managing the general authorisation system and the granting of rights of use. Such charges should be limited to cover the actual administrative costs for those activities. To that end, transparency should be ensured in the income and expenditure of national regulatory and other competent authorities by means of annual reporting about the total sum of charges collected and the administrative costs incurred, in order to allow undertakings to verify that they are in balance.

(54) Systems for administrative charges should not distort competition or create barriers to market entry. A general authorisation system renders it impossible to attribute administrative costs and hence charges to individual undertakings, except for the granting of rights of use for numbering resources, radio spectrum and for rights to install facilities. Any applicable administrative charges should be in line with the principles of a general authorisation system. An example of a fair, simple and transparent alternative for those charge attribution criteria could be a turnover related distribution key. Where administrative charges are very low, flat rate charges, or charges combining a flat rate basis with a turnover related element could also be appropriate. To the extent that the general authorisation system extends to undertakings with very small market shares, such as community-based network providers, or to service providers the business model of which generates very limited revenues even in the case of significant market penetration in terms of volumes, Member States should assess the possibility to establish an appropriate de minimis threshold for the imposition of administrative charges.

(55) Member States might need to amend rights, conditions, procedures, charges and fees relating to general authorisations and rights of use where this is objectively justified. Such proposed amendments should be duly notified to all interested parties in good time, giving them adequate opportunity to express their views. Unnecessary procedures should be avoided in the case of minor amendments to existing rights to install facilities or rights of use for radio spectrum or for numbering resources when such amendments do not have an impact on third parties' interests. Minor amendments to rights and obligations are amendments which are mainly administrative, do not change the substantial nature of the general authorisations and the individual rights of use and thus cannot generate any competitive advantage over other undertakings.

(56) Considering the importance of ensuring legal certainty and in order to promote regulatory predictability to provide a safe environment for investments, in particular for new wireless broadband communications, any restriction or withdrawal of any existing rights of use for radio spectrum or for numbering resources or right to install facilities should be subject to predictable and transparent justifications and procedures. Hence, stricter requirements or a notification mechanism could be imposed in particular where rights of use have been assigned pursuant to competitive or comparative procedures and in the case of harmonised radio spectrum bands to be used for wireless broadband electronic communications services ('wireless broadband services'). Justifications referring to effective and efficient use of radio spectrum and technological evolution could rely on technical implementing measures adopted under Decision No 676/2002/EC of the European Parliament and of the Council[(24)]. Furthermore, except where proposed amendments are minor, where general authorisations and individual rights of use for radio spectrum need to be restricted, withdrawn or amended without the consent of the holder of the right, this can take place after consulting interested parties. As restrictions or withdrawals of general authorisations or rights may have significant consequences for their holders, the competent authorities should take particular care and assess in advance the potential harm that such measures may cause before adopting such measures.

(57) National regulatory authorities, other competent authorities and BEREC need to gather information from market players in order to carry out their tasks effectively, including assessing the compliance of general terms and conditions with this Directive without suspending the applicability of those terms and conditions during the assessment. It may, by way of exception, also be necessary to gather information from other undertakings active in sectors that are closely related to the electronic communications services sector, such as content providers, that hold information which could be necessary for them to exercise their tasks under Union law. It might also be necessary to gather such information on behalf of the Commission, to allow it to fulfil its respective obligations under Union law. Requests for information should be proportionate and not impose an undue burden on undertakings. Information gathered by national regulatory and other competent authorities should be publicly available, except in so far as it is confidential in accordance with national rules on public access to information and subject to Union and national rules on commercial confidentiality.

(58) In order to ensure that national regulatory authorities carry out their regulatory tasks in an effective manner, the data which they gather should include accounting data on the retail markets that are associated with wholesale markets where an undertaking is designated as having significant market power and as such are regulated by the national regulatory authority. The data should also include data which enable the national regulatory authority to assess compliance with conditions attached to rights of use, the possible impact of planned upgrades or changes to network topology on the development of competition or on wholesale products made available to other parties. Information regarding compliance with coverage obligations attached to rights of use for radio spectrum is key to ensure completeness of the geographical surveys of network deployments. In that respect, the competent authority should be able to require that information is provided at disaggregated local level with a granularity adequate to conduct a geographical survey of networks.

(59) To alleviate the burden of reporting and information obligations for network and service providers and the competent authority concerned, such obligations should be proportionate, objectively justified and limited to what is strictly necessary. In particular, duplication of requests for information by the competent authority and by BEREC, and the systematic and regular proof of compliance with all conditions under a general authorisation or a right of use, should be avoided. Undertakings should be aware of the intended use of the information sought. Provision of information should not be a condition for market access. For statistical purposes, a notification may be required from providers of electronic communications networks or services when they cease activities.

(60) Member States' obligations to provide information for the defence of Union interests under international agreements as well as reporting obligations under law that is not specific to the electronic communications sector such as competition law should not be affected.

(61) It should be possible to exchange information that is considered to be confidential by a competent authority, in accordance with Union and national rules on commercial

confidentiality and on the protection of personal data, with the Commission, BEREC and any other authorities where such exchange is necessary for the application of national law transposing this Directive. The information exchanged should be limited to that which is relevant and proportionate to the purpose of such an exchange.

(62) Electronic communications broadband networks are becoming increasingly diverse in terms of technology, topology, medium used and ownership. Therefore, regulatory intervention must rely on detailed information regarding network roll-out in order to be effective and to target the areas where it is needed. That information is essential for the purpose of promoting investment, increasing connectivity across the Union and providing information to all relevant authorities and citizens. It should include surveys regarding both deployment of very high capacity networks, as well as significant upgrades or extensions of existing copper or other networks which might not match the performance characteristics of very high capacity networks in all respects, such as roll-out of fibre to the cabinet coupled with active technologies like vectoring. The relevant forecasts should concern periods of up to three years. The level of detail and territorial granularity of the information that competent authorities should gather should be guided by the specific regulatory objective, and should be adequate for the regulatory purposes that it serves. Therefore, the size of the territorial unit will also vary between Member States, depending on the regulatory needs in the specific national circumstances, and on the availability of local data. Level 3 in the Nomenclature of Territorial Units for Statistics (NUTS) is unlikely to be a sufficiently small territorial unit in most circumstances. National regulatory and other competent authorities should be guided by BEREC guidelines on best practice to approach such a task, and such guidelines will be able to rely on the existing experience of national regulatory and/or other competent authorities in conducting geographical surveys of networks roll-out. Without prejudice to commercial confidentiality requirements, competent authorities should, where the information is not already available on the market, make data directly accessible in an open format in accordance with Directive 2003/98/EC of the European Parliament and of the Council[25] and without restrictions on reuse the information gathered in such surveys and should make available tools to end-users as regards quality of service to contribute towards the improvement of their awareness of the available connectivity services. In gathering any of that information, all authorities concerned should respect the principle of confidentiality, and should avoid causing a competitive disadvantage to any undertaking.

(63) Bridging the digital divide in the Union is essential to enable all citizens of the Union to have access to the internet and digital services. To that end, in the case of specific and well-defined areas, the relevant authorities should have the possibility to invite undertakings and public authorities to declare their intention to deploy very high capacity networks in these areas, allowing them sufficient time to provide a thoroughly considered response. The information included in the forecasts should reflect the economic prospects of the electronic communications networks sector and investment intentions of undertakings at the time when the data are gathered, in order to allow the identification of available connectivity in different areas. Where an undertaking or public authority declares an intention to deploy in an area, the national regulatory

or other competent authority should be able to require other undertakings and public authorities to declare whether or not they intend to deploy very high capacity networks, or significantly upgrade or extend their network to a performance of at least 100 Mbps download speeds in this area. That procedure will create transparency for undertakings and public authorities that have expressed their interest in deploying in this area, so that, when designing their business plans, they can assess the likely competition that they will face from other networks. The positive effect of such transparency relies on market participants responding truthfully and in good faith.

(64) While market participants can change their deployment plans for unforeseen, objective and justifiable reasons, competent authorities should intervene, including if public funding is affected, and, where appropriate, impose penalties if they have been provided, knowingly or due to gross negligence, by an undertaking or public authority with misleading erroneous or incomplete information. For the purpose of the relevant provisions on penalties, gross negligence should refer to a situation where an undertaking or a public authority provides misleading, erroneous or incomplete information due to its behaviour or internal organisation which falls significantly below due diligence regarding the information provided. Gross negligence should not require that the undertaking or public authority knows that the information provided is misleading, erroneous or incomplete, but, rather, that it would have known, had it acted or been organised with due diligence. It is important that the penalties are sufficiently dissuasive in light of the negative impact on competition and on publicly funded projects. The provisions on penalties should be without prejudice to any rights to claim compensation for damages in accordance with national law.

(65) In the interests of predictable investment conditions, competent authorities should be able to share information with undertakings and public authorities expressing interest in deploying very high capacity networks on whether other types of network upgrades, including those below 100 Mbps download speed, are present or foreseen in the area in question.

(66) It is important that national regulatory and other competent authorities consult all interested parties on proposed decisions, give them sufficient time to the complexity of the matter to provide their comments, and take account of their comments before adopting a final decision. In order to ensure that decisions at national level do not have an adverse effect on the functioning of the internal market or other TFEU objectives, national regulatory authorities should also notify certain draft decisions to the Commission and other national regulatory authorities to give them the opportunity to comment. It is appropriate for competent authorities to consult interested parties in the cases defined in this Directive on all draft measures which have an effect on trade between Member States.

(67) In the context of a competitive environment, the views of interested parties, including users and consumers, should be taken into account. In order to appropriately address the interests of citizens, Member States should put in place an appropriate consultation mechanism. Such a mechanism could take the form of a body which would, independently of the national regulatory authority and service providers, carry out

research into consumer-related issues, such as consumer behaviour and mechanisms for changing suppliers, and which would operate in a transparent manner and contribute to the existing mechanisms for stakeholder consultation. Furthermore, a mechanism could be established for the purpose of enabling appropriate cooperation on issues relating to the promotion of lawful content. Any cooperation procedures agreed pursuant to such a mechanism should, however, not allow for the systematic surveillance of internet use.

(68) Out-of-court dispute resolution procedures may constitute a fast and cost-efficient way for end-users to enforce their rights, in particular for consumers and microenterprises and small enterprises as defined in the Annex to Commission Recommendation 2003/361/EC[(26)]. Member States should enable the national regulatory authority or another competent authority responsible for, or at least one independent body with proven expertise in dealing with, end-user rights to act as an alternative dispute resolution entity. With respect to such dispute resolutions, those authorities should not be subject to any instructions. As many Member States have established dispute resolution procedures also for end-users other than consumers, to whom Directive 2013/11/EU of the European Parliament and of the Council[(27)] does not apply, it is reasonable to maintain the sector-specific dispute resolution procedure for both consumers and, where Member States extend it, also for other end-users, in particular microenterprises and small enterprises. In relation to out-of-court dispute resolution, Member States should be able to maintain or introduce rules that go beyond those laid down by Directive 2013/11/EU in order to ensure a higher level of consumer protection.

(69) In the event of a dispute between undertakings in the same Member State in an area covered by this Directive, for example relating to obligations for access and interconnection or to the means of transferring end-user lists, an aggrieved party that has negotiated in good faith but failed to reach agreement should be able to call on the national regulatory authority to resolve the dispute. National regulatory authorities should be able to impose a solution on the parties. The intervention of a national regulatory authority in the resolution of a dispute between providers of electronic communications networks or services or associated facilities in a Member State should seek to ensure compliance with the obligations arising under this Directive.

(70) In addition to the rights of recourse granted under Union or national law, there is a need for a simple procedure to be initiated at the request of either party in a dispute, to resolve cross-border disputes between undertakings providing, or authorised to provide, electronic communications networks or services in different Member States.

(71) One important task assigned to BEREC is to adopt, where appropriate, opinions in relation to cross-border disputes. National regulatory authorities should therefore fully reflect any opinion submitted by BEREC in their measures imposing any obligation on an undertaking or otherwise resolving the dispute in such cases.

(72) Lack of coordination between Member States when organising the use of radio spectrum in their territory can, if not solved through bilateral Member States negotiations, create large-scale interference issues severely impacting on the development of the Digital Single Market. Member States should take all necessary measures to avoid cross-

border and harmful interference between them. The Radio Spectrum Policy Group (RSPG) established by Commission Decision 2002/622/EC[(28)] should be tasked with supporting the necessary cross-border coordination and be the designated forum for resolving disputes between Member States on cross border issues. Building on the RSPG's proposed solution, an implementing measure is required in some circumstances to resolve cross-border interference definitively or to enforce under Union law a coordinated solution agreed by two or several Member States in bilateral negotiations. Lack of coordination between Member States and countries neighbouring the Union can also create large-scale interference issues. Member States should take appropriate measures to avoid cross-border and harmful interference with countries neighbouring the Union, and cooperate with each other to that end. Upon the request of Member States affected by cross-border interference from third countries, the Union should provide its full support for those Member States.

(73) The RSPG is a Commission high-level advisory group which was created by Decision 2002/622/EC to contribute to the development of the internal market and to support the development of a Union-level radio spectrum policy, taking into account economic, political, cultural, strategic, health and social considerations, as well as technical parameters. It should be composed of the heads of the bodies that have overall political responsibility for strategic radio spectrum policy. It should assist and advise the Commission with respect to radio spectrum policy. This should further increase the visibility of radio spectrum policy in the various Union policy areas and help to ensure cross-sectorial consistency at Union and national and level. It should also provide advice to the European Parliament and to the Council upon their request. Moreover, the RSPG should also be the forum for the coordination of implementation by Member States of their obligations related to radio spectrum under this Directive and should play a central role in fields essential for the internal market such as cross-border coordination or standardisation. Technical or expert working groups could also be created to assist plenary meetings, at which strategic policy is framed through senior-level representatives of the Member States and the Commission. The Commission has indicated its intention to amend Decision 2002/622/EC within six months of the entry into force of this Directive, in order to reflect the new tasks conferred on the RSPG by this Directive.

(74) Competent authorities should monitor and secure compliance with the terms and conditions of the general authorisation and rights of use, and in particular to ensure effective and efficient use of radio spectrum and compliance with coverage and quality of service obligations, through administrative penalties including financial penalties and injunctions and withdrawals of rights of use in the event of breaches of those terms and conditions. Undertakings should provide the most accurate and complete information possible to competent authorities to allow them to fulfil their surveillance tasks.

(75) The conditions attached to general authorisations and individual rights of use should be limited to those strictly necessary to ensure compliance with requirements and obligations under national law and Union law.

(76) Any party subject to a decision of a competent authority should have the right to appeal to a body that is independent of the parties involved and of any external intervention or political pressure which could jeopardise its independent assessment of matters coming before it. That body can be a court. Furthermore, any undertaking which considers that its applications for the granting of rights to install facilities have not been dealt with in accordance with the principles set out in this Directive should be entitled to appeal against such decisions. That appeal procedure should be without prejudice to the division of competences within national judicial systems and to the rights of legal entities or natural persons under national law. In any case, Member States should grant effective judicial review against such decisions.

(77) In order to ensure legal certainty for market players, appeal bodies should carry out their functions effectively. In particular, appeal proceedings should not be unduly lengthy. Interim measures suspending the effect of the decision of a competent authority should be granted only in urgent cases in order to prevent serious and irreparable damage to the party applying for those measures and if the balance of interests so requires.

(78) There has been a wide divergence in the manner in which appeal bodies have applied interim measures to suspend the decisions of the national regulatory or other competent authorities. In order to achieve greater consistency of approach common standards should be applied in line with the case law of the Court of Justice. Appeal bodies should also be entitled to request available information published by BEREC. Given the importance of appeals for the overall operation of the regulatory framework, a mechanism should be set up, in all the Member States, for collecting information on appeals and decisions to suspend decisions taken by the competent authorities and for the reporting of that information to the Commission and to BEREC. That mechanism should ensure that the Commission or BEREC can retrieve from Member States the text of the decisions and judgments with a view to developing a database.

(79) Transparency in the application of the Union mechanism for consolidating the internal market for electronic communications should be increased in the interest of citizens and stakeholders and to enable parties concerned to make their views known, including by way of requiring national regulatory authorities to publish any draft measure at the same time as it is communicated to the Commission, to BEREC, and to the national regulatory authorities in other Member States. Any such draft measure should be reasoned and should contain a detailed analysis.

(80) The Commission should be able, after taking utmost account of the opinion of BEREC, to require a national regulatory authority to withdraw a draft measure where it concerns the definition of relevant markets or the designation of undertakings as having significant market power, and where such decisions would create a barrier to the internal market or would be incompatible with Union law and in particular the policy objectives that national regulatory authorities should follow. This procedure is without prejudice to the notification procedure provided for in Directive (EU) 2015/1535 and the Commission's prerogatives under TFEU in respect of infringements of Union law.

(81) The national consultation of interested parties should be conducted prior to the consultation at Union level for the purposes of consolidating the internal market for

electronic communications and within the procedure for the consistent application of remedies, in order to allow the views of interested parties to be reflected in the consultation at Union level. This would also avoid the need for a second consultation at Union level in the event of changes to a planned measure as a result of the national consultation.

(82) It is important that the regulatory framework is implemented in a timely manner. When the Commission has taken a decision requiring a national regulatory authority to withdraw a planned measure, national regulatory authorities should withdraw its draft measure or submit a revised measure to the Commission. A deadline should be laid down for the notification of the revised measure to the Commission in order to inform market players of the duration of the market review and in order to increase legal certainty.

(83) The Union mechanism allowing the Commission to require national regulatory authorities to withdraw planned measures concerning market definition and the designation of undertakings as having significant market power has contributed significantly to a consistent approach in identifying the circumstances in which ex ante regulation may be applied and those in which the undertakings are subject to such regulation. The experience of the procedures under Articles 7 and 7a of Directive 2002/21/EC has shown that inconsistencies in the national regulatory authorities' application of remedies under similar market conditions undermine the internal market in electronic communications. Therefore, the Commission and BEREC should participate in ensuring, within their respective responsibilities, a higher level of consistency in the application of remedies concerning draft measures proposed by national regulatory authorities. In addition, for draft measures relating to the extension of obligations beyond the first concentration or distribution point, where needed to address high and non-transitory economic or physical barriers to replication, on undertakings irrespective of a designation as having significant market power, or to the regulatory treatment of new very high-capacity network elements where BEREC shares the Commission's concerns, the Commission should be able to require a national regulatory authority to withdraw a draft measure. In order to benefit from the expertise of national regulatory authorities on the market analysis, the Commission should consult BEREC prior to adoption of its decisions or recommendations.

(84) Having regard to the short time-limits in the consultation mechanism at Union level, powers should be conferred on the Commission to adopt recommendations or guidelines to simplify the procedures for exchanging information between the Commission and national regulatory authorities, for example in cases concerning stable markets, or involving only minor changes to previously notified measures. Powers should also be conferred on the Commission in order to allow for the introduction of a notification exemption in order to streamline procedures in certain cases.

(85) National regulatory authorities should be required to cooperate with each other, with BEREC and with the Commission, in a transparent manner, to ensure the consistent application, in all Member States, of this Directive.

(86) The discretion of national regulatory authorities needs to be reconciled with the development of consistent regulatory practices and the consistent application of the regulatory framework in order to contribute effectively to the development and completion of the internal market. National regulatory authorities should therefore support the internal market activities of the Commission and of BEREC.

(87) Measures that could affect trade between Member States are measures that could have an influence, direct or indirect, actual or potential, on the pattern of trade between Member States in a manner which might create a barrier to the internal market. They comprise measures that have a significant impact on undertakings or users in other Member States, which include: measures which affect prices for users in other Member States; measures which affect the ability of an undertaking established in another Member State to provide an electronic communications service, and in particular measures which affect the ability to offer services on a transnational basis; and measures which affect market structure or access, leading to repercussions for undertakings in other Member States.

(88) A more convergent use and definition of elements of selection procedures and the conditions attached to the rights of use for radio spectrum which have a significant impact on market conditions and the competitive situation, including conditions for entry and expansion, would be enhanced by a coordination mechanism whereby the RSPG, at the request of the national regulatory or other competent authority or, exceptionally, on its own initiative, convenes a Peer Review Forum to examine draft measures in advance of the granting of rights of use by a given Member State with a view to exchanging best practices. The Peer Review Forum is an instrument of peer learning. It should contribute to a better exchange of best practices between Member States and increase the transparency of the competitive or comparative selection procedures. The Peer Review Process should not be a formal condition of national authorisation procedures. The exchange of views should be based on information provided by the national regulatory or other competent authority that requests the Peer Review Forum and should be a subset of a wider national measure, which may more broadly consist of the granting, trade and lease, duration, renewal or the amendment of rights of use. Therefore, the national regulatory or other competent authority should also be able to provide information on other draft national measures or aspects thereof related to the relevant selection procedure for limiting rights of use for radio spectrum which are not covered by the peer review mechanism. To reduce administrative burden, the national regulatory or other competent authority should be able to submit such information by way of a common reporting format, where available, for transmission to the RSPG members.

(89) Where the harmonised assignment of radio spectrum to particular undertakings has been agreed at Union level, Member States should strictly implement such agreements in the granting of rights of use for radio spectrum from the National Frequency Allocation Plan.

(90) Member States should be able to consider joint authorisation processes as an option when issuing rights of use where the expected usage covers cross-border situations.

(91) Any Commission decision to ensure the harmonised application of this Directive should be limited to regulatory principles, approaches and methodologies. For the avoidance of doubt, it should not prescribe any detail normally required to reflect national circumstances, and it should not prohibit alternative approaches which can reasonably be expected to have equivalent effect. Such a decision should be proportionate and should not have an effect on decisions taken by national regulatory or other competent authorities that do not create a barrier to the internal market.

(92) The Union and the Member States have entered into commitments in relation to standards and the regulatory framework of telecommunications networks and services in the World Trade Organization.

(93) Standardisation should remain primarily a market-driven process. However there may still be situations where it is appropriate to require compliance with specified standards at Union level in order to improve interoperability, freedom of choice for users and encourage interconnectivity in the internal market. At national level, Member States are subject to Directive (EU) 2015/1535. Standardisation procedures under this Directive are without prejudice to Directives 2014/30/EU[(29)] and 2014/35/EU[(30)] of the European Parliament and of the Council, and Directive 2014/53/EU.

(94) Providers of public electronic communications networks or publicly available electronic communications services, or of both, should be required to take measures to safeguard the security of their networks and services, respectively, and to prevent or minimise the impact of security incidents. Having regard to the state of the art, those measures should ensure a level of security of networks and services appropriate to the risks posed. Security measures should take into account, as a minimum, all the relevant aspects of the following elements: as regards security of networks and facilities: physical and environmental security, security of supply, access control to networks and integrity of networks; as regards handling of security incidents: handling procedures, security incident detection capability, security incident reporting and communication; as regards business continuity management: service continuity strategy and contingency plans, disaster recovery capabilities; as regards monitoring, auditing and testing: monitoring and logging policies, exercise contingency plans, network and service testing, security assessments and compliance monitoring; and compliance with international standards.

(95) Given the growing importance of number-independent interpersonal communications services, it is necessary to ensure that they are also subject to appropriate security requirements in accordance with their specific nature and economic importance. Providers of such services should thus also ensure a level of security appropriate to the risk posed. Given that providers of number-independent interpersonal communications services normally do not exercise actual control over the transmission of signals over networks, the degree of risk for such services can be considered in some respects to be lower than for traditional electronic communications services. Therefore, where justified on the basis of the actual assessment of the security risks involved, the measures taken by providers of number-independent interpersonal communications services should be lighter. The same approach should apply mutatis mutandis to

interpersonal communications services which make use of numbers and which do not exercise actual control over signal transmission.

(96) Providers of public electronic communications networks or of publicly available electronic communications services should inform users of particular and significant security threats and of measures they can take to protect the security of their communications, for instance by using specific types of software or encryption technologies. The requirement to inform users of such threats should not discharge a service provider from the obligation to take, at its own expense, appropriate and immediate measures to remedy any security threats and restore the normal security level of the service. The provision of such information about security threats to the user should be free of charge.

(97) In order to safeguard security of networks and services, and without prejudice to the Member States' powers to ensure the protection of their essential security interests and public security, and to permit the investigation, detection and prosecution of criminal offences, the use of encryption for example, end-to-end where appropriate, should be promoted and, where necessary, encryption should be mandatory in accordance with the principles of security and privacy by default and by design.

(98) Competent authorities should ensure that the integrity and availability of public electronic communications networks are maintained. The European Union Agency for Network and Information Security ('ENISA') should contribute to an enhanced level of security of electronic communications by, inter alia, providing expertise and advice, and promoting the exchange of best practices. The competent authorities should have the necessary means to perform their duties, including powers to request the information necessary to assess the level of security of networks or services. They should also have the power to request comprehensive and reliable data about actual security incidents that have had a significant impact on the operation of networks or services. They should, where necessary, be assisted by Computer Security Incident Response Teams ('CSIRTs') established by Directive (EU) 2016/1148 of the European Parliament and of the Council[(31)]. In particular, CSIRTs may be required to provide competent authorities with information about risks and security incidents affecting public electronic communications networks and publicly available electronic communications services, and recommend ways to address them.

(99) Where the provision of electronic communications relies on public resources the use of which is subject to specific authorisation, Member States should be able to grant the authority competent for issuance thereof the right to impose fees to ensure optimal use of those resources, in accordance with the procedures envisaged in this Directive. In line with the case-law of the Court of Justice, Member States cannot levy any charges or fees in relation to the provision of networks and electronic communications services other than those provided for by this Directive. In that regard, Member States should have a consistent approach in establishing those charges or fees in order not to provide an undue financial burden linked to the general authorisation procedure or rights of use for providers of electronic communications networks and services.

(100) To ensure optimal use of resources, fees should reflect the economic and technical situation of the market concerned as well as any other significant factor determining their value. At the same time, fees should be set in a manner that ensures efficient assignment and use of radio spectrum. This Directive is without prejudice to the purpose for which fees for rights of use and rights to install facilities are employed. It should be possible, for example, to use such fees to finance activities of national regulatory and other competent authorities that cannot be covered by administrative charges. Where, in the case of competitive or comparative selection procedures, fees for rights of use for radio spectrum consist entirely or partly of a one-off amount, payment arrangements should ensure that such fees do not in practice lead to selection on the basis of criteria unrelated to the objective of ensuring optimal use of radio spectrum. The Commission should be able to publish, on a regular basis, benchmark studies and, as appropriate, other guidance with regard to best practices for the assignment of radio spectrum, the assignment of numbering resources or the granting of rights of way.

(101) Fees imposed on undertakings for rights of use for radio spectrum can influence decisions about whether to seek such rights and put into use radio spectrum resources. With a view to ensuring optimal use of radio spectrum, Member States should therefore set reserve prices in a way that leads to the efficient assignment of those rights, irrespective of the type of selection procedure used. Member States could also take into account possible costs associated with the fulfilment of authorisation conditions imposed to further policy objectives. In doing so, regard should also be had to the competitive situation of the market concerned including the possible alternative uses of the resources.

(102) Optimal use of radio spectrum resources depends on the availability of appropriate networks and associated facilities. In that regard, Member States should aim to ensure that, where national regulatory or other competent authorities apply fees for rights of use for radio spectrum and for rights to install facilities, they take into consideration the need to facilitate continuous infrastructure development with a view to achieving the most efficient use of the resources. Member States should seek to ensure the application, to the best extent possible, of arrangements for the payment of the fees for rights of use for radio spectrum linked with the actual availability of the resource in a manner that supports the investments necessary to promote such infrastructure development and the provision of related services. The payment arrangements should be specified in an objective, transparent, proportionate and non-discriminatory manner before opening procedures for the granting of rights of use for radio spectrum.

(103) It should be ensured that procedures exist for the granting of rights to install facilities that are timely, non-discriminatory and transparent, in order to guarantee the conditions for fair and effective competition. This Directive is without prejudice to national provisions governing the expropriation or use of property, the normal exercise of property rights, the normal use of the public domain, or to the principle of neutrality with regard to the rules in Member States governing the system of property ownership.

(104) Permits issued to providers of electronic communications networks and services allowing them to gain access to public or private property are essential factors for

the establishment of electronic communications networks or new network elements. Unnecessary complexity and delay in the procedures for granting rights of way may therefore represent important obstacles to the development of competition. Consequently, the acquisition of rights of way by authorised undertakings should be simplified. Competent authorities should coordinate the acquisition of rights of way, making relevant information accessible on their websites.

(105) It is necessary to strengthen the powers of the Member States as regards holders of rights of way to ensure the entry or roll-out of a new network in a fair, efficient and environmentally responsible way and independently of any obligation on an undertaking designated as having significant market power to grant access to its electronic communications network. Improving facility sharing can lower the environmental cost of deploying electronic communications infrastructure and serve public health, public security and meet town and country planning objectives. Competent authorities should be empowered to require that the undertakings which have benefitted from rights to install facilities on, over or under public or private property share such facilities or property, including physical co-location, after an appropriate period of public consultation, during which all interested parties should be given the opportunity to state their views, in the specific areas where such general interest reasons impose such sharing. That can be the case for instance where the subsoil is highly congested or where a natural barrier needs to be crossed. Competent authorities should in particular be able to impose the sharing of network elements and associated facilities, such as ducts, conduits, masts, manholes, cabinets, antennae, towers and other supporting constructions, buildings or entries into buildings, and a better coordination of civil works on environmental or other public policy grounds. On the contrary, it should be for national regulatory authorities to define rules for apportioning the costs of the facility or property sharing, to ensure that there is an appropriate reward of risk for the undertakings concerned. In light of the obligations imposed by Directive 2014/61/EU, the competent authorities, in particular, local authorities, should also establish appropriate coordination procedures, in cooperation with national regulatory authorities, with respect to public works and other appropriate public facilities or property which should be able to include procedures that ensure that interested parties have information concerning appropriate public facilities or property and ongoing and planned public works, that they are notified in a timely manner of such works, and that sharing is facilitated to the maximum extent possible.

(106) Where mobile operators are required to share towers or masts for environmental reasons, such mandated sharing could lead to a reduction in the maximum transmitted power levels allowed for each operator for reasons of public health, and this in turn could require operators to install more transmission sites to ensure national coverage. Competent authorities should seek to reconcile the environmental and public health considerations in question, taking due account of the precautionary approach set out in Council Recommendation 1999/519/EC[(32)].

(107) Radio spectrum is a scarce public resource with an important public and market value. It is an essential input for radio-based electronic communications networks and services and, insofar as it relates to such networks and services, should therefore be

efficiently allocated and assigned by national regulatory or other competent authorities in accordance with harmonised objectives and principles governing their action as well as to objective, transparent and non-discriminatory criteria, taking into account the democratic, social, linguistic and cultural interests related to the use of radio spectrum. Decision No 676/2002/EC establishes a framework for harmonisation of radio spectrum.

(108) Radio spectrum policy activities in the Union should be without prejudice to measures taken, at Union or national level, in accordance with Union law, to pursue general interest objectives, in particular with regard to public governmental and defence networks, content regulation and audiovisual and media policies, and the right of Member States to organise and use their radio spectrum for public order, public security and defence.

(109) Ensuring widespread connectivity in each Member State is essential for economic and social development, participation in public life and social and territorial cohesion. As connectivity and the use of electronic communications become an integral element to European society and welfare, Member States should strive to ensure Union-wide wireless broadband coverage. Such coverage should be achieved by relying on the imposition by Member States of appropriate coverage requirements, which should be adapted to each area served and limited to proportionate burdens in order not to hinder deployment by service providers. Given the major role systems such as radio local area networks (RLANs) play in providing high-speed wireless broadband indoors, measures should aim to ensure the release of sufficient radio spectrum in bands which are particularly valuable assets for the cost-efficient deployment of wireless networks with universal coverage, in particular indoors. Moreover, consistent and coordinated measures for high-quality terrestrial wireless coverage across the Union, building on best national practices for operators' licence obligations, should aim to meet the radio spectrum policy programme objective that all citizens of the Union should have access both indoors and outdoors, to the fastest broadband speeds of not less than 30 Mbps by 2020, and should aim to achieve an ambitious vision for a gigabit society in the Union. Such measures will promote innovative digital services and ensure long-term socioeconomic benefits. Seamless coverage of the territory as well as connectivity across Member States should be maximised and reliable, with a view to promoting in-border and cross-border services and applications such as connected cars and e-health.

(110) The need to ensure that citizens are not exposed to electromagnetic fields at a level harmful to public health is imperative. Member States should pursue consistency across the Union to address this issue, having particular regard to the precautionary approach taken in Recommendation 1999/519/EC, in order to work towards ensuring more consistent deployment conditions. Member States should apply the procedure set out in Directive (EU) 2015/1535, where relevant, with a view also to providing transparency to stakeholders and to allow other Member States and the Commission to react.

(111) Radio spectrum harmonisation and coordination, and equipment regulation supported by standardisation, are complementary and need to be coordinated closely to meet their joint objectives effectively, with the support of the RSPG. Coordination

between the content and timing of mandates to CEPT under Decision No 676/2002/EC and standardisation requests to standardisation bodies, such as the European Telecommunications Standards Institute, including with regard to radio receivers parameters, should facilitate the introduction of future systems, support radio spectrum sharing opportunities and ensure efficient radio spectrum management.

(112) The demand for harmonised radio spectrum is not uniform in all parts of the Union. Where there is lack of demand for all or part of a harmonised band at regional or national level, Member States could, by way of exception, allow an alternative use of the band, for example to cover lack of market supply for certain uses, for as long as such lack of demand persists and provided that the alternative use does not prejudice the harmonised use of the band by other Member States and that it ceases when demand for the harmonised use materialises.

(113) Flexibility in radio spectrum management and access to radio spectrum has been established through technology and service-neutral authorisations to allow radio spectrum users to choose the best technologies and services to apply in radio spectrum bands declared available for electronic communications services in the relevant National Frequency Allocation Plans in accordance with Union law ('the principle of technology neutrality and the principle of service neutrality'). The administrative determination of technologies and services should apply only when general interest objectives are at stake and should be clearly justified and subject to regular review.

(114) Restrictions to the principle of technology neutrality should be appropriate and justified by the need to avoid harmful interference, for example by imposing emission masks and power levels, to ensure the protection of public health by limiting public exposure to electromagnetic fields, to ensure the proper functioning of services through an adequate level of technical quality of service, while not necessarily precluding the possibility of using more than one service in the same radio spectrum band, to ensure proper sharing of radio spectrum, in particular where its use is subject only to general authorisations, to safeguard efficient use of radio spectrum, or to fulfil a general interest objective in accordance with Union law.

(115) Radio spectrum users should also be able to choose freely the services they wish to offer over the radio spectrum. On the other hand, measures should be allowed which require the provision of a specific service to meet clearly defined general interest objectives such as safety of life, the need to promote social, regional and territorial cohesion, or the avoidance of the inefficient use of radio spectrum to be permitted where necessary and proportionate. Those objectives should include the promotion of cultural and linguistic diversity and media pluralism, as defined by Member States in accordance with Union law. Except where necessary to protect safety of life or, by way of exception, to fulfil other general interest objectives as defined by Member States in accordance with Union law, exceptions should not result in certain services having exclusive use, but should rather grant them priority so that, insofar as possible, other services or technologies could coexist in the same radio spectrum band. It lies within the competence of the Member States to define the scope and nature of any exception regarding the promotion of cultural and linguistic diversity and media pluralism.

(116) As the allocation of radio spectrum to specific technologies or services is an exception to the principles of technology and service neutrality and reduces the freedom to choose the service provided or technology used, any proposal for such allocation should be transparent and subject to public consultation.

(117) Where Member States decide, by way of exception, to limit the freedom to provide electronic communications networks and services based on grounds of public policy, public security or public health, Member States should explain the reasons for such a limitation.

(118) Radio spectrum should be managed in a manner that ensures the avoidance of harmful interference. The basic concept of harmful interference should therefore be properly defined to ensure that regulatory intervention is limited to the extent necessary to prevent such interference, having regard also to the need to take into consideration advanced methods for protection against harmful interference, with the aim of applying those technologies and radio spectrum management methods in order to avoid, to the extent possible, the application of the non-interference and non-protection principle. Transport has a strong cross-border element and its digitalisation brings challenges. Vehicles (such as metro, bus, cars, trucks, trains,) are becoming increasingly autonomous and connected. In the internal market, vehicles travel beyond national borders more easily. Reliable communications, and avoiding harmful interference, are critical for the safe and good operation of vehicles and their on-board communications systems.

(119) With growing radio spectrum demand and new varying applications and technologies which necessitate more flexible access and use of radio spectrum, Member States should promote the shared use of radio spectrum by determining the most appropriate authorisation regimes for each scenario and by establishing appropriate and transparent rules and conditions therefor. Shared use of radio spectrum increasingly ensures its effective and efficient use by allowing several independent users or devices to access the same radio spectrum band under various types of legal regimes in order to make additional radio spectrum resources available, raise usage efficiency and facilitate radio spectrum access for new users. Shared use can be based on general authorisations or licence-exempt use allowing, under specific sharing conditions, several users to access and use the same radio spectrum in different geographic areas or at different moments in time. It can also be based on individual rights of use under arrangements such as licensed shared access where all users (with an existing user and new users) agree on the terms and conditions for shared access, under the supervision of the competent authorities, in such a way as to ensure a minimum guaranteed radio transmission quality. When allowing shared use under different authorisation regimes, Member States should not set widely diverging durations for such use under different authorisation regimes.

(120) General authorisations for the use of radio spectrum may facilitate the most effective use of radio spectrum and foster innovation in some cases and are pro-competitive, whereas individual rights of use for radio spectrum in other cases may be the most appropriate authorisation regime in the presence of certain specific circumstances. Individual rights of use should be considered, for example, when favourable propagation characteristics

of the radio spectrum or the envisaged power level of the transmission imply that general authorisations cannot address the interference concerns in light of the required quality of service. Technical measures such as solutions to improve receiver resilience might enable the use of general authorisations or radio spectrum sharing, and possibly avoid systematic recourse to the non-interference and non-protection principle.

(121) In order to ensure predictability and preserve legal certainty and investment stability, Member States should establish, in advance, appropriate criteria to determine compliance with the objective of efficient use of radio spectrum by the holders of the rights when implementing the conditions attached to individual rights of use and general authorisations. Interested parties should be involved in the definition of such conditions and informed, in a transparent manner, about how the fulfilment of their obligations will be assessed.

(122) In order to avoid the creation of barriers to market entry, namely through anti-competitive hoarding, enforcement of conditions attached to radio spectrum rights by Member States should be effective and all competent authorities should participate where necessary. Enforcement conditions should include the application of a 'use it or lose it' clause. In order to ensure legal certainty in respect of the possible exposure to any penalty for failure to use radio spectrum, thresholds of use, including in terms of time, quantity or identity of radio spectrum, should be established in advance. Trading and leasing of radio spectrum should ensure the effective use by the original holder of the right.

(123) Where harmonised conditions for a radio spectrum band are established under Decision No 676/2002/EC, competent authorities are to decide on the most appropriate authorisation regime to be applied in that band or parts thereof. Where all Member States are likely to face similar problems for which diverging solutions could fragment the internal market in equipment, and thereby delay the rollout of 5G systems, it may be necessary for the Commission, taking utmost account of the opinion of the RSPG, to recommend common solutions, acknowledging technical harmonisation measures in force. This could provide a common toolbox for Member States which they could take into account when identifying appropriate consistent authorisation regimes to be applied to a band, or part of a band, depending on factors such as population density, propagation characteristics of the bands, divergence between urban and rural uses, the possible need to protect existing services and the resulting implications for economies of scale in manufacturing.

(124) Network infrastructure sharing, and in some instances radio spectrum sharing, can allow for a more effective and efficient use of radio spectrum and ensure the rapid deployment of networks, especially in less densely populated areas. When establishing the conditions to be attached to rights of use for radio spectrum, competent authorities should also consider authorising forms of sharing or coordination between undertakings with a view to ensuring effective and efficient use of radio spectrum or compliance with coverage obligations, in accordance with competition law principles.

(125) The requirement to respect the principles of technology and service neutrality in granting rights of use, together with the possibility to transfer rights between

undertakings, underpin the freedom and means to deliver electronic communications services to the public, thereby also facilitating the achievement of general interest objectives. This Directive is without prejudice whether radio spectrum is assigned directly to providers of electronic communications networks or services or to entities that use those networks or services. Such entities may be radio or television broadcast content providers. The responsibility for compliance with the conditions attached to the right of use for radio spectrum and the relevant conditions attached to the general authorisation should in any case lie with the undertaking to which the right of use for radio spectrum has been granted. Certain obligations imposed on broadcasters for the delivery of audiovisual media services may require the use of specific criteria and procedures for the granting of radio spectrum usage rights to meet a specific general interest objective set out by Member States in accordance with Union law. However, the procedure for the granting of such right should in any event be objective, transparent, non-discriminatory and proportionate.

(126) The case-law of the Court of Justice requires that any national restrictions to the rights guaranteed by Article 56 TFEU should be objectively justified and proportionate and should not exceed those necessary to achieve their objectives. Moreover, radio spectrum granted without following an open procedure should not be used for purposes other than the general interest objective for which they were granted. In such a case, the interested parties should be given the opportunity to comment within a reasonable period. As part of the application procedure for granting rights, Member States should verify whether the applicant is able to comply with the conditions to be attached to such rights. Those conditions should be reflected in eligibility criteria set out in objective, transparent, proportionate and non-discriminatory terms prior to the launch of any competitive selection procedure. For the purpose of applying such criteria, the applicant may be requested to submit the necessary information to prove his ability to comply with those conditions. Where such information is not provided, the application for the right of use for radio spectrum may be rejected.

(127) Member States should, prior to the granting of the right, impose only the verification of elements that can reasonably be demonstrated by an applicant exercising ordinary care, taking due account of the important public and market value of radio spectrum as a scarce public resource. This is without prejudice to the possibility for subsequent verification of the fulfilment of eligibility criteria, for example through milestones, where criteria could not reasonably be met initially. To preserve effective and efficient use of radio spectrum, Member States should not grant rights where their review indicates applicants' inability to comply with the conditions, without prejudice to the possibility of facilitating time-limited experimental use. Sufficiently long duration of authorisations for the use of radio spectrum should increase investment predictability to contribute to faster network roll-out and better services, as well as stability to support radio spectrum trading and leasing. Unless use of radio spectrum is authorised for an unlimited period, such a duration should both take account of the objectives pursued and be sufficient to facilitate recoupment of the investments made. While a longer duration can ensure investment predictability, measures to ensure effective and efficient use of radio spectrum, such as the power of the competent authority to amend or

withdraw the right in the case of non-compliance with the conditions attached to the rights of use, or the facilitation of radio spectrum tradability and leasing, will serve to prevent inappropriate accumulation of radio spectrum and support greater flexibility in distributing radio spectrum resources. Greater recourse to annualised fees is also a means to ensure a continuous assessment of the use of the radio spectrum by the holder of the right.

(128) Considering the importance of technical innovation, Member States should be able to provide for rights to use radio spectrum for experimental purposes, subject to specific restrictions and conditions strictly justified by the experimental nature of such rights.

(129) In deciding whether to renew already granted rights of use for harmonised radio spectrum, competent authorities should take into account the extent to which renewal would further the objectives of the regulatory framework and other objectives under Union and national law. Any such decision should be subject to an open, non-discriminatory and transparent procedure and based on a review of how the conditions attached to the rights concerned have been fulfilled. When assessing the need to renew rights of use, Member States should weigh the competitive impact of renewing assigned rights against the promotion of more efficient exploitation or of innovative new uses that might result if the band were opened to new users. Competent authorities should be able to make their determination in this regard by allowing for only a limited duration for renewal in order to prevent severe disruption of established use. While decisions on whether to renew rights assigned prior to the applicability of this Directive should respect any rules already applicable, Member States should also ensure that they do not prejudice the objectives of this Directive.

(130) When renewing existing rights of use for harmonised radio spectrum, Member States should, together with the assessment of the need to renew the right, review the fees attached thereto with a view to ensuring that those fees continue to promote optimal use, taking account, inter alia, of market developments and technological evolution. For reasons of legal certainty, it is appropriate for any adjustments to the existing fees to be based on the same principles as those applicable to the award of new rights of use.

(131) Effective management of radio spectrum can be ensured by facilitating the continued efficient use of radio spectrum that has already been assigned. In order to ensure legal certainty to holders of the rights, the possibility of renewal of rights of use should be considered within an appropriate time-span prior to the expiry of the rights concerned, for example, where rights have been assigned for 15 years or more, at least two years before expiry of those rights, unless the possibility of renewal was explicitly excluded at the time of assignment of the rights. In the interest of continuous resource management, competent authorities should be able to undertake such consideration at their own initiative as well as in response to a request from the assignee. The renewal of the right to use should not be granted contrary to the will of the assignee.

(132) Transfer of rights of use for radio spectrum can be an effective means of increasing the efficient use of spectrum. For the sake of flexibility and efficiency, and to allow valuation of radio spectrum by the market, Member States should by default allow radio spectrum users to transfer or lease their rights of use for radio spectrum to third

parties following a simple procedure and subject to the conditions attached to such rights and to competition rules, under the supervision of the national regulatory authorities responsible. In order to facilitate such transfers or leases, provided that technical implementing measures adopted under Decision No 676/2002/EC are respected, Member States should also consider requests to have radio spectrum rights partitioned or disaggregated and conditions for use reviewed.

(133) Measures taken specifically to promote competition when granting or renewing rights of use for radio spectrum should be decided by national regulatory and other competent authorities, which have the necessary economic, technical and market knowledge. Radio spectrum assignment conditions can influence the competitive situation in electronic communications markets and conditions for entry. Limited access to radio spectrum, in particular when radio spectrum is scarce, can create a barrier to entry or hamper investment, network roll-out, the provision of new services or applications, innovation and competition. New rights of use, including those acquired through transfer or leasing, and the introduction of new flexible criteria for radio spectrum use can also influence existing competition. Where unduly applied, certain conditions used to promote competition, can have other effects; for example, radio spectrum caps and reservations can create artificial scarcity, wholesale access obligations can unduly constrain business models in the absence of market power, and limits on transfers can impede the development of secondary markets. Therefore, a consistent and objective competition test for the imposition of such conditions is necessary and should be applied consistently. The use of such measures should therefore be based on a thorough and objective assessment, by national regulatory and other competent authorities, of the market and the competitive conditions thereof. National competent authorities should, however, always ensure the effective and efficient use of radio spectrum and avoid distortion of competition through anti-competitive hoarding.

(134) Building on opinions from the RSPG, the adoption of a common deadline for allowing the use of a radio spectrum band which has been harmonised under Decision No 676/2002/EC can be necessary to avoid cross-border interference and beneficial to ensure release of the full benefits of the related technical harmonisation measures for equipment markets and for the deployment of very high capacity networks and services. Allowing the use of a radio spectrum band entails assigning radio spectrum under a general authorisation regime or individual rights of use in order to permit the use of radio spectrum as soon as the assignment process is completed. In order to assign radio spectrum bands, it might be necessary to release a band occupied by other users and to compensate them. Implementation of a common deadline for allowing the use of harmonised bands for electronic communications services, including for 5G, might however be affected in a particular Member State by problems relating to unresolved cross-border coordination issues between Member States or with third countries, to the complexity of ensuring the technical migration of existing users of a band; a restriction to the use of the band based on a general interest objective, to the safeguarding of national security and defence or to force majeure. In any case, Member States should take all measures to reduce any delay to the minimum in terms of geographical coverage, timing and radio spectrum range. Moreover, Member States should be able,

where appropriate in light of their assessment of the relevant circumstances, to request the Union to provide legal, political and technical support to resolve radio spectrum coordination issues with countries neighbouring the Union, including candidate and acceding countries, in such a way that the Member States concerned can observe their obligations under Union law.

(135) In order to ensure increased coordinated availabilities of radio spectrum by 2020 to achieve very high speed fixed and wireless networks in the context of 5G, the 3,4-3,8 GHz and the 24,25-27,5 GHz bands have been identified by the RSPG as priority bands suitable to fulfil the objectives of the 5G Action Plan by 2020. The 40,5-43,5 GHz and 66-71 GHz bands have also been identified for further study. It is therefore necessary to ensure that, by 31 December 2020, the 3,4-3,8 GHz and the 24,25-27,5 GHz bands or parts thereof are available for terrestrial systems capable of providing wireless broadband services under harmonised conditions established by technical implementing measures adopted in accordance with Article 4 of Decision No 676/2002/EC, complementing Decision (EU) 2017/899 of the European Parliament and of the Council[33], as those bands have specific qualities, in terms of coverage and data capacity, which allow them to be combined appropriately to meet 5G requirements. Member States could, however, be affected by interference likely to arise from third countries which, in accordance with the ITU Radio Regulations, have identified those bands for services other than international mobile telecommunications. This might have an effect on the obligation to meet a common implementation date. Future use of the 26 GHz band for 5G terrestrial wireless services is likely, inter alia, to target urban areas and sub-urban hotspot areas, while some deployment can be foreseen along major roads and railway tracks in rural areas. This provides the opportunity to use the 26 GHz band for services other than 5G wireless outside those geographic areas, for example, for business specific communications or indoor use, and therefore allows Member States to designate and make that band available on a non-exclusive basis.

(136) Where demand for a radio spectrum band exceeds the availability and, as a result, a Member State concludes that the rights of use for radio spectrum is to be limited, appropriate and transparent procedures should apply for the granting of such rights to avoid any discrimination and optimise the use of the scarce resource. Such limitation should be justified, proportionate and based on a thorough assessment of market conditions, giving due weight to the overall benefits for users and to national and internal market objectives. The objectives governing any limitation procedure should be clearly established in advance. When considering the most appropriate selection procedure, and in accordance with coordination measures taken at Union level, Member States should, in a timely and transparent manner, consult all interested parties on the justification, objectives and conditions of the procedure. Member States should be able to use, inter alia, competitive or comparative selection procedures for the assignment of radio spectrum or of numbering resources with exceptional economic value. In administering such schemes, competent authorities should take into account the objectives of this Directive. If a Member State finds that further rights can be made available in a band, it should start the process therefor.

(137) Massive growth in radio spectrum demand, and in end-user demand for wireless broadband capacity, calls for solutions allowing alternative, complementary, spectrally efficient access solutions, including low-power wireless access systems with a small-area operating range, such as RLANs and networks of low-power small-size cellular access points. Such complementary wireless access systems, in particular publicly accessible RLAN access points, increase access to the internet for end-users and mobile traffic off-loading for mobile operators. RLANs use harmonised radio spectrum without requiring an individual authorisation or a right of use for radio spectrum. To date, most RLAN access points are used by private users as local wireless extension of their fixed broadband connection. End-users, within the limits of their own internet subscription, should not be prevented from sharing access to their RLAN with others, in order to increase the number of available access points, in particular, in densely populated areas, maximise wireless data capacity through radio spectrum re-use and create a cost-effective complementary wireless broadband infrastructure accessible to other end-users. Therefore, unnecessary restrictions to the deployment and interlinkage of RLAN access points should also be removed.

(138) Public authorities or public service providers that use RLANs in their premises for their personnel, visitors or clients, for example to facilitate access to e-Government services or for information on public transport or road traffic management, could also provide access to such access points for general use by citizens as an ancillary service to services they offer to the public on such premises, to the extent allowed by competition and public procurement rules. Moreover, the provider of such local access to electronic communications networks within or around a private property or a limited public area on a non-commercial basis or as an ancillary service to another activity that is not dependent on such access, such as RLAN hotspots made available to customers of other commercial activities or to the general public in that area, can be subject to compliance with general authorisations for rights of use for radio spectrum but should not be subject to any conditions or requirements attached to general authorisations applicable to providers of public electronic communications networks or services or to obligations regarding end-users or interconnection. However, such a provider should remain subject to the liability rules set out in Directive 2000/31/EC of the European Parliament and of the Council[(34)]. Further technologies, such as LiFi, are emerging and will complement current radio spectrum capabilities of RLANs and wireless access point to include optical visible light-based access points and lead to hybrid local area networks allowing optical wireless communication.

(139) Since low power small-area wireless access points, such as femtocells, picocells, metrocells or microcells, can be very small and make use of unobtrusive equipment similar to that of domestic RLAN routers, which do not require any permits beyond those necessary for the use of radio spectrum, and considering the positive impact of such access points on the use of radio spectrum and on the development of wireless communications, any restriction to their deployment should be limited to the greatest extent possible. As a result, in order to facilitate the deployment of small-area wireless access points, and without prejudice to any applicable requirement related to radio spectrum management, Member States should not subject to any individual permits

the deployment of such devices on buildings which are not officially protected as part of a designated environment or because of their special architectural or historical merit, except for reasons of public safety. To that end, their characteristics, such as maximum size, weight and emission characteristics, should be specified at Union level in a proportionate way for local deployment and to ensure a high level of protection of public health, as laid down in Recommendation 1999/519/EC. For the operation of small-area wireless access points, Article 7 of Directive 2014/53/EU should apply. This is without prejudice to private property rights set out in Union or national law. The procedure for considering permit applications should be streamlined and without prejudice to any commercial agreements and any administrative charge involved should be limited to the administrative costs relating to the processing of the application. The process of assessing a request for a permit should take as little time as possible, and in principle no longer than four months.

(140) Public buildings and other public infrastructure are visited and used daily by a significant number of end-users who need connectivity to consume eGovernment, eTransport and other services. Other public infrastructure, such as street lamps, traffic lights, offer very valuable sites for deploying small cells, for instance, due to their density. Without prejudice to the possibility for competent authorities to subject the deployment of small-area wireless access points to individual prior permits, operators should have the right to access to those public sites for the purpose of adequately serving demand. Member States should therefore ensure that such public buildings and other public infrastructure are made available on reasonable conditions for the deployment of small-cells with a view to complementing Directive 2014/61/EU and without prejudice to the principles set out in this Directive. Directive 2014/61/EU follows a functional approach and imposes obligations of access to physical infrastructure only when it is part of a network and only if it is owned or used by a network operator, thereby leaving many buildings owned or used by public authorities outside its scope. On the contrary, a specific obligation is not necessary for physical infrastructure, such as ducts or poles, used for intelligent transport systems, which are owned by network operators (providers of transport services or providers of public electronic communications networks), and host parts of a network, thus falling within the scope of Directive 2014/61/EU.

(141) The provisions of this Directive as regards access and interconnection apply to public electronic communications networks. Providers of electronic communications networks other than to the public do not have access or interconnection obligations under this Directive except where, in benefiting from access to public networks, they may be subject to conditions laid down by Member States.

(142) The term ‘access’ has a wide range of meanings, and it is therefore necessary to define precisely how that term is used in this Directive, without prejudice to how it is used in other Union measures. An operator may own the underlying network or facilities or may rent some or all of them.

(143) In an open and competitive market, there should be no restrictions that prevent undertakings from negotiating access and interconnection arrangements between themselves, in particular on cross-border agreements, subject to the competition rules

laid down in the TFEU. In the context of achieving a more efficient, truly pan-European market, with effective competition, more choice and competitive services to end-users, undertakings which receive requests for access or interconnection from other undertakings that are subject to general authorisation in order to provide electronic communications networks or services to the public should in principle conclude such agreements on a commercial basis, and negotiate in good faith.

(144) In markets where there continue to be large differences in negotiating power between undertakings, and where some undertakings rely on infrastructure provided by others for delivery of their services, it is appropriate to establish a regulatory framework to ensure that the market functions effectively. National regulatory authorities should have the power to secure, where commercial negotiation fails, adequate access and interconnection and interoperability of services in the interest of end-users. In particular, they can ensure end-to-end connectivity by imposing proportionate obligations on undertakings that are subject to the general authorisation and that control access to end-users. Control of means of access may entail ownership or control of the physical link to the end-user (either fixed or mobile), or the ability to change or withdraw the national number or numbers needed to access an end-user's network termination point. This would be the case for example if network operators were to restrict unreasonably end-user choice for access to internet portals and services.

(145) In light of the principle of non-discrimination, national regulatory authorities should ensure that all undertakings, irrespective of their size and business model, whether vertically integrated or separated, can interconnect on reasonable terms and conditions, with a view to providing end-to-end connectivity and access to the internet.

(146) National legal or administrative measures that link the terms and conditions for access or interconnection to the activities of the party seeking interconnection, and specifically to the degree of its investment in network infrastructure, and not to the interconnection or access services provided, may cause market distortion and may therefore not be compatible with competition rules.

(147) Network operators who control access to their own customers do so on the basis of unique numbers or addresses from a published numbering or addressing range. Other network operators need to be able to deliver traffic to those customers, and so need to be able to interconnect directly or indirectly to each other. It is therefore appropriate to lay down rights and obligations to negotiate interconnection.

(148) Interoperability is of benefit to end-users and is an important aim of that regulatory framework. Encouraging interoperability is one of the objectives for national regulatory and other competent authorities as set out in that framework. That framework also provides for the Commission to publish a list of standards or specifications covering the provision of services, technical interfaces or network functions, as the basis for encouraging harmonisation in electronic communications. Member States should encourage the use of published standards or specifications to the extent strictly necessary to ensure interoperability of services and to improve freedom of choice for users.

(149) Currently both end-to-end connectivity and access to emergency services depend on end-users using number-based interpersonal communications services. Future technological developments or an increased use of number-independent interpersonal communications services could entail a lack of sufficient interoperability between communications services. As a consequence, significant barriers to market entry and obstacles to further onward innovation could emerge and appreciably threaten effective end-to-end connectivity between end-users.

(150) Where such interoperability issues arise, the Commission should be able to request a BEREC report which should provide a factual assessment of the market situation at Union and Member State level. Taking utmost account of the BEREC report and other available evidence and taking into account the effects on the internal market, the Commission should decide whether there is a need for regulatory intervention by national regulatory or other competent authorities. If the Commission considers that such regulatory intervention should be considered by national regulatory or other competent authorities, it should be able to adopt implementing measures specifying the nature and scope of possible regulatory interventions by national regulatory or other competent authorities, including in particular obligations to publish and allow the use, modification and redistribution of relevant information by the authorities and other providers and measures to impose the mandatory use of standards or specifications on all or specific providers.

(151) National regulatory or other competent authorities should assess, in light of the specific national circumstances, whether any intervention is necessary and justified to ensure end-to-end-connectivity, and if so, impose proportionate obligations, in accordance with the Commission's implementing measures, on those providers of number-independent interpersonal communications services with a significant level of coverage and user-uptake. The term significant should be interpreted in the sense that the geographic coverage and the number of end-users of the provider concerned represent a critical mass with a view to achieving the goal of ensuring end-to-end connectivity between end-users. Providers with a limited number of end-users or limited geographic coverage which would contribute only marginally to achieving that goal, should normally not be subject to such interoperability obligations.

(152) In situations where undertakings are deprived of access to viable alternatives to non-replicable wiring, cables and associated facilities inside buildings or up to the first concentration or distribution point and in order to promote competitive outcomes in the interest of end-users, national regulatory authorities should be empowered to impose access obligations on all undertakings, irrespective of a designation as having significant market power. In that regard, national regulatory authorities should take into consideration all technical and economic barriers to future replication of networks. However, as such obligations can in certain cases be intrusive, can undermine incentives for investments, and can have the effect of strengthening the position of dominant players, they should be imposed only where justified and proportionate to achieving sustainable competition in the relevant markets. The mere fact that more than one such infrastructure already exists should not necessarily be interpreted as showing

that its assets are replicable. If necessary in combination with such access obligations, undertakings should also be able to rely on the obligations to provide access to physical infrastructure on the basis of Directive 2014/61/EU. Any obligations imposed by the national regulatory authority under this Directive and decisions taken by other competent authorities under Directive 2014/61/EU to ensure access to in-building physical infrastructure or to physical infrastructure up to the access point should be consistent.

(153) National regulatory authorities should be able, to the extent necessary, to impose obligations on undertakings to provide access to the facilities referred to in an annex to this Directive, namely application programming interfaces (APIs) and electronic programme guides (EPGs), to ensure not only accessibility for end-users to digital radio and television broadcast services but also to related complementary services. Such complementary services should be able to include programme related services which are specifically designed to improve accessibility for end-users with disabilities, and programme related connected television services.

(154) It is important that when national regulatory authorities assess the concentration or distribution point up to which they intend to impose access, they choose a point in accordance with BEREC guidelines. Selecting a point nearer to end-users will be more beneficial to infrastructure competition and the roll-out of very high capacity networks. In this way the national regulatory authority should first consider choosing a point in a building or just outside a building. It could be justified to extend access obligations to wiring and cables beyond the first concentration or distribution point while confining such obligations to points as close as possible to end-users capable of hosting a sufficient number of end-users, where it is demonstrated that replication faces high and non-transitory physical or economic barriers, leading to important competition problems or market failures at the retail level to the detriment of end-users. The assessment of the replicability of network elements requires a market review which is different from an analysis assessing significant market power, and so the national regulatory authority does not need to establish significant market power in order to impose these obligations. On the other hand, such review requires a sufficient economic assessment of market conditions, to establish whether the criteria necessary to impose obligations beyond the first concentration or distribution point are met. Such extended access obligations are more likely to be necessary in geographical areas where the business case for alternative infrastructure rollout is more risky, for example because of low population density or because of the limited number of multi-dwelling buildings. Conversely, a high concentration of households might indicate that the imposition of such obligations is unnecessary. National regulatory authorities should also consider whether such obligations have the potential to strengthen the position of undertakings designated as having significant market power. National regulatory authorities should be able to impose access to active or virtual network elements used for service provision on such infrastructure if access to passive elements would be economically inefficient or physically impracticable, and if the national regulatory authority considers that, absent such an intervention, the purpose of the access obligation would be circumvented. In order to enhance consistent regulatory practice across the Union, the Commission

should be able to require the national regulatory authority to withdraw its draft measures extending access obligations beyond the first concentration or distribution point, where BEREC shares the Commission's serious doubts as to the compatibility of the draft measure with Union law and in particular the regulatory objectives of this Directive.

(155) In such cases, in order to comply with the principle of proportionality, it can be appropriate for national regulatory authorities to exempt certain categories of owners or undertakings, or both, from obligations going beyond the first concentration or distribution point, which should be determined by national regulatory authorities, on the grounds that an access obligation not based on an undertaking's designation as having significant market power would risk compromising their business case for recently deployed network elements, in particular by small local projects. Wholesale-only undertakings should not be subject to such access obligations if they offer an effective alternative access on a commercial basis to a very high capacity network, on fair, non-discriminatory and reasonable terms and conditions, including as regards price. It should be possible to extend that exemption to other providers on the same terms. The exemption may not be appropriate for providers that are in receipt of public funding.

(156) Sharing of passive infrastructure used in the provision of wireless electronic communications services in compliance with competition law principles can be particularly useful to maximise very high capacity connectivity throughout the Union, especially in less dense areas where replication is impracticable and end-users risk being deprived of such connectivity. National regulatory or other competent authorities should, by way of exception, be able to impose such sharing or localised roaming access, in accordance with Union law, if that possibility has been clearly established in the original conditions for the granting of the right of use and they demonstrate the benefits of such sharing in terms of overcoming insurmountable economic or physical obstacles and access to networks or services is therefore severely deficient or absent, and taking into account several factors, including in particular the need for coverage along major transport paths, choice and a higher quality of service for end-users as well as the need to maintain infrastructure roll-out incentives. In circumstances where there is no access by end-users, and sharing of passive infrastructure alone does not suffice to address the situation, the national regulatory authorities should be able to impose obligations on the sharing of active infrastructure. In so doing, national regulatory or other competent authorities retain the flexibility to choose the most appropriate sharing or access obligation which should be proportionate and justified based on the nature of the problem identified.

(157) While it is appropriate in some circumstances for a national regulatory or other competent authority to impose obligations on undertakings irrespective of a designation of significant market power in order to achieve goals such as end-to-end connectivity or interoperability of services, it is necessary to ensure that such obligations are imposed in accordance with the regulatory framework and, in particular, its notification procedures. Such obligations should be imposed only where justified in order to secure the objectives of this Directive, and where they are objectively justified, transparent, proportionate and non-discriminatory for the purpose of promoting

efficiency, sustainable competition, efficient investment and innovation, and giving the maximum benefit to end-users, and imposed in accordance with the relevant notification procedures.

(158) In order to overcome insurmountable economic or physical obstacles for providing end-users with services or networks which rely on the use of radio spectrum and where mobile coverage gaps persist, their closing may require the access and sharing of passive infrastructure, or, where this is not sufficient, the sharing of active infrastructure, or localised roaming access agreements. Without prejudice to sharing obligations attached to the rights of use on the basis of other provisions of this Directive, and in particular measures to promote competition, where national regulatory or other competent authorities intend to take measures to impose the sharing of passive infrastructure, or when passive access and sharing are not sufficient, active infrastructure sharing or localised roaming access agreements, they may, however, also be called to consider the possible risk for market participants in underserved areas.

(159) Competition rules alone may not always be sufficient to ensure cultural diversity and media pluralism in the area of digital television. Technological and market developments make it necessary to review obligations to provide conditional access on fair, reasonable and non-discriminatory terms on a regular basis, by a Member State for its national market, in particular to determine whether it is justified to extend obligations to EPGs and APIs, to the extent necessary to ensure accessibility for end-users to specified digital broadcasting services. Member States should be able to specify the digital broadcasting services to which access by end-users is to be ensured by any legislative, regulatory or administrative means that they consider to be necessary.

(160) Member States should also be able to permit their national regulatory authority to review obligations in relation to conditional access to digital broadcasting services in order to assess through a market analysis whether to withdraw or amend conditions for undertakings that do not have significant market power on the relevant market. Such a withdrawal or amendment should not adversely affect access for end-users to such services or the prospects for effective competition.

(161) There is a need for ex ante obligations in certain circumstances in order to ensure the development of a competitive market, the conditions of which favour the deployment and take-up of very high capacity networks and services, and the maximisation of end-user benefits. The definition of significant market power used in this Directive is equivalent to the concept of dominance as defined in the case-law of the Court of Justice.

(162) Two or more undertakings can be found to enjoy a joint dominant position not only where there exist structural or other links between them but also where the structure of the relevant market is conducive to coordinated effects, that is, it encourages parallel or aligned anti-competitive behaviour on the market.

(163) It is essential that ex ante regulatory obligations should be imposed on a wholesale market only where there are one or more undertakings with significant market power, with a view to ensuring sustainable competition and where Union and national competition law remedies are not sufficient to address the problem. The Commission has drawn up guidelines at Union level in accordance with the principles of competition

law for national regulatory authorities to follow in assessing whether competition is effective in a given market and in assessing significant market power. National regulatory authorities should analyse whether a given product or service market is effectively competitive in a given geographical area, which could be the whole or a part of the territory of the Member State concerned or neighbouring parts of territories of Member States considered together. An analysis of effective competition should include an analysis as to whether the market is prospectively competitive, and thus whether any lack of effective competition is durable. Those guidelines should also address the issue of newly emerging markets, where de facto the market leader is likely to have a substantial market share but should not be subjected to inappropriate obligations. The Commission should review the guidelines regularly, in particular on the occasion of a review of the existing law, taking into account the case-law of the Court of Justice, economic thinking and actual market experience and with a view to ensuring that they remain appropriate in a rapidly developing market. National regulatory authorities will need to cooperate with each other where the relevant market is found to be transnational.

(164) In determining whether an undertaking has significant market power in a specific market, national regulatory authorities should act in accordance with Union law and take utmost account of the Commission guidelines on market analysis and the assessment of significant market power.

(165) National regulatory authorities should define relevant geographic markets within their territory taking into utmost account the Commission Recommendation on relevant product and service markets (the 'Recommendation') adopted pursuant to this Directive and taking into account national and local circumstances. Therefore, national regulatory authorities should at least analyse the markets that are contained in the Recommendation, including those markets that are listed but no longer regulated in the specific national or local context. National regulatory authorities should also analyse markets that are not contained in that Recommendation, but that are regulated within the territory of their jurisdiction on the basis of previous market analyses, or other markets, if they have sufficient grounds to consider that the three criteria provided in this Directive are met.

(166) Transnational markets can be defined when it is justified by the geographic market definition, taking into account all supply-side and demand-side factors in accordance with competition law principles. BEREC is the most appropriate body to undertake such analysis, benefiting from the extensive collective experience of national regulatory authorities when defining markets on a national level. National circumstances should be taken into account when an analysis of potential transnational markets is undertaken. If transnational markets are defined and warrant regulatory intervention, concerned national regulatory authorities should cooperate to identify the appropriate regulatory response, including in the process of notification to the Commission. They can also cooperate in the same manner where transnational markets are not identified but on their territories market conditions are sufficiently homogeneous to benefit from a coordinated regulatory approach, such as for example in terms of similar costs, market structures or operators, or in the case of transnational or comparable end-user demand.

(167) In some circumstances geographic markets are defined as national or sub-national, for example due to the national or local nature of network roll-out which determines the boundaries of undertakings' potential market power in respect of wholesale supply, but there is still a significant transnational demand from one or more categories of end-users. That can in particular be the case for demand from business end-users with multisite facility operations in different Member States. If that transnational demand is not sufficiently met by suppliers, for example if they are fragmented along national borders or locally, a potential internal market barrier arises. Therefore, BEREC should be empowered to provide guidelines to national regulatory authorities on common regulatory approaches to ensure that transnational demand can be met in a satisfactory way, providing a basis for the interoperability of wholesale access products across the Union and permitting efficiencies and economies of scale despite the fragmented supply side. BEREC's guidelines should shape the choices of national regulatory authorities in pursuing the internal market objective when imposing regulatory obligations on undertakings designated as having significant market power at national level while providing guidance for the harmonisation of technical specifications of wholesale access products capable of meeting such identified transnational demand, in the interest of the internal market.

(168) The objective of any ex ante regulatory intervention is ultimately to produce benefits for end-users in terms of price, quality and choice by making retail markets effectively competitive on a sustainable basis. It is likely that national regulatory authorities will gradually be able to find many retail markets to be competitive even in the absence of wholesale regulation, especially taking into account expected improvements in innovation and competition.

(169) For national regulatory authorities, the starting point for the identification of wholesale markets susceptible to ex ante regulation is the analysis of corresponding retail markets. The analysis of effective competition at the retail and at the wholesale level is conducted from a forward-looking perspective over a given time horizon, and is guided by competition law, including, as appropriate, the relevant case law of the Court of Justice. If it is concluded that a retail market would be effectively competitive in the absence of ex ante wholesale regulation on the corresponding relevant markets, this should lead the national regulatory authority to conclude that regulation is no longer needed at the relevant wholesale level.

(170) During the gradual transition to deregulated markets, commercial agreements, including for co-investment and access between operators will gradually become more common, and if they are sustainable and improve competitive dynamics, they can contribute to the conclusion that a particular wholesale market does not warrant ex ante regulation. A similar logic would apply in reverse, to the unforeseeable termination of commercial agreements on a deregulated market. The analysis of such agreements should take into account that the prospect of regulation can be a motive for network owners to enter into commercial negotiations. With a view to ensuring adequate consideration of the impact of regulation imposed on related markets when determining whether a given market warrants ex ante regulation, national regulatory authorities should ensure markets are

analysed in a consistent manner and where possible, at the same time or as close as possible to each other in time.

(171) When assessing wholesale regulation to solve problems at the retail level, national regulatory authorities should take into account the fact that several wholesale markets can provide wholesale upstream inputs for a particular retail market, and, conversely, that a single wholesale market can provide wholesale upstream inputs for a variety of retail markets. Furthermore, competitive dynamics in a particular market can be influenced by markets that are contiguous but not in a vertical relationship, such as can be the case between certain fixed and mobile markets. National regulatory authorities should conduct that assessment for each individual wholesale market considered for regulation, starting with remedies for access to civil infrastructure, as such remedies are usually conducive to more sustainable competition including infrastructure competition, and thereafter analysing any wholesale markets considered susceptible to ex ante regulation in order of their likely suitability to address identified competition problems at retail level. When deciding on the specific remedy to be imposed, national regulatory authorities should assess its technical feasibility and carry out a cost-benefit analysis, having regard to its degree of suitability to address the identified competition problems at retail level, and enabling competition based on differentiation and technology neutrality. National regulatory authorities should consider the consequences of imposing any specific remedy which, if feasible only on certain network topologies, could constitute a disincentive for the deployment of very high capacity networks in the interest of end-users.

(172) Without prejudice to the principle of technology neutrality, the national regulatory authorities should provide incentives through the remedies imposed, and, where possible, before the roll-out of infrastructure, for the development of flexible and open network architecture, which would reduce eventually the burden and complexity of remedies imposed at a later stage. At each stage of the assessment, before the national regulatory authority determines whether any additional, more burdensome, remedy should be imposed on the undertaking designated as having significant market power, it should seek to determine whether the retail market concerned would be effectively competitive, also taking into account any relevant commercial arrangements or other wholesale market circumstances, including other types of regulation already in force, such as for example general access obligations to non-replicable assets or obligations imposed pursuant to Directive 2014/61/EU, and of any regulation already considered to be appropriate by the national regulatory authority for an undertaking designated as having significant market power. Such an assessment, aiming to ensure that only the most appropriate remedies necessary to effectively address any problems identified in the market analysis are imposed, does not preclude a national regulatory authority from finding that a mix of such remedies together, even if of differing intensity, in line with the proportionality principle, offers the least intrusive way of addressing the problem. Even if such differences do not result in the definition of distinct geographic markets, they should be able to justify differentiation in the appropriate remedies imposed in light of the differing intensity of competitive constraints.

(173) Ex ante regulation imposed at the wholesale level, which is in principle less intrusive than retail regulation, is considered to be sufficient to tackle potential competition problems on the related downstream retail market or markets. The advances in the functioning of competition since the regulatory framework for electronic communications has been in place are demonstrated by the progressive deregulation of retail markets across the Union. Furthermore, the rules relating to the imposition of ex ante remedies on undertakings designated as having significant market power should, where possible, be simplified and be made more predictable. Therefore, the imposition of ex ante regulatory controls based on an undertaking's designation as having significant market power in wholesale markets should prevail.

(174) When a national regulatory authority withdraws wholesale regulation, it should define an appropriate notice period to ensure a sustainable transition to a de-regulated market. In defining such a notice period, the national regulatory authority should take into account the existing agreements between access providers and access seekers that have been entered into on the basis of the imposed regulatory obligations. In particular, such agreements can provide a contractual legal protection to access seekers for a determined period. The national regulatory authority should also take into account the effective possibility for market participants to take up any commercial wholesale access or co-investment offers which can be present in the market and the need to avoid an extended period of possible regulatory arbitrage. Transition arrangements established by the national regulatory authority should consider the extent and timing of regulatory oversight of pre-existing agreements, once the notice period starts.

(175) In order to provide market players with certainty as to regulatory conditions, a time limit for market reviews is necessary. It is important to conduct a market analysis on a regular basis and within a reasonable and appropriate time-frame. There is a risk that failure by a national regulatory authority to analyse a market within the time-limit jeopardises the internal market, and normal infringement proceedings do not produce their desired effect on time. Alternatively, the national regulatory authority concerned should be able to request the assistance of BEREC to complete the market analysis. Such assistance could, for example, take the form of a specific task force composed of representatives of other national regulatory authorities.

(176) Due to the high level of technological innovation and highly dynamic markets in the electronic communications sector, there is a need to adapt regulation rapidly in a coordinated and harmonised way at Union level, as experience has shown that divergence among the national regulatory authorities in the implementation of the regulatory framework may create a barrier to the internal market.

(177) However, in the interest of greater stability and predictability of regulatory measures, the maximum period allowed between market analyses should be extended from three to five years, provided market changes in the intervening period do not require a new analysis. In determining whether a national regulatory authority has complied with its obligation to analyse markets and notified the corresponding draft measure at a minimum every five years, only a notification including a new assessment of the market definition and of significant market power will be considered to be starting a new five-

year market cycle. A mere notification of new or amended regulatory remedies, imposed on the basis of a previous and unrevised market analysis will not be considered to have satisfied that obligation. Non-compliance by a national regulatory authority with the obligation to conduct market analysis at regular intervals laid down in this Directive should not be considered, in itself, to be a ground for the invalidity or inapplicability of existing obligations imposed by that national regulatory authority in the market in question.

(178) The imposition of a specific obligation on an undertaking designated as having significant market power does not require an additional market analysis but rather a justification that the obligation in question is appropriate and proportionate in relation to the nature of the problem identified on the market in question, and on the related retail market.

(179) When assessing the proportionality of the obligations and conditions to be imposed, national regulatory authorities should take into account the different competitive conditions existing in the different areas within their Member States having regard in particular to the results of the geographical survey conducted in accordance with this Directive.

(180) When considering whether to impose remedies to control prices, and if so in what form, national regulatory authorities should seek to allow a fair return for the investor on a particular new investment project. In particular, there are risks associated with investment projects specific to new access networks which support products for which demand is uncertain at the time the investment is made.

(181) Reviews of obligations imposed on undertakings designated as having significant market power during the timeframe of a market analysis should allow national regulatory authorities to take into account the impact on competitive conditions of new developments, for instance of newly concluded voluntary agreements between undertakings, such as access and co-investment agreements, thus providing the flexibility which is particularly necessary in the context of longer regulatory cycles. A similar logic should apply in the case of an unforeseeable breach or termination of a commercial agreement, or if such an agreement has effects diverging from the market analysis. If the termination of an existing agreement occurs in a deregulated market, it is possible that a new market analysis is required. In the absence of a single important change in the market but in the case of dynamic markets, it may be necessary to conduct a market analysis more often than every five years, for example not earlier than every three years as was the case until the date of application of this Directive. Markets should be considered to be dynamic if the technological evolution and end-user demand patterns are likely to evolve in such a way that the conclusions of the analysis would be superseded within the medium term for a significant group of geographic areas or of end-users within the geographic and product market defined by the national regulatory authority.

(182) Transparency of terms and conditions for access and interconnection, including prices, serve to speed up negotiation, avoid disputes and give confidence to market players that a service is not being provided on discriminatory terms. Openness and transparency of

technical interfaces can be particularly important in ensuring interoperability. Where a national regulatory authority imposes obligations to make information public, it should also be able to specify the manner in which the information is to be made available, and whether it is free of charge, taking into account the nature and purpose of the information concerned.

(183) In light of the variety of network topologies, access products and market circumstance that have arisen since 2002, the objectives of Annex II to Directive 2002/19/EC, concerning local loop unbundling, and access products for providers of digital television and radio services, can be better achieved and in a more flexible manner, by providing guidelines on the minimum criteria for a reference offer to be developed by and periodically updated by BEREC. That Annex should therefore be deleted.

(184) The principle of non-discrimination ensures that undertakings with significant market power do not distort competition, in particular where they are vertically integrated undertakings that supply services to undertakings with whom they compete on downstream markets.

(185) In order to address and prevent non-price related discriminatory behaviour, equivalence of inputs (EoI) is in principle the surest way of achieving effective protection from discrimination. On the other hand, providing regulated wholesale inputs on an EoI basis is likely to trigger higher compliance costs than other forms of non-discrimination obligations. Those higher compliance costs should be measured against the benefits of more vigorous competition downstream, and of the relevance of non-discrimination guarantees in circumstances where the undertaking designated as having significant market power is not subject to direct price controls. In particular, national regulatory authorities might consider that the provision of wholesale inputs over new systems on an EoI basis is more likely to create sufficient net benefits, and thus be proportionate, given the comparatively lower incremental compliance costs to ensure that newly built systems are EoI-compliant. On the other hand, national regulatory authorities should also consider whether obligations are proportionate for affected undertakings, for example, by taking into account implementation costs and weigh up possible disincentives to the deployment of new systems, relative to more incremental upgrades, in the event that the former would be subject to more restrictive regulatory obligations. In Member States with a high number of small-scale undertakings designated as having significant market power, the imposition of EoI on each of those undertakings can be disproportionate.

(186) Accounting separation allows internal price transfers to be rendered visible, and allows national regulatory authorities to check compliance with obligations for non-discrimination where applicable. In this regard the Commission published Recommendation 2005/698/EC[(35)].

(187) Civil engineering assets that can host an electronic communications network are crucial for the successful roll-out of new networks because of the high cost of duplicating them, and the significant savings that can be made when they can be reused. Therefore, in addition to the rules on physical infrastructure laid down in Directive 2014/61/EU, a specific remedy is necessary in those circumstances where civil engineering

assets are owned by an undertaking designated as having significant market power. Where civil engineering assets exist and are reusable, the positive effect of achieving effective access to them on the roll-out of competing infrastructure is very high, and it is therefore necessary to ensure that access to such assets can be used as a self-standing remedy for the improvement of competitive and deployment dynamics in any downstream market, to be considered before assessing the need to impose any other potential remedies, and not just as an ancillary remedy to other wholesale products or services or as a remedy limited to undertakings availing themselves of such other wholesale products or services. National regulatory authorities should value reusable legacy civil engineering assets on the basis of the regulatory accounting value net of the accumulated depreciation at the time of calculation, indexed by an appropriate price index, such as the retail price index, and excluding those assets which are fully depreciated, over a period of not less than 40 years, but still in use.

(188) National regulatory authorities should, when imposing obligations for access to new and enhanced infrastructures, ensure that access conditions reflect the circumstances underlying the investment decision, taking into account, inter alia, the roll-out costs, the expected rate of take up of the new products and services and the expected retail price levels. Moreover, in order to provide planning certainty to investors, national regulatory authorities should be able to set, if applicable, terms and conditions for access which are consistent over appropriate review periods. In the event that price controls are considered to be appropriate, such terms and conditions can include pricing arrangements which depend on volumes or length of contract in accordance with Union law and provided they have no discriminatory effect. Any access conditions imposed should respect the need to preserve effective competition in services to consumers and businesses.

(189) Mandating access to network infrastructure can be justified as a means of increasing competition, but national regulatory authorities need to balance the rights of an infrastructure owner to exploit its infrastructure for its own benefit, and the rights of other service providers to access facilities that are essential for the provision of competing services.

(190) In markets where an increased number of access networks can be expected on a forward-looking basis, end-users are more likely to benefit from improvements in network quality, by virtue of infrastructure-based competition, compared to markets where only one network persists. The adequacy of competition on other parameters, such as price and choice, is likely to depend on the national and local competitive circumstances. In assessing the adequacy of competition on such parameters and the need for regulatory intervention, national regulatory authorities should also take into account whether wholesale access is available to any interested undertaking on reasonable commercial terms permitting sustainable competitive outcomes for end-users on the retail market. The application of general competition rules in markets characterised by sustainable and effective infrastructure-based competition should be sufficient.

(191) Where obligations are imposed on undertakings that require them to meet reasonable requests for access to and use of networks elements and associated facilities, such

requests should be refused only on the basis of objective criteria such as technical feasibility or the need to maintain network integrity. Where access is refused, the aggrieved party should be able to submit the case to the dispute resolutions procedures under this Directive. An undertaking with mandated access obligations cannot be required to provide types of access which it is not within its power to provide. The imposition by national regulatory authorities of mandated access that increases competition in the short term should not reduce incentives for competitors to invest in alternative facilities that will secure more sustainable competition or higher performance and end-user benefits in the long term. When choosing the least intrusive regulatory intervention, and in line with the principle of proportionality, national regulatory authorities could, for example, decide to review the obligations imposed on undertakings designated as having significant market power and amend any previous decision, including by withdrawing obligations, imposing or not imposing new access obligations if this is in the interests of users and sustainable service competition. National regulatory authorities should be able to impose technical and operational conditions on the provider or beneficiaries of mandated access in accordance with Union law. In particular the imposition of technical standards should comply with Directive (EU) 2015/1535.

(192) Price control may be necessary when market analysis in a particular market reveals inefficient competition. In particular, undertakings designated as having significant market power should avoid a price squeeze whereby the difference between their retail prices and the interconnection or access prices charged to competitors who provide similar retail services is not adequate to ensure sustainable competition. When a national regulatory authority calculates costs incurred in establishing a service mandated under this Directive, it is appropriate to allow a reasonable return on the capital employed including appropriate labour and building costs, with the value of capital adjusted where necessary to reflect the current valuation of assets and efficiency of operations. The method of cost recovery should be appropriate to the circumstances taking account of the need to promote efficiency, sustainable competition and deployment of very high capacity networks and thereby maximise end-user benefits, and should take in account the need to have predictable and stable wholesale prices for the benefit of all operators seeking to deploy new and enhanced networks, in accordance with Commission Recommendation 2013/466/EU[(36)].

(193) Due to uncertainty regarding the rate of materialisation of demand for the provision of next-generation broadband services, it is important in order to promote efficient investment and innovation to allow those operators investing in new or upgraded networks a certain degree of pricing flexibility. National regulatory authorities should be able to decide to maintain or not to impose regulated wholesale access prices on next-generation networks if sufficient competition safeguards are present. More specifically, to prevent excessive prices in markets where there are undertakings designated as having significant market power, pricing flexibility should be accompanied by additional safeguards to protect competition and end-user interests, such as strict non-discrimination obligations, measures to ensure technical and economic replicability of downstream products, and a demonstrable retail price constraint resulting from

infrastructure competition or a price anchor stemming from other regulated access products, or both. Those competitive safeguards do not prejudice the identification by national regulatory authorities of other circumstances under which it would be appropriate not to impose regulated access prices for certain wholesale inputs, such as where high price elasticity of end-user demand makes it unprofitable for the undertaking designated as having significant market power to charge prices appreciably above the competitive level or where lower population density reduces the incentives for the development of very high capacity networks and the national regulatory authority establishes that effective and non-discriminatory access is ensured through obligations imposed in accordance with this Directive.

(194) Where a national regulatory authority imposes obligations to implement a cost-accounting system in order to support price controls, it should be able to undertake an annual audit to ensure compliance with that cost-accounting system, provided that it has the necessary qualified staff, or to require such an audit to be carried out by another qualified body, independent of the undertaking concerned.

(195) The charging system in the Union for wholesale voice call termination is based on Calling Party Network Pays. An analysis of demand and supply substitutability shows that currently or in the foreseeable future, there are no substitutes at wholesale level which might constrain the setting of charges for termination in a given network. Taking into account the two-way access nature of termination markets, further potential competition problems include cross-subsidisation between operators. Those potential competition problems are common to both fixed and mobile voice call termination markets. Therefore, in light of the ability and incentives of terminating operators to raise prices substantially above cost, cost orientation is considered to be the most appropriate intervention to address this concern over the medium term. Future market developments may alter the dynamics of those markets to the extent that regulation would no longer be necessary.

(196) In order to reduce the regulatory burden in addressing the competition problems relating to wholesale voice call termination consistently across the Union, the Commission should establish, by means of a delegated act, a single maximum voice termination rate for mobile services and a single maximum voice termination rate for fixed services that apply Union-wide.

(197) This Directive should lay down the detailed criteria and parameters on the basis of which the values of voice call termination rates are set. Termination rates across the Union have decreased consistently and are expected to continue to do so. When the Commission determines the maximum termination rates in the first delegated act that it adopts pursuant to this Directive, it should disregard any unjustified exceptional national deviation from that trend.

(198) Due to current uncertainty regarding the rate of materialisation of demand for very high capacity broadband services as well as general economies of scale and density, co-investment agreements offer significant benefits in terms of pooling of costs and risks, enabling smaller-scale undertakings to invest on economically rational terms and thus promoting sustainable, long-term competition, including in areas where infrastructure-

based competition might not be efficient. Such co-investments can take different forms, including co-ownership of network assets or long-term risk sharing through co-financing or through purchase agreements. In that context, purchase agreements which constitute co-investments entail the acquisition of specific rights to capacity of a structural character, involving a degree of co-determination and enabling co-investors to compete effectively and sustainably in the long term in downstream markets in which the undertaking designated as having significant market power is active. By contrast, commercial access agreements that are limited to the rental of capacity do not give rise to such rights and therefore should not be considered to be co-investments.

(199) Where an undertaking designated as having significant market power makes an offer for co-investment on fair, reasonable and non-discriminatory terms in very high capacity networks that consist of optical fibre elements up to the end-user premises or the base station, providing an opportunity to undertakings of different sizes and financial capacity to become infrastructure co-investors, the national regulatory authority should be able to refrain from imposing obligations pursuant to this Directive on the new very high capacity network if at least one potential co-investor has entered into a co-investment agreement with that undertaking. Where a national regulatory authority decides to make binding a co-investment offer that has not resulted in an agreement, and decides, not to impose additional regulatory obligations, it can do so, subject to the condition that such an agreement is to be concluded before the deregulatory measure takes effect. Where it is technically impracticable to deploy optical fibre elements up to the end-user's premises, very high capacity networks consisting of optical fibre elements up to the immediate proximity of, meaning just outside, such premises should also be able to benefit from the same regulatory treatment.

(200) When making a determination to refrain from imposing obligations, the national regulatory authority should take such steps after ensuring that the co-investment offers comply with the necessary criteria and are made in good faith. The differential regulatory treatment of new very high capacity networks should be subject to review in subsequent market analyses which, in particular after some time has elapsed, may require adjustments to the regulatory treatment. In duly justified circumstances, national regulatory authorities should be able to impose obligations on such new network elements when they establish that certain markets would, in the absence of regulatory intervention, face significant competition problems. In particular, when there are multiple downstream markets that have not reached the same degree of competition, national regulatory authorities could require specific asymmetric remedies to promote effective competition, for instance, but not limited to, niche retail markets, such as electronic communications products for business end-users. To maintain the competitiveness of the markets, national regulatory authorities should also safeguard the rights of access seekers who do not participate in a given co-investment. This should be achieved through the maintenance of existing access products or, where legacy network elements are dismantled in due course, through the imposition of access products with at least comparable functionality and quality to those previously available on the legacy infrastructure, in both cases subject to an appropriate adaptable

mechanism validated by the national regulatory authority that does not undermine the incentives for co-investors.

(201) In order to enhance the consistent regulatory practice across the Union, where national regulatory authorities conclude that the conditions of the co-investment offer are met, the Commission should be able to require the national regulatory authority to withdraw its draft measures either refraining from imposing obligations or intervening with regulatory obligations in order to address significant competition problems, where BEREC shares the Commission's serious doubts as to the compatibility of the draft measure with Union law and in particular the regulatory objectives of this Directive. In the interest of efficiency, a national regulatory authority should be able to submit a single notification to the Commission of a draft measure that relates to a co-investment scheme that meets the relevant conditions. Where the Commission does not exercise its powers to require the withdrawal of the draft measure, it would be disproportionate for subsequent simplified notifications of individual draft decisions of the national regulatory authority on the basis of the same scheme, including in addition evidence of actual conclusion of an agreement with at least one co-investor, to be subject to a decision requiring withdrawal in the absence of a change in circumstances. Furthermore, obligations imposed on undertakings, irrespective of whether they are designated as having significant market power, pursuant to this Directive or to Directive 2014/61/EU continue to apply. Obligations in relation to co-investment agreements are without prejudice to the application of Union law.

(202) The purpose of functional separation, whereby the vertically integrated undertaking is required to establish operationally separate business entities, is to ensure the provision of fully equivalent access products to all downstream operators, including the operator's own vertically integrated downstream divisions. Functional separation has the capacity to improve competition in several relevant markets by significantly reducing the incentive for discrimination and by making it easier to verify and enforce compliance with non-discrimination obligations. In exceptional cases, it should be possible for functional separation to be justified as a remedy where there has been persistent failure to achieve effective non-discrimination in several of the markets concerned, and where there is little or no prospect of infrastructure competition within a reasonable time-frame after recourse to one or more remedies previously considered to be appropriate. However, it is very important to ensure that its imposition preserves the incentives of the undertaking concerned to invest in its network and that it does not entail any potential negative effects on consumer welfare. Its imposition requires a coordinated analysis of different relevant markets related to the access network, in accordance with the market analysis procedure. When undertaking the market analysis and designing the details of that remedy, national regulatory authorities should pay particular attention to the products to be managed by the separate business entities, taking into account the extent of network roll-out and the degree of technological progress, which may affect the substitutability of fixed and wireless services. In order to avoid distortions of competition in the internal market, proposals for functional separation should be approved in advance by the Commission.

(203) The implementation of functional separation should not prevent appropriate coordination mechanisms between the different separate business entities in order to ensure that the economic and management supervision rights of the parent company are protected.

(204) Where a vertically integrated undertaking chooses to transfer a substantial part or all of its local access network assets to a separate legal entity under different ownership or by establishing a separate business entity for dealing with access products, the national regulatory authority should assess the effect of the intended transaction, including any access commitments offered by this undertaking, on all existing regulatory obligations imposed on the vertically integrated undertaking in order to ensure the compatibility of any new arrangements with this Directive. The national regulatory authority concerned should undertake a new analysis of the markets in which the segregated entity operates, and impose, maintain, amend or withdraw obligations accordingly. To that end, the national regulatory authority should be able to request information from the undertaking.

(205) It is already possible today in some markets that as part of the market analysis the undertakings designated as having significant market power are able to offer commitments which aim to address competition problems identified by the national regulatory authority and which the national regulatory authority then takes into account in deciding on the appropriate regulatory obligations. Any new market developments should be taken into account in deciding on the most appropriate remedies. However, and without prejudice to the provisions on regulatory treatment of co-investments, the nature of the commitments offered as such does not limit the discretion accorded to the national regulatory authority to impose remedies on undertakings designated as having significant market power. In order to enhance transparency and to provide legal certainty across the Union, the procedure for undertakings to offer commitments and for the national regulatory authorities to assess them, taking into account the views of market participants by means of a market test, and if appropriate to make them binding on the committing undertaking and enforceable by the national regulatory authority, should be laid down in this Directive. Unless the national regulatory authority has made commitments on co-investments binding and decided not to impose obligations, that procedure is without prejudice to the application of the market analysis procedure and the obligation to impose appropriate and proportionate remedies to address the identified market failure.

(206) National regulatory authorities should be able to make the commitments binding, wholly or in part, for a specific period which should not exceed the period for which they are offered, after having conducted a market test by means of a public consultation of interested parties. Where the commitments have been made binding, the national regulatory authority should consider the consequences of this decision in its market analysis and take them into account when choosing the most appropriate regulatory measures. National regulatory authorities should consider the commitments made from a forward-looking perspective of sustainability, in particular when choosing the period for which they are made binding, and should have regard to the value

placed by stakeholders in the public consultation on stable and predictable market conditions. Binding commitments related to voluntary separation by a vertically integrated undertaking which has been designated as having significant market power in one or more relevant markets can add predictability and transparency to the process, by setting out the process of implementation of the planned separation, for example by providing a roadmap for implementation with clear milestones and predictable consequences if certain milestones are not met.

(207) The commitments can include the appointment of a monitoring trustee, whose identity and mandate should be approved by the national regulatory authority, and the obligation on the undertaking offering them to provide periodic implementation reports.

(208) Network owners whose business model is limited to the provision of wholesale services to others, can be beneficial to the creation of a thriving wholesale market, with positive effects on retail competition downstream. Furthermore, their business model can be attractive to potential financial investors in less volatile infrastructure assets and with longer term perspectives on deployment of very high capacity networks. Nevertheless, the presence of a wholesale-only undertaking does not necessarily lead to effectively competitive retail markets, and wholesale-only undertakings can be designated as having significant market power in particular product and geographic markets. Certain competition risks arising from the behaviour of undertakings following wholesale-only business models might be lower than for vertically integrated undertakings, provided the wholesale-only model is genuine and no incentives to discriminate between downstream providers exist. The regulatory response should therefore be commensurately less intrusive, but should preserve in particular the possibility to introduce obligations in relation to fair and reasonable pricing. On the other hand, national regulatory authorities should be able to intervene if competition problems have arisen to the detriment of end-users. An undertaking active on a wholesale market that supplies retail services solely to business users larger than small and medium-sized enterprises should be regarded as a wholesale-only undertaking.

(209) To facilitate the migration from legacy copper networks to next-generation networks, which is in the interests of end-users, national regulatory authorities should be able to monitor network operators' own initiatives in this respect and to establish, where necessary, the conditions for an appropriate migration process, for example by means of prior notice, transparency and availability of alternative access products of at least comparable quality, once the network owner has demonstrated the intent and readiness to switch to upgraded networks. In order to avoid unjustified delays to the migration, national regulatory authorities should be empowered to withdraw access obligations relating to the copper network once an adequate migration process has been established and compliance with conditions and process for migration from legacy infrastructure is ensured. However, network owners should be able to decommission legacy networks. Access seekers migrating from an access product based on legacy infrastructure to an access product based on a more advanced technology or medium should be able to upgrade their access to any regulated product with higher capacity, but should not be required to do so. In the case of an upgrade, access seekers should adhere to the

regulatory conditions for access to the higher capacity access product, as determined by the national regulatory authority in its market analysis.

(210) The liberalisation of the telecommunications sector and increasing competition and choice for communications services go hand in hand with parallel action to create a harmonised regulatory framework which secures the delivery of universal service. The concept of universal service should evolve to reflect advances in technology, market developments and changes in user demand.

(211) Under Article 169 TFEU, the Union is to contribute to the protection of consumers.

(212) Universal service is a safety net to ensure that a set of at least the minimum services is available to all end-users and at an affordable price to consumers, where a risk of social exclusion arising from the lack of such access prevents citizens from full social and economic participation in society.

(213) Basic broadband internet access is virtually universally available across the Union and very widely used for a broad range of activities. However, the overall take-up rate is lower than availability as there are still those who are disconnected due to reasons related to awareness, cost, skills and due to choice. Affordable adequate broadband internet access has become of crucial importance to society and the wider economy. It provides the basis for participation in the digital economy and society through essential online internet services.

(214) A fundamental requirement of universal service is to ensure that all consumers have access at an affordable price to an available adequate broadband internet access and voice communications services, at a fixed location. Member States should also have the possibility to ensure affordability of adequate broadband internet access and voice communications services other than at a fixed location to citizens on the move, where they consider that this is necessary to ensure consumers' full social and economic participation in society. Particular attention should be paid in that context to ensuring that end-users with disabilities have equivalent access. There should be no limitations on the technical means by which the connection is provided, allowing for wired or wireless technologies, nor any limitations on the category of providers which provide part or all of universal service obligations.

(215) The speed of internet access experienced by a given user depends on a number of factors, including the providers of internet connectivity as well as the given application for which a connection is being used. It is for the Member States, taking into account BEREC’s report on best practices, to define adequate broadband internet access in light of national conditions and the minimum bandwidth enjoyed by the majority of consumers within a Member State’s territory in order to allow an adequate level of social inclusion and participation in the digital economy and society in their territory. The affordable adequate broadband internet access service should have sufficient bandwidth to support access to and use of at least a minimum set of basic services that reflect the services used by the majority of end-users. To that end, the Commission should monitor the development in the use of the internet to identify those online services used by a majority of end-users across the Union and necessary for social and economic participation in society and update the list accordingly. The requirements of Union law

on open internet access, in particular of Regulation (EU) 2015/2120, should apply to any adequate broadband internet access service.

(216) Consumers should not be obliged to access services they do not want and it should therefore be possible for eligible consumers to restrict, on request, the affordable universal service to voice communications services.

(217) Member States should be able to extend measures related to affordability and control of expenditure measures to microenterprises and small and medium-sized enterprises and not-for-profit organisations, provided they fulfil the relevant conditions.

(218) National regulatory authorities in coordination with other competent authorities should be able to monitor the evolution and level of retail tariffs for services that fall within the scope of universal service obligations. Such monitoring should be carried out in such a way that it would not represent an excessive administrative burden for either national regulatory and other competent authorities or providers of such services.

(219) An affordable price means a price defined by Member States at national level in light of specific national conditions. Where Member States establish that retail prices for adequate broadband internet access and voice communications services are not affordable to consumers with low-income or special social needs, including older people, end-users with disabilities and consumers living in rural or geographically isolated areas, they should take appropriate measures. To that end, Member States could provide those consumers with direct support for communication purposes, which could be part of social allowances or vouchers for, or direct payments to, those consumers. This can be an appropriate alternative having regard to the need to minimise market distortions. Alternatively, or in addition, Member States could require providers of such services to offer basic tariff options or packages to those consumers.

(220) Ensuring affordability may involve special tariff options or packages to deal with the needs of low-income users or users with special social needs. Such offers should be provided with basic features, in order to avoid distortion of the functioning of the market. Affordability for individual consumers should be founded upon their right to contract with a provider, availability of a number, continued connection of service and their ability to monitor and control their expenditure.

(221) Where a Member State requires providers to offer to consumers with a low-income or special social needs tariff options or packages different from those provided under normal commercial conditions, those tariff options or packages should be provided by all providers of internet access and voice communication services. In accordance with the principle of proportionality, requiring all providers of internet access and voice communication services to offer tariff options or packages should not result in excessive administrative or financial burden for those providers or Member States. Where a Member State demonstrates such an excessive administrative or financial burden, on the basis of an objective assessment, it might exceptionally decide to impose the obligation to offer specific tariff options or packages only on designated providers. The objective assessment should also consider the benefits arising for consumers with a low-income or special social needs from a choice of providers and the benefits for all providers being able to benefit from being a universal service provider. Where a

Member State exceptionally decides to impose the obligation to offer specific tariff options or packages only on designated providers, they should ensure that consumers with low income or special needs have a choice of providers offering social tariffs. However, in certain situations Member States might not be able to guarantee a choice of providers, for example where only one undertaking provides services in the area of residence of the beneficiary, or if providing a choice would put an excessive additional organisational and financial burden on the Member State.

(222) Affordability should no longer be a barrier to consumers' access to the minimum set of connectivity services. A right to contract with a provider should mean that consumers who might face refusal, in particular those with a low-income or special social needs, should have the possibility to enter into a contract for the provision of affordable adequate broadband internet access and voice communications services at least at a fixed location with any provider of such services in that location or a designated provider, where a Member State has exceptionally decided to designate one or more providers to offer those tariff options or packages. In order to minimise the financial risks such as non-payment of bills, providers should be free to provide the contract under pre-payment terms, on the basis of affordable individual pre-paid units.

(223) In order to ensure that citizens are reachable by voice communications services, Member States should ensure the availability of a number for a reasonable period also during periods of non-use of voice communications services. Providers should be able to put in place mechanisms to check the continued interest of the consumer in keeping the availability of the number.

(224) Compensating providers of such services in such circumstances need not result in the distortion of competition, provided that such providers are compensated for the specific net cost involved and provided that the net cost burden is recovered in a competitively neutral way.

(225) In order to assess the need for affordability measures, national regulatory authorities in coordination with other competent authorities should be able to monitor the evolution and details of offers of tariff options or packages for consumers with a low-income or special social needs.

(226) Member States should introduce measures to promote the creation of a market for affordable products and services incorporating facilities for consumers with disabilities, including equipment with assistive technologies. This can be achieved, inter alia, by referring to European standards, or by supporting the implementation of requirements under Union law harmonising accessibility requirements for products and services. Member States should introduce appropriate measures in accordance with national circumstances, which gives flexibility for Member States to take specific measures for instance if the market is not delivering affordable products and services incorporating facilities for consumers with disabilities under normal economic conditions. Those measures could include direct financial support to end-users. The cost to consumers with disabilities of relay services should be equivalent to the average cost of voice communications services.

(227) Relay services refer to services which enable two-way communication between remote end-users of different modes of communication (for example text, sign, speech) by providing conversion between those modes of communication, normally by a human operator. Real time text is defined in accordance with Union law harmonising accessibility requirements for products and services and refers to form of text conversation in point to point situations or in multipoint conferencing where the text being entered is sent in such a way that the communication is perceived by the user as being continuous on a character-by-character basis.

(228) For data communications at data rates that are sufficient to permit an adequate broadband internet access, fixed-line connections are nearly universally available and used by a majority of citizens of the Union. The standard fixed broadband coverage and availability in the Union stood at 97 % of homes in 2015, with an average take-up rate of 72 %, and services based on wireless technologies have even greater reach. However, there are differences between Member States as regards availability and affordability of fixed broadband across urban and rural areas.

(229) The market has a leading role to play in ensuring availability of broadband internet access with constantly growing capacity. In areas where the market would not deliver, other public policy tools to support availability of adequate broadband internet access connections appear, in principle, more cost-effective and less market-distortive than universal service obligations, for example recourse to financial instruments such as those available under the European Fund for Strategic Investments and Connecting Europe Facility, the use of public funding from the European structural and investment funds, attaching coverage obligations to rights of use for radio spectrum to support the deployment of broadband networks in less densely populated areas and public investment in accordance with Union State aid rules.

(230) If, after carrying out a due assessment, taking into account the results of the geographical survey of networks deployment conducted by the competent authority, or the latest information available to the Member States before the results of the first geographical survey are available, it is shown that neither the market nor public intervention mechanisms are likely to provide end-users in certain areas with a connection capable of delivering adequate broadband internet access service as defined by Member States and voice communications services at a fixed location, the Member State should be able to exceptionally designate different providers or sets of providers of those services in the different relevant parts of the national territory. In addition to the geographical survey, Member States should be able to use, where necessary, any additional evidence to establish to what extent adequate broadband internet access and voice communications services are available at a fixed location. That additional evidence could include data available to the national regulatory authorities through the market analysis procedure and data collected from users. Member States should be able to restrict universal service obligations in support of availability of adequate broadband internet access services to the end-user's primary location or residence. There should be no constraints on the technical means by which the adequate broadband internet access and voice communications services at a fixed location are provided, allowing for wired or wireless

technologies, nor any constraints on which undertakings provide part or all of universal service obligations.

(231) In accordance with the principle of subsidiarity, it is for the Member States to decide on the basis of objective criteria which undertakings are designated as universal service providers, where appropriate taking into account the ability and the willingness of undertakings to accept all or part of the universal service obligations. This does not preclude Member States from including, in the designation process, specific conditions justified on grounds of efficiency, including grouping geographical areas or components or setting minimum periods for the designation.

(232) The costs of ensuring the availability of a connection capable of delivering an adequate broadband internet access service as identified in accordance with this Directive and voice communications services at a fixed location at an affordable price within the universal service obligations should be estimated, in particular by assessing the expected financial burden for providers and users in the electronic communications sector.

(233) A priori, requirements to ensure nation-wide territorial coverage imposed in the designation procedure are likely to exclude or dissuade certain undertakings from applying for being designated as universal service providers. Designating providers with universal service obligations for an excessive or indefinite period might also lead to an a priori exclusion of certain providers. Where a Member State decides to designate one or more providers for affordability purposes, it should be possible for those providers to be different from those designated for the availability element of universal service.

(234) When a provider that is, on an exceptional basis, designated to provide tariff options or packages different from those provided under normal commercial conditions, as identified in accordance with this Directive or to ensure the availability at a fixed location of an adequate broadband internet access service or voice communications services, as identified in accordance with this Directive, chooses to dispose of a substantial part, viewed in light of its universal service obligations, or all, of its local access network assets in the national territory to a separate legal entity under different ultimate ownership, the competent authority should assess the effects of the transaction in order to ensure the continuity of universal service obligations in all or parts of the national territory. To that end, the competent authority which imposed the universal service obligations should be informed by the provider in advance of the disposal. The assessment of the competent authority should not prejudice the completion of the transaction.

(235) In order to provide stability and support a gradual transition, Member States should be able to continue to ensure the provision of universal service in their territory, other than adequate broadband internet access and voice communications services at a fixed location, that are included in the scope of their universal service obligations on the basis of Directive 2002/22/EC on the date of entry into force of this Directive, provided the services or comparable services are not available under normal commercial circumstances. Allowing the continuation of the provision of public payphones to the

general public by use of coins, credit or debit cards, or pre-payment cards, including cards for use with dialling codes, directories and directory enquiry services under the universal service regime, for as long as the need is demonstrated, would give Member States the flexibility necessary to duly take into account the varying national circumstances. This can include providing public pay telephones in the main entry points of the country, such as airports or train and bus stations, as well as places used by people in the case of an emergency, such as hospitals, police stations and highway emergency areas, to meet the reasonable needs of end-users, including in particular end-users with disabilities.

(236) Member States should monitor the situation of consumers with respect to their use of adequate broadband internet access and voice communications services and in particular with respect to affordability. The affordability of adequate broadband internet access and voice communications services is related to the information which users receive regarding usage expenses as well as the relative cost of usage compared to other services, and is also related to their ability to control expenditure. Affordability therefore means giving power to consumers through obligations imposed on providers. Those obligations include a specified level of itemised billing, the possibility for consumers selectively to block certain calls, such as high-priced calls to premium services, to control expenditure via pre-payment means, and to offset up-front connection fees. Such measures may need to be reviewed and changed in light of market developments. Itemised bills on the usage of internet access should indicate only the time, duration and amount of consumption during a usage session but not indicate the websites or internet end-points connected to during such a usage session.

(237) Except in cases of persistent late payment or non-payment of bills, consumers entitled to affordable tariffs should, pending resolution of the dispute, be protected from immediate disconnection from the network on the grounds of an unpaid bill and, in particular, in the case of disputes over high bills for premium-rate services, continue to have access to essential voice communications services and a minimum service level of internet access as defined by Member States. It should be possible for Member States to decide that such access is to continue to be provided only if the subscriber continues to pay line rental or basic internet access charges.

(238) Where the provision of adequate broadband internet access and voice communications services or the provision of other services in accordance with this Directive result in an unfair burden on a provider, taking due account of the costs and revenues as well as the intangible benefits resulting from the provision of the services concerned, that unfair burden can be included in any net cost calculation of universal service obligations.

(239) Member States should, where necessary, establish mechanisms for financing the net cost of universal service obligations where it is demonstrated that the obligations can only be provided at a loss or at a net cost which falls outside normal commercial standards. It is important to ensure that the net cost of universal service obligations is properly calculated and that any financing is undertaken with minimum distortion to the market and to undertakings, and is compatible with Articles 107 and 108 TFEU.

(240) Any calculation of the net cost of universal service obligations should take due account of costs and revenues, as well as the intangible benefits resulting from providing universal service, but should not hinder the general aim of ensuring that pricing structures reflect costs. Any net costs of universal service obligations should be calculated on the basis of transparent procedures.

(241) Taking into account intangible benefits means that an estimate in monetary terms, of the indirect benefits that an undertaking derives by virtue of its position as universal service provider, should be deducted from the direct net cost of universal service obligations in order to determine the overall cost burden.

(242) When a universal service obligation represents an unfair burden on a provider, it is appropriate to allow Member States to establish mechanisms for efficiently recovering net costs. Recovery via public funds constitutes one method of recovering the net costs of universal service obligations. Sharing the net costs of universal service obligations between providers of electronic communications networks and services is another method. Member States should be able to finance the net costs of different elements of universal service through different mechanisms, or to finance the net costs of some or all elements from either of the mechanisms or a combination of both. Adequate broadband internet access brings benefits not only to the electronic communications sector but also to the wider online economy and to society as a whole. Providing a connection which supports broadband speeds to an increased number of end-users enables them to use online services and so actively to participate in the digital society. Ensuring such connections on the basis of universal service obligations serves both the public interest and the interests of electronic communications providers. Those facts should be taken into account by Member States when choosing and designing mechanisms for recovering net costs.

(243) In the case of cost recovery by means of sharing the net cost of universal service obligations between providers of electronic communications networks and services, Member States should ensure that the method of allocation amongst providers is based on objective and non-discriminatory criteria and is in accordance with the principle of proportionality. This principle does not prevent Member States from exempting new entrants which have not achieved any significant market presence. Any funding mechanism should ensure that market participants only contribute to the financing of universal service obligations and not to other activities which are not directly linked to the provision of the universal service obligations. Recovery mechanisms should respect the principles of Union law, and in particular in the case of sharing mechanisms those of non-discrimination and proportionality. Any funding mechanism should ensure that users in one Member State do not contribute to the costs of providing universal service in another Member State. It should be possible to share the net cost of universal service obligations between all or certain specified classes of providers. Member States should ensure that the sharing mechanism respects the principles of transparency, least market distortion, non-discrimination and proportionality. Least market distortion means that contributions should be recovered in a way that as far as possible minimises the impact

of the financial burden falling on end-users, for example by spreading contributions as widely as possible.

(244) Providers benefiting from universal service funding should provide national regulatory authorities with a sufficient level of detail of the specific elements requiring such funding in order to justify their request. Member States' schemes for the costing and financing of universal service obligations should be communicated to the Commission for verification of compatibility with the TFEU. Member States should ensure effective transparency and control of amounts charged to finance universal service obligations. Calculation of the net costs of providing universal service should be based on an objective and transparent methodology to ensure the most cost-effective provision of universal service and promote a level playing field for market participants. Making the methodology intended to be used to calculate the net costs of individual universal service elements known in advance before implementing the calculation could help to achieve increased transparency.

(245) Member States are not permitted to impose on market participants financial contributions which relate to measures which are not part of the universal service obligations. Individual Member States remain free to impose special measures (outside the scope of universal service obligations) and finance them in accordance with Union law but not by means of contributions from market participants.

(246) In order to effectively support the free movement of goods, services and persons within the Union, it should be possible to use certain national numbering resources, in particular certain non-geographic numbers, in an extraterritorial manner, that is to say outside the territory of the assigning Member State. In light of the considerable risk of fraud with respect to interpersonal communications, such extraterritorial use should be allowed only for the provision of electronic communications services other than interpersonal communications services. Enforcement of relevant national laws, in particular consumer protection rules and other rules related to the use of numbering resources should be ensured by Member States independently of where the rights of use have been granted and where the numbering resources are used within the Union. Member States remain competent to apply their national law to numbering resources used in their territory, including where rights have been granted in another Member State.

(247) The national regulatory or other competent authorities of the Member States where numbering resources from another Member State are used, do not have control over those numbering resources. It is therefore essential that the national regulatory or other competent authority of the Member State which grants the rights of extraterritorial use should also ensure the effective protection of the end-users in the Member States where those numbers are used. In order to achieve effective protection, national regulatory or other competent authority granting rights of extraterritorial use should attach conditions in accordance with this Directive regarding the respect by the provider of consumer protection rules and other rules related to the use of numbering resources in those Member States where those resources will be used.

(248) The national regulatory or other competent authorities of those Member States where numbering resources are used should be able to request the support of the national regulatory or other competent authorities that granted the rights of use for the numbering resources to assist in enforcing its rules. Enforcement measures by the national regulatory or other competent authorities that granted the rights of use should include dissuasive penalties, in particular in the case of a serious breach the withdrawal of the right of extraterritorial use for the numbering resources assigned to the undertaking concerned. The requirements on extraterritorial use should be without prejudice to Member States' powers to block, on a case-by-case basis, access to numbers or services where that is justified by reasons of fraud or misuse. The extraterritorial use of numbering resources should be without prejudice to Union rules related to the provision of roaming services, including those relative to preventing anomalous or abusive use of roaming services which are subject to retail price regulation and which benefit from regulated wholesale roaming rates. Member States should continue to be able to enter into specific agreements on extraterritorial use of numbering resources with third countries.

(249) Member States should promote over-the-air provisioning of numbering resources to facilitate switching of electronic communications providers. Over-the-air provisioning of numbering resources enables the reprogramming of communications equipment identifiers without physical access to the devices concerned. This feature is particularly relevant for machine-to-machine services, that is to say services involving an automated transfer of data and information between devices or software-based applications with limited or no human interaction. Providers of such machine-to-machine services might not have recourse to physical access to their devices due to their use in remote conditions, or to the large number of devices deployed or to their usage patterns. In light of the emerging machine-to-machine market and new technologies, Member States should strive to ensure technology neutrality in promoting over-the-air provisioning.

(250) Access to numbering resources on the basis of transparent, objective and non-discriminatory criteria is essential for undertakings to compete in the electronic communications sector. Member States should be able to grant rights of use for numbering resources to undertakings other than providers of electronic communications networks or services in light of the increasing relevance of numbers for various Internet of Things services. All elements of national numbering plans should be managed by national regulatory or other competent authorities, including point codes used in network addressing. Where there is a need for harmonisation of numbering resources in the Union to support the development of pan-European services or cross-border services, in particular new machine-to-machine-based services such as connected cars, and where the demand could not be met on the basis of the existing numbering resources in place, the Commission can take implementing measures with the assistance of BEREC.

(251) It should be possible to fulfil the requirement to publish decisions on the granting of rights of use for numbering resources by making those decisions publicly accessible via a website.

(252) Considering the particular aspects related to the reporting of missing children, Member States should maintain their commitment to ensure that a well-functioning service for reporting missing children is actually available in their territories under the number '116000'. Member States should take appropriate measures to ensure that a sufficient level of service quality in operating the '116000' number is achieved.

(253) In parallel with the missing children hotline number '116000', many Member States also ensure that children have access to a child-friendly service operating a helpline that helps children in need of care and protection through the use of the '116111' number. Such Member States and the Commission should ensure that awareness is raised among citizens, and in particular among children and among national child protection systems, about the existence of the '116111' helpline.

(254) An internal market implies that end-users are able to access all numbers included in the national numbering plans of other Member States and to access services using non-geographic numbers, including freephone and premium-rate numbers, within the Union, except where the called end-user has chosen, for commercial reasons, to limit access from certain geographical areas. End-users should also be able to access numbers from the Universal International Freephone Numbers (UIFN). Cross-border access to numbering resources and associated services should not be prevented, except in objectively justified cases, for example to combat fraud or abuse (for example, in connection with certain premium-rate services), when the number is defined as having a national scope only (for example, a national short code) or when it is economically unfeasible. Tariffs charged to parties calling from outside the Member State concerned need not be the same as for those parties calling from inside that Member State. Users should be fully informed in advance and in a clear manner of any charges applicable to freephone numbers, such as international call charges for numbers accessible through standard international dialling codes. Where interconnection or other service revenues are withheld by providers of electronic communications services for reasons of fraud or misuse, Member States should ensure that retained service revenues are refunded to the end-users affected by the relevant fraud or misuse where possible.

(255) In accordance with the principle of proportionality, a number of provisions on end-user rights in this Directive should not apply to microenterprises which provide only number-independent interpersonal communications services. According to the case law of the Court of Justice, the definition of small and medium-sized enterprises, which includes microenterprises, is to be interpreted strictly. In order to include only enterprises that are genuinely independent microenterprises, it is necessary to examine the structure of microenterprises which form an economic group, the power of which exceeds the power of a microenterprise, and to ensure that the definition of microenterprise is not circumvented by purely formal means.

(256) The completion of the single market for electronic communications requires the removal of barriers for end-users to have cross-border access to electronic communications services across the Union. Providers of electronic communications to the public should not deny or restrict access or discriminate against end-users on the basis of their nationality, or Member State of residence or of establishment.

Differentiation should, however, be possible on the basis of objectively justifiable differences in costs and risks, not limited to the measures provided for in Regulation (EU) No 531/2012 in respect of abusive or anomalous use of regulated retail roaming services.

(257) Divergent implementation of the rules on end-user protection has created significant internal market barriers affecting both providers of electronic communications services and end-users. Those barriers should be reduced by the applicability of the same rules ensuring a high common level of protection across the Union. A calibrated full harmonisation of the end-user rights covered by this Directive should considerably increase legal certainty for both end-users and providers of electronic communications services, and should significantly lower entry barriers and unnecessary compliance burden stemming from the fragmentation of the rules. Full harmonisation helps to overcome barriers to the functioning of the internal market resulting from such national provisions concerning end-user rights which at the same time protect national providers against competition from other Member States. In order to achieve a high common level of protection, several provisions concerning end-user rights should be reasonably enhanced in this Directive in light of best practices in Member States. Full harmonisation of their rights increases the trust of end-users in the internal market as they benefit from an equally high level of protection when using electronic communications services, not only in their Member State but also while living, working or travelling in other Member States. Full harmonisation should extend only to the subject matters covered by the provisions on end-user rights in this Directive. Therefore, it should not affect national law with respect to those aspects of end-user protection, including some aspects of transparency measures which are not covered by those provisions. For example, measures relating to transparency obligations which are not covered by this Directive should be considered to be compatible with the principle of full harmonisation whereas additional requirements regarding transparency issues covered by this Directive, such as publication of information, should be considered to be incompatible. Moreover, Member States should be able to maintain or introduce national provisions on issues not specifically addressed in this Directive, in particular in order to address newly emerging issues.

(258) Contracts are an important tool for end- users to ensure transparency of information and legal certainty. Most service providers in a competitive environment will conclude contracts with their customers for reasons of commercial desirability. In addition to this Directive, the requirements of existing Union consumer protection law relating to contracts, in particular Council Directive 93/13/EEC[(37)] and Directive 2011/83/EU of the European Parliament and of the Council[(38)], apply to consumer transactions relating to electronic communications networks and services. The inclusion of information requirements in this Directive, which might also be required pursuant to Directive 2011/83/EU, should not lead to duplication of the information within pre-contractual and contractual documents. Relevant information provided in respect of this Directive, including any more prescriptive and more detailed informational requirements, should be considered to fulfil the corresponding requirements pursuant to Directive 2011/83/EU.

(259) Some of those end-user protection provisions which a priori apply only to consumers, namely those on contract information, maximum contract duration and bundles, should benefit not only consumers, but also microenterprises and small enterprises, and not-for-profit organisations as defined in national law. The bargaining position of those categories of enterprises and organisations is comparable to that of consumers and they should therefore benefit from the same level of protection unless they explicitly waive those rights. Obligations on contract information in this Directive, including those of Directive 2011/83/EU that are referred to in this Directive, should apply irrespective of whether any payment is made and of the amount of the payment to be made by the customer. The obligations on contract information, including those contained in Directive 2011/83/EU, should apply automatically to microenterprises, small enterprises and not-for-profit organisations unless they prefer negotiating individualised contract terms with providers of electronic communications services. As opposed to microenterprises, small enterprises and not-for-profit organisations, larger enterprises usually have stronger bargaining power and do, therefore, not depend on the same contractual information requirements as consumers. Other provisions, such as number portability, which are important also for larger enterprises should continue to apply to all end-users. Not-for-profit organisations are legal entities that do not earn a profit for their owners or members. Typically, not-for-profit organisations are charities or other types of public interest organisations. Hence, in light of the comparable situation, it is legitimate to treat such organisations in the same way as microenterprises or small enterprises under this Directive, insofar as end-user rights are concerned.

(260) The specificities of the electronic communications sector require, beyond horizontal contract rules, a limited number of additional end-user protection provisions. End-users should be informed, inter alia, of any quality of service levels offered, conditions for promotions and termination of contracts, applicable tariff plans and tariffs for services subject to particular pricing conditions. That information is relevant for providers of publicly available electronic communications services other than transmission services used for the provision of machine-to-machine services. Without prejudice to the applicable rules on the protection of personal data, a provider of publicly available electronic communications services should not be subject to the obligations on information requirements for contracts where that provider, and affiliated companies or persons, do not receive any remuneration directly or indirectly linked to the provision of electronic communications services, such as where a university gives visitors free access to its Wi-Fi network on campus without receiving any remuneration, whether through payment from the users or through advertising revenues.

(261) In order to enable the end-user to make a well-informed choice, it is essential that the required relevant information is provided prior to the conclusion of the contract and in clear and understandable language and on a durable medium or, where not feasible and without prejudice to the definition of durable medium set out in Directive 2011/83/EU, in a document, made available by the provider and notified to the user, that is easy to download, open and consult on devices commonly used by consumers. In order to facilitate choice, providers should also present a summary of the essential contract terms. In order to facilitate comparability and reduce compliance cost, the Commission

should, after consulting BEREC, adopt a template for such contract summaries. The pre-contractually provided information as well as the summary template should constitute an integral part of the final contract. The contract summary should be concise and easily readable, ideally no longer than the equivalent of one single-sided A4 page or, where a number of different services are bundled into a single contract, the equivalent of up to three single-sided A4 pages.

(262) Following the adoption of Regulation (EU) 2015/2120, the provisions in this Directive regarding information on conditions limiting access to, or the use of, services and applications as well as information on traffic shaping became obsolete and should be repealed.

(263) With respect to terminal equipment, the customer contract should specify any conditions imposed by the provider on the use of the equipment, such as by way of 'SIM-locking' mobile devices, if such conditions are not prohibited under national law, and any charges due on termination of the contract, whether before or on the agreed expiry date, including any cost imposed in order to retain the equipment. Where the end-user chooses to retain terminal equipment bundled at the moment of the contract conclusion, any compensation due should not exceed its pro rata temporis value calculated on the basis of the value at the moment of the contract conclusion, or on the remaining part of the service fee until the end of the contract, whichever amount is smaller. Member States should be able to choose other methods of calculating the compensation rate, where such a rate is equal to or less than that compensation calculated. Any restriction to the usage of terminal equipment on other networks should be lifted, free of charge, by the provider at the latest upon payment of such compensation.

(264) Without prejudice to the substantive obligation on the provider related to security by virtue of this Directive, the contract should specify the type of action the provider might take in the case of security incidents, threats or vulnerabilities. In addition, the contract should also specify any compensation and refund arrangements available if a provider responds inadequately to a security incident, including if a security incident, notified to the provider, takes place due to known software or hardware vulnerabilities, for which patches have been issued by the manufacturer or developer and the service provider has not applied those patches or taken any other appropriate counter-measure.

(265) The availability of transparent, up-to-date and comparable information on offers and services is a key element for consumers in competitive markets where several providers offer services. End-users should be able to compare the prices of various services offered on the market easily on the basis of information published in an easily accessible form. In order to allow them to make price and service comparisons easily, competent authorities in coordination, where relevant, with national regulatory authorities should be able to require from providers of internet access services or publicly available interpersonal communication services greater transparency as regards information, including tariffs, quality of service, conditions on terminal equipment supplied, and other relevant statistics. Any such requirements should take due account of the characteristics of those networks or services. They should also ensure that third parties

have the right to use, without charge, publicly available information published by such undertakings, with a view to providing comparison tools.

(266) End-users are often not aware of the cost of their consumption behaviour or have difficulties in estimating their time or data consumption when using electronic communications services. In order to increase transparency and to allow for better control of their communications budget, it is important to provide end-users with facilities that enable them to track their consumption in a timely manner. In addition, Member States should be able to maintain or introduce provisions on consumption limits protecting end-users against 'bill-shocks', including in relation to premium rate services and other services subject to particular pricing conditions. This allows competent authorities to require information about such prices to be provided prior to providing the service and does not prejudice the possibility of Member States to maintain or introduce general obligations for premium rate services to ensure the effective protection of end-users.

(267) Independent comparison tools, such as websites, are an effective means for end-users to assess the merits of different providers of internet access services and interpersonal communications services, where provided against recurring or consumption-based direct monetary payments, and to obtain impartial information, in particular by comparing prices, tariffs, and quality parameters in one place. Such tools should be operationally independent from service providers and no service provider should be given favourable treatment in search results. Such tools should aim to provide information that is both clear and concise, and complete and comprehensive. They should also aim to include the broadest possible range of offers, in order to give a representative overview and cover a significant part of the market. The information given on such tools should be trustworthy, impartial and transparent. End-users should be informed of the availability of such tools. Member States should ensure that end-users have free access to at least one such tool in their respective territories. Where there is only one tool in a Member State and that tool ceases to operate or ceases to comply with the quality criteria, the Member State should ensure that end-users have access within a reasonable time to another comparison tool at national level.

(268) Independent comparison tools can be operated by private undertakings, or by or on behalf of competent authorities, however they should be operated in accordance with specified quality criteria including the requirement to provide details of their owners, provide accurate and up-to-date information, state the time of the last update, set out clear, objective criteria on which the comparison will be based, and include a broad range of offers covering a significant part of the market. Member States should be able to determine how often comparison tools are required to review and update the information they provide to end-users, taking into account the frequency with which providers of internet access services and of publicly available interpersonal communications services, generally update their tariff and quality information.

(269) In order to address public interest issues with respect to the use of internet access services and publicly available number-based interpersonal communications services and to encourage protection of the rights and freedoms of others, Member States should

be able to produce and disseminate or have disseminated, with the aid of providers of such services, public-interest information related to the use of such services. It should be possible for such information to include public-interest information regarding the most common infringements and their legal consequences, for instance regarding copyright infringement, other unlawful uses and the dissemination of harmful content, and advice and means of protection against risks to personal security, for example those arising from disclosure of personal information in certain circumstances, as well as risks to privacy and personal data, and the availability of easy-to-use and configurable software or software options allowing protection for children or vulnerable persons. The information could be coordinated by way of the cooperation procedure established in this Directive. Such public-interest information should be updated where necessary and should be presented in easily comprehensible formats, as determined by each Member State, and on national public authority websites. Member States should be able to oblige providers of internet access services and publicly available number-based interpersonal communications services to disseminate this standardised information to all of their customers in a manner considered to be appropriate by the national public authorities. Dissemination of such information should, however, not impose an excessive burden on providers. If it does so, Member States should require such dissemination by the means used by providers in communications with end-users made in the ordinary course of business.

(270) In the absence of relevant rules of Union law, content, applications and services are considered to be lawful or harmful in accordance with national substantive and procedural law. It is a task for the Member States, not for providers of electronic communications networks or services, to decide, in accordance with due process, whether content, applications or services are lawful or harmful. This Directive and Directive 2002/58/EC are without prejudice to Directive 2000/31/EC, which, inter alia, contains a 'mere conduit' rule for intermediary service providers, as defined therein.

(271) National regulatory authorities in coordination with other competent authorities, or where relevant, other competent authorities in co-ordination with national regulatory authorities should be empowered to monitor the quality of services and to collect systematically information on the quality of services offered by providers of internet access services and of publicly available interpersonal communications services, to the extent that the latter are able to offer minimum levels of service quality either through control of at least some elements of the network or by virtue of a service level agreement to that end, including the quality related to the provision of services to end-users with disabilities. That information should be collected on the basis of criteria which allow comparability between service providers and between Member States. Providers of such electronic communications services, operating in a competitive environment, are likely to make adequate and up-to-date information on their services publicly available for reasons of commercial advantage. National regulatory authorities in coordination with other competent authorities, or where relevant, other competent authorities in co-ordination with national regulatory authorities should nonetheless be able to require publication of such information where it is demonstrated that such information is not effectively available to the public. Where the quality of services of publicly

available interpersonal communication services depends on any external factors, such as control of signal transmission or network connectivity, national regulatory authorities in coordination with other competent authorities should be able to require providers of such services to inform their consumers accordingly.

(272) National regulatory authorities in coordination with other competent authorities should also set out the measurement methods to be applied by the service providers in order to improve the comparability of the data provided. In order to facilitate comparability across the Union and to reduce compliance cost, BEREC should adopt guidelines on relevant quality of service parameters which national regulatory authorities in coordination with other competent authorities should take into utmost account.

(273) In order to take full advantage of the competitive environment, consumers should be able to make informed choices and to change providers when it is in their best interest to do so. It is essential to ensure that they are able to do so without being hindered by legal, technical or practical obstacles, including contractual conditions, procedures and charges. That does not preclude providers from setting reasonable minimum contractual periods of up to 24 months in consumer contracts. However, Member States should have the possibility to maintain or introduce provisions for a shorter maximum duration and to permit consumers to change tariff plans or terminate the contract within the contract period without incurring additional costs in light of national conditions, such as levels of competition and stability of network investments. Independently from the electronic communications service contract, consumers might prefer and benefit from a longer reimbursement period for physical connections. Such consumer commitments can be an important factor in facilitating deployment of very high capacity networks up to or very close to end-user premises, including through demand aggregation schemes which enable network investors to reduce initial take-up risks. However, the rights of consumers to switch between providers of electronic communications services, as established in this Directive, should not be restricted by such reimbursement periods in contracts on physical connections and such contracts should not cover terminal or internet access equipment, such as handsets, routers or modems. Member States should ensure the equal treatment of entities, including operators, financing the deployment of a very high capacity physical connection to the premises of an end-user, including where such financing is by way of an instalment contract.

(274) Automatic prolongation of contracts for electronic communications services is also possible. In those cases, end-users should be able to terminate their contract without incurring any costs after the expiry of the contract term.

(275) Any changes to the contractual conditions proposed by providers of publicly available electronic communications services other than number-independent interpersonal communications services, which are not to the benefit of the end-user, for example in relation to charges, tariffs, data volume limitations, data speeds, coverage, or the processing of personal data, should give rise to the right of the end-user to terminate the contract without incurring any costs, even if they are combined with some beneficial changes. Any change to the contractual conditions by the provider should therefore entitle the end-user to terminate the contract unless each change is in itself beneficial to

the end-user, or the changes are of a purely administrative nature, such as a change in the provider's address, and have no negative effect on the end-user, or the changes are strictly imposed by legislative or regulatory changes, such as new contract information requirements imposed by Union or national law. Whether a change is exclusively to the benefit of the end-user should be assessed on the basis of objective criteria. The end-user's right to terminate the contract should be excluded only if the provider is able to demonstrate that all contract changes are exclusively to the benefit of the end-user or are of a purely administrative nature without any negative effect on the end-user.

(276) End-users should be notified of any changes to the contractual conditions by means of a durable medium. End-users other than consumers, microenterprises or small enterprises, or not-for-profit organisations should not benefit from the termination rights in the case of contract modification, insofar as transmission services used for machine-to-machine services are concerned. Member States should be able to provide for specific end-user protections regarding contract termination where the end-users change their place of residence. The provisions on contract termination should be without prejudice to other provisions of Union or national law concerning the grounds on which contracts can be terminated or on which contractual terms and conditions can be changed by the service provider or by the end-user.

(277) The possibility of switching between providers is key for effective competition in a competitive environment. The availability of transparent, accurate and timely information on switching should increase the end-users' confidence in switching and make them more willing to engage actively in the competitive process. Service providers should ensure continuity of service so that end-users are able to switch providers without being hindered by the risk of a loss of service and, where technically possible, allow for switching on the date requested by end-users.

(278) Number portability is a key facilitator of consumer choice and effective competition in competitive electronic communications markets. End-users who so request should be able to retain their numbers independently of the provider of service and for a limited time between the switching of providers of service. The provision of this facility between connections to the public telephone network at fixed and non-fixed locations is not covered by this Directive. However, Member States should be able to apply provisions for porting numbers between networks providing services at a fixed location and mobile networks.

(279) The impact of number portability is considerably strengthened when there is transparent tariff information, both for end-users who port their numbers and for end-users who call those who have ported their numbers. National regulatory authorities should, where feasible, facilitate appropriate tariff transparency as part of the implementation of number portability.

(280) When ensuring that pricing for interconnection related to the provision of number portability is cost-oriented, national regulatory authorities should also be able to take account of prices available in comparable markets.

(281) Number portability is a key facilitator of consumer choice and effective competition in competitive markets for electronic communications and should be implemented with

the minimum delay, so that the number is functionally activated within one working day and the end-user does not experience a loss of service lasting longer than one working day from the agreed date. The right to port the number should be attributed to the end-user who has the relevant (pre- or post-paid) contract with the provider. In order to facilitate a one-stop-shop enabling a seamless switching experience for end- users, the switching process should be led by the receiving provider of electronic communications to the public. National regulatory or, where relevant, other competent authorities should be able to prescribe the global process of the switching and of the porting of numbers, taking into account national provisions on contracts and technological developments. This should include, where available, a requirement for the porting to be completed though over-the-air provisioning, unless an end-user requests otherwise. Experience in certain Member States has shown that there is a risk of end-users being switched to another provider without having given their consent. While that is a matter that should primarily be addressed by law enforcement authorities, Member States should be able to impose such minimum proportionate measures regarding the switching process, including appropriate penalties, as are necessary to minimise such risks, and to ensure that end-users are protected throughout the switching process without making the process less attractive for them. The right to port numbers should not be restricted by contractual conditions.

(282) In order to ensure that switching and porting take place within the time-limits provided for in this Directive, Member States should provide for the compensation of end-users by providers in an easy and timely manner where an agreement between a provider and an end-user is not respected. Such measures should be proportionate to the length of the delay in complying with the agreement. End-users should at least be compensated for delays exceeding one working day in activation of service, porting of a number, or loss of service, and where providers miss agreed service or installation appointments. Additional compensation could also be in the form of an automatic reduction of the remuneration where the transferring provider is to continue providing its services until the services of the receiving provider are activated.

(283) Bundles comprising at least either an internet access service or a publicly available number-based interpersonal communications service, as well as other services, such as publicly available number-independent interpersonal communications services, linear broadcasting and machine-to-machine services, or terminal equipment, have become increasingly widespread and are an important element of competition. For the purposes of this Directive, a bundle should be considered to exist in situations where the elements of the bundle are provided or sold by the same provider under the same or a closely related or linked contract. While bundles often bring about benefits for consumers, they can make switching more difficult or costly and raise risks of contractual 'lock-in'. Where different services and terminal equipment within a bundle are subject to divergent rules on contract termination and switching or on contractual commitments regarding the acquisition of terminal equipment, consumers are effectively hampered in their rights under this Directive to switch to competitive offers for the entire bundle or parts of it. Certain essential provisions of this Directive regarding contract summary information, transparency, contract duration and termination and switching

should, therefore, apply to all elements of a bundle, including terminal equipment, other services such as digital content or digital services, and electronic communications services which are not directly covered by the scope of those provisions. All end-user obligations applicable under this Directive to a given electronic communications service when provided or sold as a stand-alone service should also be applicable when it is part of a bundle with at least an internet access service or a publicly available number-based interpersonal communications service. Other contractual issues, such as the remedies applicable in the event of non-conformity with the contract, should be governed by the rules applicable to the respective element of the bundle, for instance by the rules of contracts for the sales of goods or for the supply of digital content. However, a right to terminate any element of a bundle comprising at least an internet access service or a publicly available number-based interpersonal communications service before the end of the agreed contract term because of a lack of conformity or a failure to supply should give a consumer the right to terminate all elements of the bundle. Also, in order to maintain their capacity to switch easily providers, consumers should not be locked in with a provider by means of a contractual de facto extension of the initial contract period.

(284) Providers of number-based interpersonal communications services have an obligation to provide access to emergency services through emergency communications. In exceptional circumstances, namely due to a lack of technical feasibility, they might not be able to provide access to emergency services or caller location, or to both. In such cases, they should inform their customers adequately in the contract. Such providers should provide their customers with clear and transparent information in the initial contract and update it in the event of any change in the provision of access to emergency services, for example in invoices. That information should include any limitations on territorial coverage, on the basis of the planned technical operating parameters of the communications service and the available infrastructure. Where the service is not provided over a connection which is managed to give a specified quality of service, the information should also include the level of reliability of the access and of caller location information compared to a service that is provided over such a connection, taking into account current technology and quality standards, as well as any quality of service parameters specified under this Directive.

(285) End-users should be able to access emergency services through emergency communications free of charge and without having to use any means of payment, from any device which enables number-based interpersonal communications services, including when using roaming services in a Member State. Emergency communications are a means of communication that includes not only voice communications services, but also SMS, messaging, video or other types of communications, for example real time text, total conversation and relay services. Member States, taking into account the capabilities and technical equipment of the PSAPs, should be able to determine which number-based interpersonal communications services are appropriate for emergency services, including the possibility to limit those options to voice communications services and their equivalent for end-users with disabilities, or to add additional options as agreed with national PSAPs. Emergency communication can be triggered on behalf

of a person by an in-vehicle emergency call or an eCall as defined in Regulation (EU) 2015/758.

(286) Member States should ensure that providers of number-based interpersonal communications services provide reliable and accurate access to emergency services, taking into account national specifications and criteria and the capabilities of national PSAPs. Member States should consider the PSAP's ability to handle emergency communications in more than one language. Where the number-based interpersonal communications service is not provided over a connection which is managed to give a specified quality of service, the service provider might not be able to ensure that emergency calls made through their service are routed to the most appropriate PSAP with the same reliability. For such network-independent providers, namely providers which are not integrated with a provider of public electronic communications networks, providing caller location information may not always be technically feasible. Member States should ensure that standards ensuring accurate and reliable routing and connection to the emergency services are implemented as soon as possible in order to allow network-independent providers of number-based interpersonal communications services to fulfil the obligations related to access to emergency services and caller location information provision at a level comparable to that required of other providers of such communications services. Where such standards and the related PSAP systems have not been implemented, network-independent number-based interpersonal communications services should not be required to provide access to emergency services except in a manner that is technically feasible or economically viable. This may, for example, include the designation by a Member State of a single, central PSAP for receiving emergency communications. Nonetheless, such providers should inform end-users when access to the single European emergency number '112' or to caller location information is not supported.

(287) In order to improve the reporting and performance measurement by Member States with respect to the answering and handling of emergency calls, the Commission should, every two years, report to the European Parliament and to the Council on the effectiveness of the implementation of the single European emergency number '112'.

(288) Member States should take specific measures to ensure that emergency services, including the single European emergency number '112', are equally accessible to end-users with disabilities, in particular deaf, hearing-impaired, speech-impaired and deaf-blind end-users and in accordance with Union law harmonising accessibility requirements for products and services. This could involve the provision of special terminal devices for end-users with disabilities when other ways of communication are not suitable for them.

(289) It is important to increase awareness of the single European emergency number '112' in order to improve the level of protection and security of citizens travelling in the Union. To that end, citizens should be made fully aware, when travelling in any Member State, in particular through information provided in international bus terminals, train stations, ports or airports and in telephone directories, end-user and billing material, that the single European emergency number '112' can be used as a single emergency number

throughout the Union. This is primarily the responsibility of the Member States, but the Commission should continue both to support and to supplement initiatives of the Member States to heighten awareness of the single European emergency number '112' and periodically to evaluate the public's awareness of it.

(290) Caller location information, which applies to all emergency communications, improves the level of protection and the security of end-users and assists the emergency services in the discharge of their duties, provided that the transfer of emergency communication and associated data to the emergency services concerned is guaranteed by the national system of PSAPs. The reception and use of caller location information, which includes both network-based location information and where available, enhanced handset caller location information, should comply with relevant Union law on the processing of personal data and security measures. Undertakings that provide network-based location should make caller location information available to emergency services as soon as the call reaches that service, independently of the technology used. However, handset-based location technologies have proven to be significantly more accurate and cost effective due to the availability of data provided by the European Geostationary Navigation Overlay Service and Galileo Satellite system and other Global Navigation Satellite Systems and Wi-Fi data. Therefore, handset-derived caller location information should complement network-based location information even if the handset-derived location becomes available only after the emergency communication is set up. Member States should ensure that, where available, the handset-derived caller location information is made available to the most appropriate PSAP. This might not be always possible, for example when the location is not available on the handset or through the interpersonal communications service used, or when it is not technically feasible to obtain that information. Furthermore, Member States should ensure that the PSAPs are able to retrieve and manage the caller location information available, where feasible. The establishment and transmission of caller location information should be free of charge for both the end-user and the authority handling the emergency communication irrespective of the means of establishment, for example through the handset or the network, or the means of transmission, for example through voice channel, SMS or IP-based.

(291) In order to respond to technological developments concerning accurate caller location information, equivalent access for end-users with disabilities and call routing to the most appropriate PSAP, the Commission should be empowered to adopt by means of a delegated act measures necessary to ensure the compatibility, interoperability, quality, reliability and continuity of emergency communications in the Union, such as functional provisions determining the role of various parties within the communications chain, for example number-based interpersonal communications service providers, network operators and PSAPs, as well as technical provisions determining the technical means to fulfil the functional provisions. Such measures should be without prejudice to the organisation of emergency services of Member States.

(292) A citizen in one Member State who needs to contact the emergency services in another Member State cannot do so because the emergency services may not have any contact information for emergency services in other Member States. A Union-

wide, secure database of numbers for a lead emergency service in each country should therefore be introduced. To that end, BEREC should maintain a secure database of E.164 numbers of Member State emergency service numbers, if such a database is not maintained by another organisation, in order to ensure that the emergency services in one Member State can be contacted by the emergency services in another.

(293) Diverging national law has developed in relation to the transmission by electronic communications services of public warnings regarding imminent or developing major emergencies and disasters. In order to approximate law in that area, this Directive should therefore provide that, when public warning systems are in place, public warnings should be transmitted by providers of mobile number-based interpersonal communication services to all end-users concerned. The end-users concerned should be considered to be those who are located in the geographic areas potentially being affected by imminent or developing major emergencies and disasters during the warning period, as determined by the competent authorities.

(294) Where the effective reach of all end-users concerned, independently of their place or Member State of residence, is ensured and fulfils the highest level of data security, Member States should be able to provide for the transmission of public warnings by publicly available electronic communications services other than mobile number-based interpersonal communications services and other than transmission services used for broadcasting or by mobile application transmitted via internet access services. In order to inform end-users entering a Member State of the existence of such a public warning system, that Member State should ensure that those end-users receive, automatically by means of SMS, without undue delay and free of charge, easily understandable information on how to receive public warnings, including by means of mobile terminal equipment not enabled for internet access services. Public warnings other than those relying on mobile number-based interpersonal communications services should be transmitted to end-users in an easily receivable manner. Where a public warning system relies on an application, it should not require end-users to log in or register with the authorities or the application provider. End-users' location data should be used in accordance with Directive 2002/58/EC. The transmission of public warnings should be free of charge for end-users. In its review of the implementation of this Directive, the Commission could also assess whether it is possible in accordance with Union law, and feasible to set up a single Union-wide public warning system in order to alert the public in the event of an imminent or developing disaster or major state of emergency across different Member States.

(295) Member States should be able to determine if proposals for alternative systems, other than through mobile number-based interpersonal communication services, are truly equivalent to such services, taking utmost account of the corresponding BEREC guidelines. Such guidelines should be developed after consulting national authorities in charge of PSAPs in order to ensure that emergency experts have a role in their development and that there is a common understanding between different Member State authorities as to what is needed to ensure full implementation of such public warning systems within the Member States while ensuring that the citizens of the Union are effectively protected while travelling in another Member State.

(296) In line with the objectives of the Charter and the obligations enshrined in the United Nations Convention on the Rights of Persons with Disabilities, the regulatory framework should ensure that all end-users, including end-users with disabilities, older people, and users with special social needs, have easy and equivalent access to affordable high quality services regardless of their place of residence within the Union. Declaration 22 annexed to the final Act of Amsterdam provides that the institutions of the Union are to take account of the needs of persons with disabilities in drawing up measures under Article 114 TFEU.

(297) In order to ensure that end-users with disabilities benefit from competition and the choice of service providers enjoyed by the majority of end-users, competent authorities should specify, where appropriate and in light of national conditions, and after consulting end-users with disabilities, consumer protection requirements for end-users with disabilities to be met by providers of publicly available electronic communications services. Such requirements can include, in particular, that providers ensure that end-users with disabilities take advantage of their services on equivalent terms and conditions, including prices, tariffs and quality, as those offered to their other end-users, irrespective of any additional costs incurred by those providers. Other requirements can relate to wholesale arrangements between providers. In order to avoid creating an excessive burden on service providers competent authorities should verify, whether the objectives of equivalent access and choice can be achieved without such measures.

(298) In addition to Union law harmonising accessibility requirements for products and services, this Directive sets out new enhanced affordability and availability requirements on related terminal equipment and specific equipment and specific services for end-users with disabilities. Therefore, the corresponding obligation in Directive 2002/22/EC that required Member States to encourage the availability of terminal equipment for end-users with disabilities has become obsolete and should be repealed.

(299) Effective competition has developed in the provision of directory enquiry services and directories pursuant, inter alia, to Article 5 of Commission Directive 2002/77/EC[(39)]. In order to maintain that effective competition, all providers of number-based interpersonal communications services which attribute numbers from a numbering plan to their end-users should continue to be obliged to make relevant information available in a fair, cost-oriented and non-discriminatory manner.

(300) End-users should be informed about their right to determine whether they want to be included in a directory. Providers of number-based interpersonal communications services should respect the end-users' decision when making data available to directory service providers. Article 12 of Directive 2002/58/EC ensures the end-users' right to privacy with regard to the inclusion of their personal information in a public directory.

(301) Measures at wholesale level ensuring the inclusion of end-user data in databases should comply with the safeguards for the protection of personal data under Regulation (EU) 2016/679 and Article 12 of Directive 2002/58/EC. The cost-oriented supply of that data to service providers, with the possibility for Member States to establish a centralised mechanism for providing comprehensive aggregated information to

directory providers, and the provision of network access under reasonable and transparent conditions, should be put in place in order to ensure that end-users benefit fully from competition, which has largely allowed the enabling of the removal of retail regulation from these services and the provision of offers of directory services under reasonable and transparent conditions.

(302) Following the abolition of the universal service obligation for directory services and given the existence of a functioning market for such services, the right to access directory enquiry services is no longer necessary. However, the national regulatory authorities should still be able to impose obligations and conditions on undertakings that control access to end-users in order to maintain access and competition in that market.

(303) End-users should be able to enjoy a guarantee of interoperability in respect of all equipment sold in the Union for the reception of radio in new vehicles of category M and of digital television. Member States should be able to require minimum harmonised standards in respect of such equipment. Such standards could be adapted from time to time in light of technological and market developments.

(304) Where Member States decide to adopt measures in accordance with Directive (EU) 2015/1535 for the interoperability of consumer radio receivers, they should be capable of receiving and reproducing radio services provided via digital terrestrial radio broadcasting or via IP networks, in order to ensure that interoperability is maintained. This may also improve public safety, by enabling users to rely on a wider set of technologies for accessing and receiving emergency information in the Member States.

(305) It is desirable to enable consumers to achieve the fullest connectivity possible to digital television sets. Interoperability is an evolving concept in dynamic markets. Standardisation bodies should do their utmost to ensure that appropriate standards evolve along with the technologies concerned. It is likewise important to ensure that connectors are available on digital television sets that are capable of passing all the necessary elements of a digital signal, including the audio and video streams, conditional access information, service information, API information and copy protection information. This Directive should therefore ensure that the functionality associated to or implemented in connectors is not limited by network operators, service providers or equipment manufacturers and continues to evolve in line with technological developments. For display and presentation of connected television services, the realisation of a common standard through a market-driven mechanism is recognised as a consumer benefit. Member States and the Commission should be able to take policy initiatives, consistent with the Treaties, to encourage this development.

(306) The provisions on interoperability of consumer radio and television equipment do not prevent car radio receivers in new vehicles of category M from being capable of receiving and reproducing radio services provided via analogue terrestrial radio broadcasting and those provisions do not prevent Member States from imposing obligations to ensure that digital radio receivers are capable of receiving and reproducing analogue terrestrial radio broadcasts.

(307) Without prejudice to Union law, this Directive does not prevent Member States from adopting technical regulations related to digital terrestrial television equipment, to

prepare the migration of consumers to new terrestrial broadcasting standards, and avoid the supply of equipment that would not be compliant with the standards to be rolled out.

(308) Member States should be able to lay down proportionate 'must carry' obligations on undertakings under their jurisdiction, in the interest of legitimate public policy considerations, but such obligations should only be imposed where they are necessary to meet general interest objectives clearly defined by Member States in accordance with Union law and should be proportionate and transparent. It should be possible to apply 'must carry' obligations to specified radio and television broadcast channels and complementary services supplied by a specified media service provider. Obligations imposed by Member States should be reasonable, that is they should be proportionate and transparent in light of clearly defined general interest objectives. Member States should provide an objective justification for the 'must carry' obligations that they impose in their national law in order to ensure that such obligations are transparent, proportionate and clearly defined. The obligations should be designed in a way which provides sufficient incentives for efficient investment in infrastructure.

(309) 'Must carry' obligations should be subject to periodic review at least every five years in order to keep them up-to-date with technological and market evolution and in order to ensure that they continue to be proportionate to the objectives to be achieved. Such obligations could, where appropriate, entail a provision for proportionate remuneration which should be set out in national law. Where that is the case, national law should also determine the applicable methodology for calculating appropriate remuneration. That methodology should avoid inconsistency with access remedies that may be imposed by national regulatory authorities on providers of transmission services used for broadcasting which have been designated as having significant market power. However, where a fixed-term contract signed before 20 December 2018 provides for a different methodology, it should be possible to continue to apply that methodology for the duration of the contract. In the absence of a national provision on remuneration, providers of radio or television broadcast channels and providers of electronic communications networks used for the transmission of those radio or television broadcast channels should be able to agree contractually on a proportionate remuneration.

(310) Electronic communications networks and services used for the distribution of radio or television broadcasts to the public include cable, IPTV, satellite and terrestrial broadcasting networks. They might also include other networks to the extent that a significant number of end-users use such networks as their principal means to receive radio and television broadcasts. 'Must carry' obligations related to analogue television broadcast transmissions should be considered only where the lack of such an obligation would cause significant disruption for a significant number of end-users or where there are no other means of transmission for specified television broadcast channels. 'Must carry' obligations can include the transmission of services specifically designed to enable equivalent access by end-users with disabilities. Accordingly complementary services include services designed to improve accessibility for end-users with disabilities, such as videotext, subtitling for end-users who are deaf or hard of hearing, audio description, spoken subtitles and sign language interpretation, and

could include access to the related raw-data where necessary. In light of the growing provision and reception of connected television services and the continued importance of EPGs for end-user choice the transmission of programme-related data necessary to support connected television and EPG functionalities can be included in 'must carry' obligations. It should be possible for such programme-related data to include information about the programme content and how to access it, but not the programme content itself.

(311) Calling line identification facilities are normally available on modern telephone exchanges and can therefore increasingly be provided at little or no expense. Member States are not required to impose obligations to provide these facilities when they are already available. Directive 2002/58/EC safeguards the privacy of users with regard to itemised billing, by giving them the means to protect their right to privacy when calling line identification is implemented. The development of those services on a pan-European basis would benefit consumers and is encouraged by this Directive. A common practice by providers of internet access services is to provide customers with an e-mail address using their commercial name or trade mark. In order to ensure end-users do not suffer lock-in effects related to the risk of losing access to e-mails when changing internet access services, Member States should be able to impose obligations on providers of such services, on request, either to provide access to their e-mails, or to transfer e-mails sent to the relevant e-mail account(s). The facility should be provided free of charge and for a duration that is considered to be appropriate by the national regulatory authority.

(312) The publication of information by Member States will ensure that market players and potential market entrants understand their rights and obligations, and know where to find the relevant detailed information. Publication in the national gazette helps interested parties in other Member States to find the relevant information.

(313) In order to ensure that the pan-European electronic communications market is effective and efficient, the Commission should monitor and publish information on charges which contribute to determining prices to end-users.

(314) In order to determine the correct application of Union law, the Commission needs to know which undertakings have been designated as having significant market power and which obligations have been placed upon market players by national regulatory authorities. In addition to publication of that information at national level, it is therefore necessary for Member States to submit that information to the Commission. Where Member States are required to send information to the Commission, they should be able to do so by electronic means, subject to agreement on appropriate authentication procedures.

(315) In order to take account of market, social and technological developments, including evolution of technical standards, to manage the risks posed to security of networks and services and to ensure effective access to emergency services through emergency communications, the power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission in respect of setting a single maximum Union-wide voice termination rate in fixed and mobile markets; adopting measures related to

emergency communications in the Union; and adapting the annexes to this Directive. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making[(40)]. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

(316) In order to ensure uniform conditions for the implementation of this Directive, implementing powers should be conferred on the Commission to adopt decisions to resolve cross-border harmful interference between Member States; to identify a harmonised or coordinated approach for the purpose of addressing inconsistent implementation of general regulatory approaches by national regulatory authorities on the regulation of electronic communications markets, as well as numbering, including number ranges, portability of numbers and identifiers, number and address translation systems, and access to emergency services through the single European emergency number '112'; to make the implementation of standards or specifications compulsory, or remove standards or specifications from the compulsory part of the list of standards; to adopt the technical and organisational measures to appropriately manage the risks posed to security of networks and services, as well as the circumstances, format and procedures applicable to notification of security incidents; to specify relevant details relating to tradable individual rights publicly available in a standardised electronic format when the rights of use for radio spectrum are created to specify the physical and technical characteristics of small-area wireless access points; to authorise or prevent a national regulatory authority from imposing on undertakings designated as having significant market power certain obligations for access or interconnection; to harmonise specific numbers or numbering ranges to address unmet cross-border or pan-European demand for numbering resources; and to specify the contract summary template to be provided to consumers. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council[(41)].

(317) Finally, the Commission should be able to adopt, as necessary, having taken utmost account of the opinion of BEREC, recommendations in relation to the identification of the relevant product and service markets, the notifications under the procedure for consolidating the internal market and the harmonised application of the provisions of the regulatory framework.

(318) The Commission should review the functioning of this Directive periodically, in particular with a view to determining the need for amendments in light of changing technological or market conditions.

(319) In carrying out its review of the functioning of this Directive, the Commission should assess whether, in light of developments in the market and with regard to both competition and consumer protection, there is a continued need for the provisions on sector-specific ex ante regulation or whether those provisions should be amended or

repealed. As this Directive introduces novel approaches to the regulation of electronic communications sectors, such as the possibility to extend the application of symmetric obligations beyond the first concentration or distribution point and the regulatory treatment of co-investments, a particular regard should be given in assessing their functioning.

(320) Future technological and market developments, in particular changes in the use of different electronic communications services and their ability to ensure effective access to emergency services, might jeopardise the achievement of the objectives of this Directive on end-users' rights. BEREC should therefore monitor those developments in Member States and regularly publish an opinion including an assessment of the impact of such developments on the application in practice of the provisions of this Directive relating to end-users. The Commission, taking outmost account of BEREC's opinion, should publish a report and submit a legislative proposal where it considers it to be necessary to ensure that the objectives of this Directive are achieved.

(321) Directives 2002/19/EC, 2002/20/EC, 2002/21/EC, 2002/22/EC and Article 5 of Decision No 243/2012/EU should be repealed.

(322) The Commission should monitor the transition from the existing framework to the new framework.

(323) Since the objective of this Directive, namely achieving a harmonised and simplified framework for the regulation of electronic communications networks, electronic communications services, associated facilities and associated services, of the conditions for the authorisation of networks and services, of radio spectrum use and of numbering resources, of access to and interconnection of electronic communications networks and associated facilities and of end-user protection cannot be sufficiently achieved by the Member States but can rather, by reason of the scale and effects of the action, be better achieved at Union level, the Union may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve that objective.

(324) In accordance with the Joint Political Declaration of 28 September 2011 of Member States and the Commission on explanatory documents[(42)], Member States have undertaken to accompany, in justified cases, the notification of their transposition measures with one or more documents explaining the relationship between the components of a directive and the corresponding parts of national transposition instruments. With regard to this Directive, the legislator considers the transmission of such documents to be justified.

(325) The obligation to transpose this Directive into national law should be confined to those provisions which represent a substantive amendment as compared to the repealed Directives. The obligation to transpose the provisions which are unchanged arises under the repealed Directives.

(326) This Directive should be without prejudice to the obligations of the Member States relating to the time-limits for the transposition into national law and the dates of application of the Directives set out in Annex XII, Part B,

HAVE ADOPTED THIS DIRECTIVE:

(**1**) OJ C 125, 21.4.2017, p. 56.

(**2**) OJ C 207, 30.6.2017, p. 87.

(**3**) Position of the European Parliament of 14 November 2018 (not yet published in the Official Journal) and decision of the Council of 4 December 2018.

(**4**) Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive) (OJ L 108, 24.4.2002, p. 7).

(**5**) Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive) (OJ L 108, 24.4.2002, p. 21).

(**6**) Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (OJ L 108, 24.4.2002, p. 33)

(**7**) Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive) (OJ L 108, 24.4.2002, p. 51).

(**8**) Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications) (OJ L 201, 31.7.2002, p. 37).

(**9**) Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Office (OJ L 337, 18.12.2009, p. 1).

(**10**) OJ C 77, 28.3.2002, p. 1.

(**11**) Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) (OJ L 95, 15.4.2010, p. 1).

(**12**) Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (OJ L 153, 22.5.2014, p. 62).

(**13**) Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services (OJ L 241, 17.9.2015, p. 1).

(**14**) Regulation (EU) 2015/2120 of the European Parliament and of the Council of 25 November 2015 laying down measures concerning open internet access and amending Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services and Regulation (EU) No 531/2012 on roaming on public mobile communications networks within the Union (OJ L 310, 26.11.2015, p. 1).

(**15**) Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1).

(**16**) Judgment of the Court of Justice of 26 April 1988, Bond van Adverteerders and Others v The Netherlands State, C-352/85, ECLI: EU:C:1988:196.

(**17**) Regulation (EU) 2015/758 of the European Parliament and of the Council of 29 April 2015 concerning type-approval requirements for the deployment of the eCall in-vehicle system based on the 112 service and amending Directive 2007/46/EC (OJ L 123, 19.5.2015, p 77).

(**18**) Commission Regulation (EU) No 305/2013 of 26 November 2012 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the harmonised provision for an interoperable EU-wide eCall (OJ L 91, 3.4.2013, p. 1).

(**19**) Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme (OJ L 81, 21.3.2012, p. 7).

(**20**) Regulation (EU) No 531/2012 of the European Parliament and of the Council of 13 June 2012 on roaming on public mobile communications networks within the Union (OJ L 172, 30.6.2012, p. 10).

(**21**) in particular the judgment of the Court of Justice of 16 October 2012, European Commission v Republic of Austria, Case C-614/10, ECLI:EU:C:2012:631.

(**22**) Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks (OJ L 155, 23.5.2014, p. 1).

(**23**) Regulation (EC) No 593/2008 of the European Parliament and of the Council of 17 June 2008 on the law applicable to contractual obligations (Rome I) (OJ L 177, 4.7.2008, p. 6).

(**24**) Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) (OJ L 108, 24.4.2002, p. 1).

(**25**) Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information (OJ L 345, 31.12.2003, p. 90).

(**26**) Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (OJ L 124, 20.5.2003, p. 36).

(**27**) Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR) (OJ L 165, 18.6.2013, p. 63).

(**28**) Commission Decision 2002/622/EC of 26 July 2002 establishing a Radio Spectrum Policy Group (OJ L 198, 27.7.2002, p. 49).

(**29**) Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (OJ L 96, 29.3.2014, p. 79).

(**30**) Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits (OJ L 96, 29.3.2014, p. 357).

(**31**) Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union (OJ L 194, 19.7.2016, p. 1).

(**32**) Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (OJ L 199, 30.7.1999, p. 59).

(**33**) Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 on the use of the 470-790 MHz frequency band in the Union (OJ L 138, 25.5.2017, p. 131).

(**34**) Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce) (OJ L 178, 17.7.2000, p. 1).

(**35**) Commission Recommendation 2005/698/EC of 19 September 2005 on accounting separation and cost accounting systems under the regulatory framework for electronic communications (OJ L 266, 11.10.2005, p. 64).

(**36**) Commission Recommendation 2013/466/EU of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (OJ L 251, 21.9.2013, p. 13).

(**37**) Council Directive 93/13/EEC of 5 April 1993 on unfair terms in consumer contracts (OJ L 95, 21.4.1993, p. 29).

(**38**) Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council (OJ L 304, 22.11.2011, p. 64).

(**39**) Commission Directive 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services (OJ L 249, 17.9.2002, p. 21).

(**40**) OJ L 123, 12.5.2016, p. 1.

(**41**) Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

(**42**) OJ C 369, 17.12.2011, p. 14.