



GSMA Public Policy Position

## Licensed Shared Access (LSA) and Authorised Shared Access (ASA)

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# Summary

## Context

Licensed Shared Access (LSA) and Authorised Shared Access (ASA) are concepts that allow spectrum that has been licensed for international mobile telecommunications (IMT) to be used by more than one entity. Theoretically, this would increase the use of the radio spectrum by allowing 'shared access' when and where the primary licensee is not using its designated frequencies. As global demand for spectrum intensifies, regulatory strategies such as these are attracting considerable interest and investigation.

## Position statements

1. The GSMA is in favour of a definition that identifies the LSA/ASA concept as an individual-license regime of a limited number of mobile network operator (MNO) licensees in a frequency band that is identified for IMT, and which is already assigned to other incumbent users whose spectrum rights of use have not been granted through an award procedure for commercial use, for which the additional users are allowed to use the spectrum (or part of the spectrum) in accordance with sharing rules included in the rights of use of spectrum granted to the licensees.
2. Identifying additional spectrum for IMT and global harmonisation across ITU regions should remain the main objective for the works of ITU-R.
3. Exclusive access through appropriate market-based licensing should remain the main regulatory approach for mobile broadband spectrum.
4. The LSA/ASA concept could be one solution for mobile network operators to access complementary spectrum for mobile broadband (e.g., the 2.3GHz band in Europe or 3.5GHz band in the United States) and could be explored to facilitate access to specific capacity bands, within specified geographical or technical limits. Consequently, the LSA/ASA concept is not applicable to bands for which mobile network operators have acquired exclusive spectrum usage rights.
5. Authorisation to access additional spectrum using the LSA/ASA concepts should be given by National Regulatory Authorities (NRAs) after public consultation and agreement between incumbents and mobile network operators.

## Background

The GSMA is aware that the concept of Licensed Shared Access (LSA) and Authorised Shared Access (ASA) is being discussed thoroughly in several fora (e.g., EC, ECC) and that several definitions are currently under consideration. Currently, commercial access and use of spectrum is generally authorised in two ways: either through individual licences or in accordance with licence-exempt (unlicensed or ‘commons’) rules. LSA/ASA proposes a new, complementary way of authorising spectrum.

Recently, there has been interest in the LSA/ASA principle in the US and Europe for specific bands, namely the 3.5GHz and 2.3GHz bands. These bands have already been identified for mobile broadband, but are partially used by non-mobile incumbent services.

For the 2.3GHz band, the situation in Europe is complex. Even though this band has been globally identified for mobile broadband at the international level and standardised at the 3GPP, non-mobile incumbents remain the main users of this spectrum. In France, for example, this band is used by the Ministry of Defence to measure missile speeds (including protection of nuclear weapons). Germany uses the spectrum in part to support the activities and programming of broadcasters using the 2.3GHz band. However, the incumbent services are generally highly localised and do not cover entire national territories.

In the United States, the situation of the 3.5GHz band is also complex. The Coast Guard (part of the US military) uses this frequency band for naval radar, imposing severe geographical limitations in coastal areas, which include significant population centres. However, beyond these areas, the spectrum band remains largely unused. The figure below illustrates the geographical potential of this band. Exclusion zones extend from the coast to the yellow line, whereas the band is largely unused across the rest of the country.



Recent studies highlight the potential use of this band beyond the US coastal areas for mobile broadband, and this band is part of the targeted spectrum in the National Broadband Plan. Recently, the Federal Communication Commission (FCC) Technological Advisory Council recommended that the federal government fast-track this band (3550–3650MHz) for small-cell use and a Notice of Proposed Rulemaking (NPRM) from FCC has been issued (with comments due by 20 February 2013).

## Rationale

**The GSMA is in favour of a definition that identifies the LSA/ASA concept as an individual-license regime of a limited number of mobile network operator (MNO) licensees in a frequency band that is identified for IMT, and which is already assigned to other incumbent users whose spectrum rights of use have not been granted through an award procedure for commercial use, for which the additional users are allowed to use the spectrum (or part of the spectrum) in accordance with sharing rules included in the rights of use of spectrum granted to the licensees.**

The mobile operator community needs clear and well established definitions of Licensed/Authorised Shared Access (LSA/ASA) to appropriately evaluate the concepts including the impact on innovation, investment and technology reliability. As a consequence, the GSMA does not support the implementation of new sharing concepts at this time, until more information and specifics are known.

The GSMA defines LSA/ASA as complementary way of authorising and accessing spectrum, in addition to licensed (exclusive) and license-exempt (unlicensed), which enables the sharing of spectrum between a limited number of licensed users. Based on a commercial agreement and under an adequate regulatory framework, a non-mobile incumbent, defined as a current holder of spectrum rights of use which have not been granted through an award procedure for commercial use (first come, first served; beauty contest; or auction), could allow part of their assigned spectrum to be used by a LSA/ASA user (such as a mobile operator). The LSA/ASA concept should not be, by default, an initial or temporary phase that could lead to the refarming of a band.

LSA/ASA proposes the shared use of spectrum using cognitive radio techniques (geo-location combined with spectrum databases). Under a specific regulatory framework, the non-mobile incumbent could allow non-interfering use of part of its assigned spectrum by a mobile operator, pursuant to a commercial agreement with the incumbent and subject to the terms defined by the relevant government authority.

The LSA concept allows continued use of spectrum for the incumbent, while providing potential use of the same spectrum for other users. Sharing under the LSA framework is binary by nature, as it admits spectrum use by either the incumbent or the LSA licensee. Such users could potentially provide other applications or radio services, in accordance with Chapter 5 of the Radio Regulations (ITU-R).

### **Identifying additional spectrum for IMT and global harmonisation across ITU regions should remain the main objective for the works of ITU-R.**

The LSA/ASA concept should not be used to replace efforts of the mobile community to secure the allocation of additional spectrum for exclusive use mobile broadband and the associated identification for IMT.

Uncoordinated sharing activities could be counterproductive to global harmonisation and could potentially reduce the economies of scale necessary for the development of a sustainable technology sector.



**Exclusive access through appropriate market-based licensing should remain the main regulatory approach for mobile broadband spectrum.**

For mobile broadband spectrum, especially when it has been identified for IMT, governments should prioritise a licensing regime based on well-defined exclusive access rights. Exclusive access licensing has well-known benefits, such as a guarantee of quality of service, good interference management and a high degree of market certainty necessary to create adequate incentives for investment and innovation. In the context of the second, third and fourth generations of mobile networks (e.g., GSM or UMTS), the exclusive access regime has already demonstrated an ability to foster the development of innovative services such as mobile internet, among others services, while creating positive effects on investment, competitiveness, economic growth, job creation and social welfare.

ASA/LSA should not provide governments with an 'easy out' from the work of clearing the spectrum for mobile broadband, in favour of using shared access as a *de facto* standard for national/regional spectrum management. However, when spectrum cannot be made available in a timely fashion for exclusive use by mobile broadband, the LSA/ASA concept may provide opportunities to use the spectrum on a transitional basis, or in the longer term if relocation of the incumbent system is not viable in a preferred band.

**The LSA/ASA concept could be one solution for mobile network operators to access complementary spectrum for mobile broadband (e.g., the 2.3GHz band in Europe or 3.5GHz band in the United States) and could be explored to facilitate access to specific capacity bands, within specified geographical or technical limits. Consequently, the LSA/ASA concept is not applicable to bands for which mobile network operators have acquired exclusive spectrum usage rights.**

The LSA/ASA concept could give MNOs the possibility to gain access to new spectrum, which may be impossible otherwise (at least in the short term) on an exclusive basis. For example LSA in 2.3–2.4GHz in countries where this band is already used by other applications than mobile (e.g., by defence/telemetry or SAB/SAP actors) may give MNOs access to this band for mobile.

The risk is that spectrum sharing becomes the general rule in all new bands, whereas it should be a complementary tool to exclusive access. In addition, the more actors that share a given spectrum band, particularly in a well-formalised framework, the more difficult it will be to free the band in the future for exclusive access (unless it is used as a transition tool gaining access to the spectrum before the incumbent is fully relocated), including for mobile services.



**Authorisation to access additional spectrum using the LSA/ASA concepts should be given by National Regulatory Authorities (NRAs) after public consultation and agreement between incumbents and mobile network operators.**

Before LSA/ASA implementation, analysis will be required for more detailed consideration of the number of LSA/ASA licensees with a similar Quality of Service (QoS) requirement that could successfully utilise the band, how competition rules would apply, or how the introduction of LSA might impact the future use of spectrum.

Therefore, any sharing arrangement would be included in the authorisations delivered by the NRA. Information from mobile service providers is needed on the regulatory regime, in order to implement the LSA concept. In this regard, a consultation requesting the views of the mobile industry is recommended.

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**GSMA Government and Regulatory Affairs**

A country's citizens benefit most when the private and public sectors work together in a spirit of openness and trust. To this end, the GSMA Association is committed to supporting governments and regulators in their efforts to introduce pro-investment telecommunications policies.

The GSMA's government and regulatory affairs team represents the mobile industry around the world, advocating for a regulatory environment that encourages investment, maximises innovation and creates opportunity for mobile operators, the wider mobile ecosystem and mobile users. Through direct engagement with governments, we help to shape the global regulatory agenda.

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