

Telefónica's response on the draft RSPG Opinion on Licensed Shared Access

Executive Summary / Key messages

1. *Telefónica considers that exclusive access should be the primary means to access spectrum, with shared access seen as a complementary tool.*
2. *Licensed Shared Access as defined by the RSPG is too broad in order to address the primary industry objectives and challenges.*
3. *We need to manage how spectrum sharing is introduced in the regulatory framework in order to avoid negative impacts on investment.*
4. *NRA's should encourage sharing under commercial agreements whilst protecting and avoiding destabilizing operators' investments*
5. *A market driven approach to spectrum sharing will work better than a regulatory driven approach based on heavy, burdensome regulatory concepts.*
6. *Spectrum sharing should be used as a spectrum efficiency tool rather than an industrial policy tool.*
7. *It's critical that the shared access regulatory debate has no impact on on-going work under the WRC 15 process, which is the mobile industry's primary mechanism to achieve more spectrum.*
8. *Interference management is still a top priority and should create confidence and certainty.*
9. *The Commission's Inventory study conclusions show that Government spectrum should be the main focus for more efficient spectrum use. Mobile bands by contrast have highly efficient use.*
10. *Spectrum sharing technologies remain largely unproven in full scale deployments with no proven business case that could achieve economies of scale to develop an ecosystem.*

Background

Telefónica welcomes the RSPG Opinion on Licensed Shared Access consultation as a useful, transparent and positive contribution to the development of European spectrum management policy. Nevertheless we consider there are still several relevant uncertainties that should be clarified. It is clear to us that further work and studies will be needed to assess challenges, uncertainties and policy guidance in more detail.

Key Messages

1. Telefónica considers that exclusive access should be the primary means to access spectrum, with shared access seen as a complementary tool.

Exclusive access licensing has well known associated benefits such as good interference management, a high degree of the market certainty necessary to create adequate investment and innovation incentives; greater standardization and economies of scale critical for business development...etc. Neither investment nor economies of scale could be created with a spectrum policy based on shared access rather than exclusive access. Additionally, exclusive licensing has already demonstrated the ability to develop innovative services such as mobile Internet, among others services, while creating positive effects on investment, job creation and social welfare.

Sometimes it's argued that exclusive access to spectrum is synonymous with low spectrum usage or inefficiency, but the mobile industry is a clear example of high technical and economic efficient use of spectrum. The Commission's "Inventory and review of spectrum use" results confirms this statement. Mobile spectrum has been mainly based on exclusive access licensing and implemented by means of market forces and driven by technical and economic efficiency. Although licensing is exclusive, mobile spectrum holders have the incentive of an efficient usage to boost innovation as spectrum owners want to economize their resources. As a consequence regulators shouldn't consider that exclusive access isn't per se inefficient and that policy measures could have a different impact on different industries. Industries with a high spectrum efficiency such as the mobile industry should be protected from measures orientated to address

industries or public administrations with poor spectrum efficiency. Spectrum sharing efficiency gains should be compared to the long term gains in efficiency achieved by exclusive licensing.

When analysing spectrum sharing challenges and opportunities there is a great risk of losing focus on exclusive bands. This could affect the balance between the different spectrum options or access regimes available. We need to keep the right balance across the whole spectrum toolkit (exclusive access, shared access, collective access or spectrum trading).

The lion's share of wireless spectrum suitable for commercial wireless use is currently licensed to government users. Although we acknowledge it to be hard work, we must try to clear and reallocate those bands that are most suitable for licensed wireless use in the first instance.

2. LSA as defined by the RSPG is too broad in order to address the primary industry objectives and challenges.

LSA definition should take into account the challenges and objectives described in the RSPG consultation, mainly the use of inefficient frequency bands for high demanding services as mobile. As a consequence the definition provided by the RSPG doesn't fit the previously explained objectives.

The definition of services that "LSA users" could provide is too broad and should be limited to mobile services in line with the RSPG reasoning and industry needs. On the other hand, the definition of incumbent frequencies that should be shared are also too broad and should be clearly limited to inefficiently used spectrum, where mobile bands should be explicitly excluded due to their highly efficient use.

Our proposal for LSA definition is the following:

"A regulatory approach aiming to facilitate the introduction of mobile services operated by a limited number of licensees under an individual licensing regime in a frequency band already

assigned or expected to be assigned to one or more incumbent users. Under the LSA framework, the additional users are allowed to share the underutilised spectrum (or part of the spectrum) under commercial terms, in accordance with sharing rules included in their rights of use of spectrum, thereby allowing all the authorized users, including incumbents, to provide a certain QoS”.

3. We need to manage how spectrum sharing is introduced in the regulatory framework in order to avoid negative impacts on investment

From a spectrum policy perspective there is no need to be disruptive with spectrum sharing as the industry currently needs a positive climate of confidence for investment. It seems better to be evolutionary rather than revolutionary and increase market certainty rather than increase uncertainty and jeopardize investments in 4G networks. A shared access regime with limited licensing rights, no renewal expectancies and service pre-emption by the primary user, especially governments, creates an uncertain environment for long term investments. The gold standard for deployment of ubiquitous mobile broadband networks still remains cleared, exclusively licensed spectrum. Those megahertz of cleared spectrum in an exclusive-use approach have enabled wireless industry across the world to invest hundreds of billions of euros, deploying first class mobile broadband networks, resulting in enormous economic benefits for consumers and businesses.

Spectrum sharing should be seen as another possible management tool to achieve additional spectrum, but exclusive access is preferred especially in industries where spectrum management policy is working correctly. Shared access shouldn't replace exclusive access, they will work together in a complementary manner. In order to make more spectrum available for mobile broadband we will need to remove or clear obstacles to spectrum use, employ new technologies to bring licensed allocations to the market and finally explore new ways to increase spectrum efficiency.

National Regulatory Authorities (NRAs) should analyze the opportunity cost of issuing exclusive mobile licenses and compare this with the potential benefit to MNOs of sharing existing allocated / assigned spectrum use by other, especially governmental, bodies. MNOs can then choose to accept the limitations that sharing has on a voluntary and commercial basis. Telefónica believes that:

- Existing MNOs spectrum assets should not be devalued when introducing any new spectrum sharing framework
- Spectrum sharing should not impose stronger constraints on MNOs than on other stakeholders, but should be based on equity, reciprocity and fairness.

4. NRA's to encourage sharing under commercial agreements whilst protecting and avoiding destabilizing operators' investments

Spectrum sharing provides opportunities for incumbent holders such as governments (Defence, PPDR...etc.) to share their under used spectrum with commercial users to provide mobile broadband. Creating appropriate incentives for users to "share" should avoid opportunistic gains and should be based on voluntary and commercial agreements. Regulators should be careful to avoid harming legacy uses of spectrum. They need to encourage but at the same time protect. This implies that NRAs should avoid destabilizing operators that have heavily invested in spectrum.

We believe that NRAs will need to make sure when introducing spectrum sharing that there are no unfair conditions or competition impacts and that sharing opportunities are developed based on commercial agreements between parties rather than regulatory intervention.

5. A market driven approach to spectrum sharing will work better than a regulatory driven approach based on heavy, burdensome regulatory concepts

Telefónica believes in a market driven approach to spectrum sharing rather than a heavy, burdensome regulatory driven approach. New concepts such as Beneficial Shared Opportunity

(BSO) / Spectrum Sharing Access Rights (SSAR) that were introduced in the E.C Communication on spectrum sharing should be avoided. A market driven approach led by commercial agreements with adequate transparency measures would be a more appropriate route. The real regulatory challenge is to set adequate investment incentives rather than devise a new and heavy regulatory process. In any case, we would welcome the opportunity to work closely with NRAs to reduce uncertainty in how the process will finally work.

6. Spectrum sharing should be used as a spectrum efficiency tool rather than an industrial policy tool.

The regulatory debate around spectrum sharing, in particular in the E.C Communication, creates doubts about whether the main goal of spectrum sharing is to foster spectrum efficiency or if it's another industrial policy tool (entry, competition, prices ...etc.). As mentioned before, spectrum sharing should be just used to increase spectrum efficiency, allowing operators to adapt more quickly to technical advances and increase capacity temporarily and quickly due to demand changes.

The way to create sustainable consumer benefits and increased competition should start by creating legal certainty in the market that will consolidate solid investment incentives and will foster innovative services and increase competition in order to achieve benefits for consumer, producer and society (legal certainty => investments => innovation => competition => social-consumer-producer benefits). This path will allow NRAs to make spectrum sharing happen whilst creating high and sustainable benefits for all stakeholders. Defining an uncertain regulatory framework where it isn't clear what spectrum could be used for will not create confidence in the market and could harm investment dynamics and incentives. Taking the shortcut to quick wins in a non-sustainable competition and prices environment in mobile broadband will have a negative impact on investments incentives for all the industry.

7. It's critical that the shared access regulatory debate has no impact on on-going work under the WRC 15 process, which is the mobile industry's primary mechanism to achieve more spectrum.

The World Radio Conference in 2015 will be critical for meeting long-term spectrum demand. This spectrum will be fundamental to ensure that all European Union member states can continue to reap the significant potential for economic growth, job creation, innovation and resource efficiency generated by mobile broadband.

NRAs must make sure that the need for exclusive harmonised spectrum is not lost in the spectrum sharing debate as this could be a distraction to the preparatory work on new bands for IMT within the EU (CEPT/ECC) and ITU. The big concern is the link that could be drawn between the potential of shared spectrum and potential new exclusive bands for IMT. If spectrum sharing expectations are not met, and they had been considered as being adequate to address the mobile industry's long term spectrum needs, then the mobile industry will be severely affected.

8. Interference management is still a top priority and should create confidence and certainty

Telefónica is highly concerned with interference management and considers that it should be kept as a top priority, through the definition of clear policies that protect primary user rights.

Changing the status of services in the ITU Radio Regulations (RR) would de facto change the interference environment between the different services. "Upgrading" secondary services to primary status could bring new constraints on the incumbent primary services. Telefónica believes that such changes in service status should not be implemented without thorough study at the international level. As such, Telefónica continues to support the review of primary allocations currently under study under the European Radio Spectrum Policy Programme (RSPP) and ITU World Radio Conference (WRC-15) Agenda.

9. The Commission's Inventory study conclusions show that Government spectrum should be the main focus for more efficient spectrum use. Mobile bands by contrast have highly efficient use.

Final conclusions of the recent Commission study show where sharing opportunities might lie and include the following:

- ✓ According to technical efficiency criteria, GSM/UMTS/IMT bands have high spectrum usage (> 80%) since they are already shared by millions of consumers, and there is little space for more efficient use. It is not appropriate for these bands to be target bands for further spectrum sharing.
- ✓ Defence spectrum bands are the primary ones that could be more efficiently used. This spectrum could therefore be foreseen as the main target for spectrum sharing according to the study results.

Nevertheless we have to state our concerns about the inventory methodology which assigns mobile services, WiFi and SRD the same economic value in their respective bands. Do Cellular bands in sub 1GHz spectrum really have the same value as SRD in sub 1GHz and WiFi in sub 3GHz? Although we consider WiFi and SRD relevant services/technologies, we strongly believe that mobile services are even more important. That's the reason why we consider a distinction should be made when evaluating the commercial economic value of these key services.

10. Spectrum sharing technologies remain largely unproven in full scale deployments with no proven business case that could achieve economies of scale to develop an ecosystem.

While we agree that new sharing paradigms should be explored as another option for spectrum management, we believe that sharing technologies have been long promised but remain largely unproven. Sharing technologies such as cognitive radio or DSA are far from technical maturity or widespread market arrival, remaining as expected technologies.

Spectrum sharing based on geographical databases is a short term solution, but still has great uncertainties as it's not clear it works even in small and controlled deployments. The U.S experience with databases is still at a very early stage to justify a full scale deployment. Additionally, the industry hasn't yet identified a clear business case that makes spectrum sharing sustainable.

Cognitive radio using sensing is inconsistent with the established EU policy of technology neutrality, because it may constrain the freedom of primary spectrum users to choose alternative technologies.