



Europe

Base station planning permission in Europe 2013



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Legal Information

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1. Acknowledgements

The material in this report was compiled by the GSM Association (GSMA) staff and updated with information from members of the GSMA Europe and mobile operators' trade associations across EU-28 member states and third countries during the period September/November 2013.

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2. Executive summary

Mobile services are a key enabler of socio-economic development, and achieving ubiquitous access to mobile services for citizens is a major government policy objective in most countries. Mobile network infrastructure and the adoption of mobile services are now considered as key indicators of European economies.

To ensure national coverage, mobile operators are required to install base stations across the country so that every user is able to benefit from the use of mobile services.

To deliver continuous mobile coverage in dense urban areas and across rural expanses, mobile network operators must build and manage an array of base stations — free-standing masts, rooftop masts and small cells — equipped with antennas that transmit and receive radio signals, providing voice and data services to their customers in the area. The introduction of new mobile services (e.g. 4G) requires additional, technology specific base stations. Operators may be required as a condition of their licence to install base stations to meet government or regulatory coverage targets.

Requirements and conditions that operators face in order to be granted a permit for base station deployment vary largely from one European country to the other. Procedures can be defined at different government levels, even though generally the local authority (municipality) is the main point of referral for the process. In addition, general requirements related to regional or national levels legislation usually have to be met.

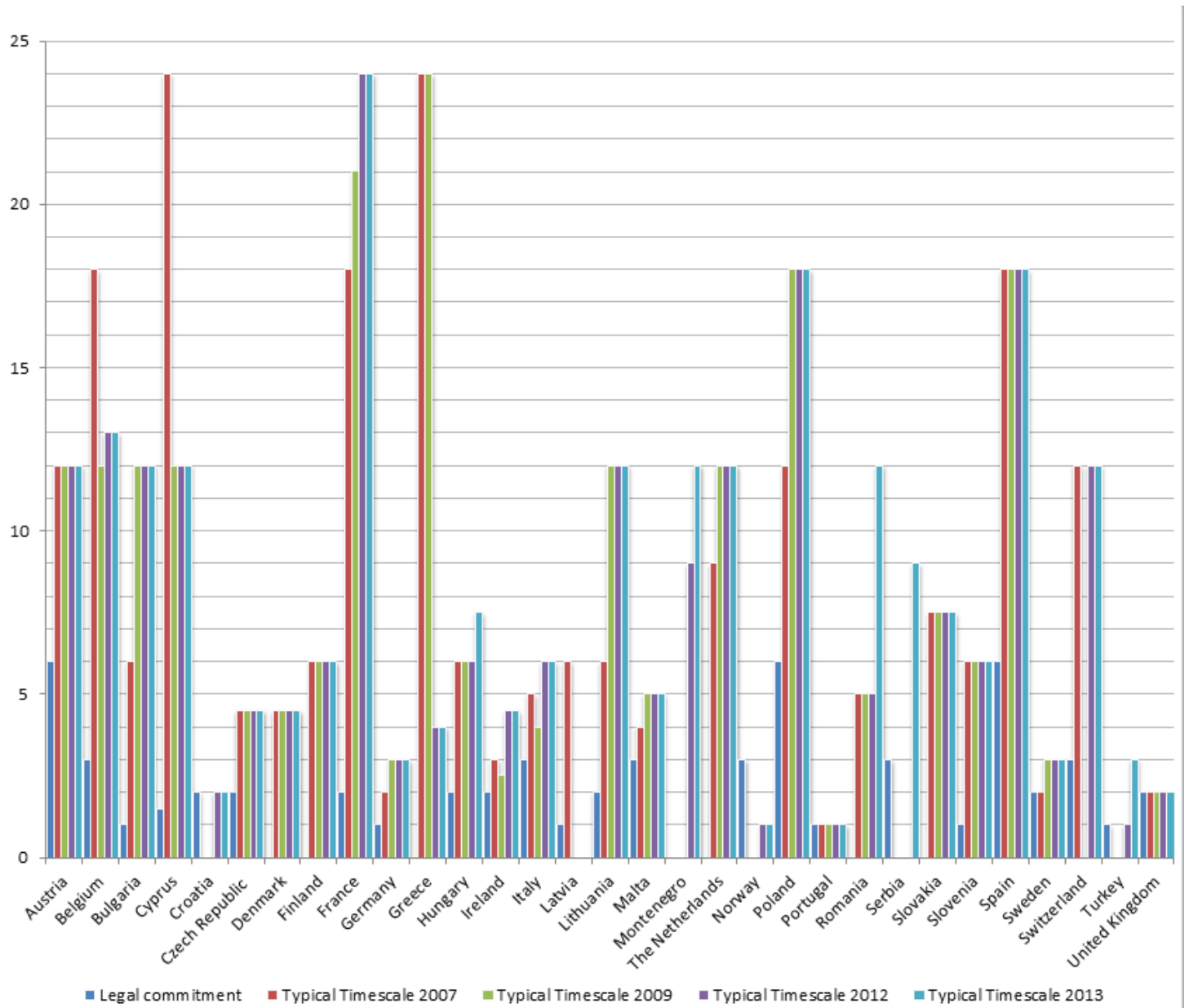
This year we note a slight increase in timing for permission in 3 countries (Hungary, Romania, Turkey), new information regarding Macedonia and Serbia, new laws adopted in Ireland and Slovenia and on its way in Spain (expected in early 2014). Shorter timescales and simplification of procedures have been brought in in Norway.

It still takes on average one year or more to receive all permits necessary to deploy single base station antennas. As a general observation, most delays are caused by bureaucratic and time consuming administrative permission processes, lack of cooperation with operators, or sometimes mere obstruction at the local level.

In some countries, however, mechanisms to avoid delays related to bureaucratic inefficiencies have been implemented, including exemptions for small installations or certain site upgrades, 'one stop shop' licensing procedures, and tacit approval if local authorities do not oppose an authorization request within a certain number of days.

The Figure 1 of this report summarizes the timescales information contained in the countries tables presented in the remaining part of this document.

Figure 1: Comparison between legal requirements and typical timescales for permission granting for Base Station deployment in months



3. Scope

This report presents summaries of the base station planning procedures for 27 EU Member States and third countries (Liechtenstein, Macedonia, Montenegro, Norway, Serbia, Switzerland and Turkey). The report is based on inputs received from mobile operators in the 34 countries and three national trade associations. Figure 2 presents the countries that are covered by this report.

Figure 2: GSMA Europe members and contributors to the report (countries)



4. Country Data

Austria

Exposure guidelines

Federal limits are based on ICNIRP and laid down in Austrian Standard E8850.

A considerable number of municipalities has passed motions and/or resolutions trying to impose local exposure limits that vary between 1 $\mu\text{W}/\text{m}^2$ and 100 mW/m^2 (all of which are not legally binding) as well as exclusion zones not only around OMEN¹, but also for entire municipalities.

Both the city and the province of Salzburg tried to impose very low exposure limits for radiofrequency power flux density of 0.001 W/m^2 (= 1 mW/m^2) and tried to enforce this by withholding building permissions. However, this limit is not legally binding and has no relevance in the building permission process. In 2005 the rollout process for 3G in Salzburg came to a standstill which was resolved by establishing a cooperation between city and operators (“workshop procedure”) under which every new 3G site within the city of Salzburg was evaluated. While many sites coincidentally show exposures below the level of 1 mW/m^2 as desired by the city of Salzburg, there is a considerable number of sites well above this value thereby proving that an “1 mW/m^2 network” does not exist even in Salzburg and that the conclusions of the Swiss BAKOM measurements of 2001 are still valid².

Planning Authority

Relevant local municipality (mostly the mayor) and/or borough/county, respectively.

Requirements for planning permission

Vary according to location. Every province has its own building and landscape protection laws. In some provinces a simple notification of the planning authority suffices, while in others a formal building permit has to be obtained (which also in some cases includes participation of the direct neighbours). Additionally, federal laws have to be obeyed and permissions under these laws, if applicable, have to be obtained (e.g. air traffic safety, forest protection, listed buildings etc.)

Timescales for Permission

Every one of the nine provinces has its own building law which makes site acquisition and permitting very complex indeed and far from being a standard procedure.

Depending on the applicable law(s) (e.g. building laws of the province in which the site shall be erected) timescales vary widely. If a building permission has to be obtained, a decision to grant or refuse the

¹ See original GSME report 2004 footnote 6: Ort empfindlicher Nutzung (places of sensitive use) as defined in Art. 3, Para. 3of the Provisions of the Ordinance relating to Protection from Non-Ionising Radiation of December 23rd 1999.

² The OFCOM/BAKOM report 2002 on the measurements 2001 show that an operative network in any densely populated city will require power flux densities of up to 200 mW/m^2 . See Report <http://www.bakom.admin.ch/dokumentation/zahlen/00545/00547/00548/index.html?lang=de>

application must be issued at the latest within six months of the date of the application. When the decision is not taken within six months, the appeals process needs to be initiated which will take (at least) another six months. Often the reasons for delaying or even denying permissions are politically motivated based on claims of health issues. However, health issues are dealt with in federal laws and are therefore no permissible grounds for delaying or denying permission. Further (permissible) reasons are nature and landscape protection or other legal issues.

Appeals process

As a general rule, every administrative authority in Austria has to decide within six months. If no decision is made within that period of time, the applicant can appeal against that delay to the superior administrative body (which also has to decide within six months). But this does not necessarily mean that a decision (whether positive nor negative) will be taken within 12 months, because there are often more than two instances involved and some local authorities tend towards deferring decisions on purpose.

Public Consultation

In most cases of a building permission procedure, neighbours are heard and have the right to object to a site. Health issues do not constitute a reason to object within the frame of the building permission procedure.

To improve the dialogue with communities, an agreement between the Austrian operators and the Federation of Austrian Communities on voluntary information by the operators prior to site erection was concluded in 2001. This is a general agreement and not only for OMEN sites which are treated equally in Austria.

Furthermore, operators will instigate and/or attend voluntary pre-planning meetings with local authorities as necessary.

Beginning in 2005, "mobile phone charters" were concluded with three of the 9 Austrian provinces. Main issues are a defined participation procedure for communities that join the charter and provisions for increased site sharing.

Exemptions & Existing site upgrade

Exemptions in two provinces exist, namely in Salzburg for roof tops <2 m and in Upper Austria for roof tops and green fields <3 m. Upgrades of existing sites have to follow the same processes as stated above unless additional antennas and equipment were included in the original plan for which a permit was already obtained ("reserved space") or if the changes required by the extensions are deemed insignificant (this applies only to a few provinces)

Belgium

Exposure guidelines

Brussels Capital: 3 V/m cumulative norm for all RF sources (except broadcasters).

Walloon Region: Today, the Walloon norm is 3 V/m per antenna. The

Regional Government has stated in 2009 that it wanted to lower the norm to a 3 V/m cumulative norm, with a final target of 0.6 V/m. Discussions on this issue are currently taking place at Parliament level.

The Flemish norm is double: a 3 V/m per antenna norm for mobile operators and a cumulative 20.6V/m norm for all RF sources.

Planning Authority Regional administrations

Requirements for planning permission Planning has to comply with regulations at all levels of governments (local, regional, federal). Building permissions are required for most of the installations in Brussels and the Walloon Region.–The situation is different in Flanders where building permits exemptions are applicable in 60% of the cases.

On top of that, environmental permissions are required on EMF aspects:

- In Brussels, an environment permit is delivered by Brussels Environment for each installation, after local authorities consultation and local public enquiry;
- In Wallonia, a “radiation certificate” delivered by the ISSeP has to be notified to the local authorities;
- In Flanders, a “radiation certificate” is delivered by the BIPT.

Timescales for Permission Regarding building permits: average is 400 days in Brussels Region, 130 days in Walloon Region and 180 days in Flanders.

Regarding environmental permits, the timescales are lower.

Appeals process Regarding building permits, appeals go directly to the relevant Ministry or Council of State. The appeal process takes from three to 24 months. Regarding environmental permits in Brussels, appeals go first to Environmental authority, then to the relevant Ministry, and finally to Council of State.

Public Consultation Local authorities publish notices on sites and make information available in the Town Council offices.

Exemptions & Existing site upgrade Limited amount of exemptions in Brussels and Wallonia. More exemptions in Flanders (60% of cases).

Bulgaria

Exposure guidelines Power density threshold for public environment is fixed to $10\mu\text{W}/\text{cm}^2$ ($0.1\text{ W}/\text{m}^2$) accumulated value for all frequencies in the range between 300MHz and 30GHz that is much stricter than these defined by ICNIRP. Mobile operators in Bulgaria strictly observe the statutory values set forth in ORDINANCE No 9 of the Minister of Healthcare and the Minister of Environment for the admissible limit values of electromagnetic fields in residential areas and determination of safety zones around EMF emitting

facilities.

These limit values are mandatory and are subject to control by the National Center of Public Health Protection.

The compliance with the ORDINANCE No 9 is controlled during the design phase and the process of obtaining permits for construction of base stations as well as during their putting into operation.

Currently Ministry of Healthcare runs a project for adaptation of EMF-regulation. In this proposal are also foreseen national EMF-thresholds changes.

Planning Authority Ministry of Healthcare for preliminary sanitary control – design phase.

Local municipality for Building Permit.

State authority - Directorate of National Construction Supervision for Permit of Use.

Requirements for planning permission In accordance with the parameters of Ordinance No 9 each base station is subject to ex-ante (preliminary) and ex-post health impact control by the Ministry of Healthcare.

Preliminary control: During design phase of a base station, a theoretical calculation of safety zone is submitted to Ministry of Healthcare. The positive assessment from Ministry of Healthcare is a mandatory prerequisite for the issuance of a Building Permit for base stations.

The ex-post health impact control carried out after the construction of the base station has been completed and before putting it into operation. During on-air tests of a base station, laboratory which is certified for EMF measurements, measures power density in the surrounding area. It is wideband measurement, including all EMF emitting objects in the area – base stations, TV and radio transmitters, etc. If the measured values do not exceed the limits, we obtain Permit of Use for this base station.

Measurement protocols have to be registered at Ministry of Healthcare as well as at local municipality.

Once a base station is operational, local representatives of Ministry of Healthcare can make control measurements at any time and location.

Timescales for Permission Requests for preliminary EMF expertise should be answered within one month, but in reality it takes more time. The situation is the same in terms of the measurement of the power density (on-air tests of a base station).

The procedures for obtaining all permissions needed for construction and start operating a base station are quite complex. In practice a typical

	timescale goes more than one year for all permissions. Worst cases - more than two years.
Appeals process	An appeal can be filed against the Decision or action of an Authority with the Court of Appeal.
Public Consultation	The local municipality has to make information available at city hall office. Any new base station and site design changes of the existed has to be registered in Public Register of sites with public purpose at the regional health inspection office.
Exemptions & Existing site upgrade	Exemptions: For low power (in-building) sites preliminary sanitary control (assessment of theoretical safety zone from Ministry of Healthcare) is not required. The other part of the procedure remains the same. Site upgrades must follow the same process as new sites – no exceptions.

Croatia

Exposure guidelines	Based on national law document. Similar to ICNIRP, but more restrictive, for example, Croatian limits for professional exposure are equal to ICNIRP for general public. National – By Law on protection from electromagnetic fields (Ministry of Health, 2011). Exposure limits depend on frequency range, e.g. for 400-2000 MHz in areas of significant sensitivity (public and residential buildings, schools, hospitals etc.) Limits applicable for professional exposure (workplaces occupied for max eight hours with controlled exposure), are 2.5 times higher compare to the limits in areas of significant sensitivity.
Planning Authority	Local and regional authorities
Requirements for planning permission	Base stations shall be designed fulfilling requirements contained in the Building Code and Ordinance on simply construction and works. There is no obligation to obtain location permit and building permit, but there is obligation to make building design (project). Permission from the civil aviation authority is needed. In some particular cases a building permit has to be obtained.
Timescales for Permission	If a building permit has to be obtained, a decision to grant or refuse the application must be issued within 60 days of the date of the application.
Appeals process	When the decision is not taken within 60 days, the appeals process needs to be initiated, which will take at least 6 months.
Public Consultation	Not mandatory.
Exemptions & Existing site upgrade	Upgrade is allowed without further permission if it does not involve any change in terms of construction work.

Cyprus

Exposure	The ICNIRP guidelines have been adopted by legislation in 2004. The
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guidelines	<p>legislation has been recently updated to include the UMTS and DVBT sources. Additionally the measurements in the vicinity of a base station should be performed at three places around the base station in a distance less than 100m in residential areas and at two places in case the distance to the nearest building is more than 200m. Although the public concern is still remarkable and the pressure from green parties is significant the Department of Electronic Communication (DEC) changed the legislation (to be effective in 2014) and the EMF measurements will be conducted once a year on every base station. The project is implemented in collaboration with accredited laboratories. The results are delivered to DEC and are posted on their webpage.</p>
Planning Authority	Municipality and Ministry of Interior's Planning and Housing Department.
Requirements for planning permission	<p>Vary according to type and location. All base stations have to comply with the Cypriot legislation formed in 2006 as the new guidelines were incorporated in the National Building Code. Municipalities provide permits to cases where a base station is installed on roof tops. Planning and Housing Department provide permits for base station installed on rural plots. In residential areas usually both permits, planning and building, are needed. In cultural or developing areas, both permits are needed and sometimes an environmental risk assessment should be performed. In most cases where location makes it necessary, base stations need to assure approval from the Civil Aviation Department, Archaeological Department, Forestry Department and the Fire Department, Local authorities, Department of Electronic Communication, Department of Medical Care, Department of Civil Works and Department of Environment. All base stations have to comply with the guidelines of Ministry of Health and the Department of Electronic meeting Environmental Impact Assessment standards.</p> <p>Achieving a building permit under the existing legislation is difficult and time consuming. The interacting Departments are often confused with regards to their authorities and in many cases there are overlapping requirements by the different departments causing delays and in some cases unjustified rejection of permits.</p>
Timescales for Permission	The original provision of six weeks contained in the new legislation is hardly ever kept by the Authorities. Typical timescales go up to one year. Worst cases two years.
Appeals process	Appeals go through administrative courts within 30 days of rejection of the permit.
Public Consultation	Not mandatory, but requirements may vary. The company's policy is to make publications in local newspapers when a new base station is about to be installed (in compliance with the Law).
Exemptions & Existing site upgrade	<p>Upgrades are evaluated following the procedures for new base stations.</p> <p>Indoor antennas are excluded from building permits.</p>

Czech Republic

Exposure guidelines	ICNIRP guidelines were adopted in 2000. They were specified in Governmental Decree No.480/2000. Currently the Governmental Decree No.1/2008 is valid (still ICNIRP, without any changes)
Planning Authority	Municipality's building department
Requirements for planning permission	Rooftop structures do not require any permission. Towers need zoning permission and sub permissions e.g. permission from environmental office etc. All base station needs permission from regional health office (certificate of compliance with ICNIRP limits).
Timescales for Permission	One to eight months. The legal commitment of granting permission in 2 months is respected in the majority of cases.
Appeals process	If the permission is not granted and appeal can made within 15 days to the local administration or within 60 days to the administrative court.
Public Consultation	Citizens may submit comments only in cases when permission is needed.
Exemptions & Existing site upgrade	Upgrade is allowed without further permission if it does not involve any change in terms of construction work.

Denmark

Exposure guidelines	EU Recommendation. Labour Inspectorate follows the ICNIRP recommendations when evaluating exposure, Public and Occupational.
Planning Authority	Municipality
Requirements for planning permission	Building permits. The applicant has to inform the Danish Business Authority about the application process.
Timescales for Permission	Generally three to six months. Worst cases up to four years.
Appeals process	Appeals can be made to the Ministry of Internal Affairs.
Public Consultation	The municipality has to inform the citizens impacted.
Exemptions & Existing site upgrade	Simple upgrades (as long as height on existing structure is not exceeded) or sharing of sites do not require further permissions, but notification of the site upgrade need to be submitted to authorities.

Estonia

Exposure guidelines	National limits are based on ICNIRP (400-2000 MHz $f(\text{MHz})/200 \text{ W/m}^2$, > 2GHz 10 W/m^2)
Planning Authority	Estonian Health Board
Requirements for planning permission	Compliance with the national Health Board exposure limits is required

Timescales for Permission	There is no timescale specified in the legislation.
Appeals process	Appeals go through a standard administrative suit procedure.
Public Consultation	Public consultation with local communities is not mandatory.
Exemptions & Existing site upgrade	No permits required for ERP <100W.

Finland

Exposure guidelines	ICNIRP
Planning Authority	Municipality. Procedure defined by the regulator (FICORA)
Requirements for planning permission	A building permit is required. An impact analysis has to be attached to the application together with an evaluation of options such as usage of existing sites. For base stations higher than 15 meters permission from the civil aviation authority is needed. Additionally, special permissions have to be granted before building permits if a town plan is not in place. Base station in building needs only approval of the landlord.
Timescales for Permission	There is no timescale specified in the legislation. In practice however, permission can take one to 24 months, with the average being six months.
Appeals process	Appeals can be made within 15 days to the local administration or within 30 days to the Provincial Administrative Court. This can lead to delays of up-to two years.
Public Consultation	The operator has to inform the community and make information available at the local municipality offices.
Exemptions & Existing site upgrade	None

France

Exposure guidelines	Decree of May 3, 2002 decree on public exposure to electromagnetic fields limits. Compliance with the exposure limits for EMF fields fixed by the ICNIRP, in 1998 and 2009.
Planning Authority	Mayor (Municipalities) and French Frequency Authority (Agence Nationale des Fréquences – ANFr) for the emission license ³ .
Requirements for planning permission	Compliance with the urban planning Code. Planning permission is mandatory for : <ul style="list-style-type: none"> - New constructions : building of a mast higher than 12m or creation of

³ In October, 2011, the State Council (Conseil d'Etat - highest administrative court in France) stated that the State (through mandated national agencies ARCEP and ANFR) is the only competent authority to regulate on the installation of new masts.

	<p>a shelter, whose surface exceeds 5 m²;</p> <ul style="list-style-type: none"> - Existing constructions : whenever <ul style="list-style-type: none"> ▪ The new construction affects the outside aspect of an existing building ; ▪ There are changes in the shelter, with creation of a surface that exceeds 5m².
Timescales for Permission	Legally required timescales for Planning permission vary from one month (for simplified procedure “Déclaration Préalable” without consultation) to more than five months for building permit.
Appeals process	Appeal procedures are handled by administrative courts. ⁴
Public Consultation	<p>Guide of Best Practices with local authorities “Guide des relations entre opérateurs et communes” (GROC).</p> <p>NB: there might be local agreements, usually based on GROC, between operators and municipalities in order to define local deployment and information procedures.</p>
Exemptions & Existing site upgrade	<p>Masts below 12 meters, equipment not affecting the outside aspect of existing building, shelters < 2 sq. meters.</p> <p>The following cases are exempted from a planning permission :</p> <ul style="list-style-type: none"> - <u>New constructions</u> : building of a mast less or equal to 12 m or creation of a shelter, whose surface less than 5 m² ; - <u>Existing constructions</u> : whenever <ul style="list-style-type: none"> ▪ the new construction does not affects the outside aspect of an existing building ; ▪ there are no changes in the shelter and surface is smaller than 5 m². <p>NB: Micro base stations with EIRP below 5 W don't need to go through the consultation process at the ANFR and simple declaration is needed. For higher power base stations, the emission permit is issued after a consultation with other spectrum partners by the ANFR.</p>

Germany

Exposure guidelines	ICNIRP Guidelines
Planning Authority	Local planning authorities and BnetzA
Requirements for	A site certificate from BnetzA is mandatory for all sites. This ensures

⁴ According to the Jurisdiction Court, “actions meant to obtain the shut-down, the prohibition of the construction, the removal or the displacement of a duly authorized base station, sited on public or private property, on the grounds that its functioning could compromise the health of people leaving in the neighborhood or lead to interferences,” is a matter for the administrative judge.

For more information, please refer to the [governmental leaflet about roll out of the antennas](#).

planning permission	compliance with exposure guidelines and other technical requirements. Permission from local planning authorities is mandatory for all installations higher than 10m. Once the site has been constructed and before it is activated emissions authorities have to be notified.
Timescales for Permission	Typically less than six weeks. More than one year in worst cases.
Appeals process	Legal proceedings against the local authority can take up to three years, but these occur in rare cases if the operator fulfils all the requirements for the process of site acquisition.
Public Consultation	A public consultation process with local communities is mandatory for all operators and has to start before the application for a site certificate.
Exemptions & Existing site upgrade	In several states (but not all) there are exemptions for installation with poles/masts below 10 m and shelters of less than 10 m ³ . Upgrades of existing sites have to follow the same process as new sites unless the compliance area of the planned installation lies completely within the compliance area of the existing installation.

Greece

Exposure guidelines	<p>Telecom Law 4070/2012 specifies maximum exposure limits equal to 60% of ICNIRP guidelines for base stations located less than 300 m from kindergartens, schools, hospitals or nursing homes for the elderly (base stations cannot be located at any of the said premises). Limits equal to 70% apply in all other areas.</p> <p>The Greek Atomic Energy Commission (GAEC) annually audits at least 20% of urban area base stations for compliance to the above limits. Supplementary audits are carried out following requests by the national telecom regulator EETT or any natural or legal person with vested interests.</p> <p>The National EMF Observatory (presently being organised) is responsible for year round continuous monitoring of emissions from all base stations over the entire territory.</p>
Planning Authority	The national telecom regulator EETT issues the Operation License.
Requirements for planning permission	The EETT assumes the role of a one-stop-shop licensing agency whereby applications are filed through an Electronic Application Filling System (EAFS - under construction) and subsequently forwarded to the various competent authorities/agencies for co-current issuance of the relative authorizations/approvals. The final approval is issued by EETT. The competent authorities should respond back to the EETT through the EAFS within four months.

The said competent authorities/agencies are:

The Hellenic Civil Aviation Authority (HCAA – airway safety); the GAEC (exposure limits); the competent Prefecture Office (Standard Environmental Commitment for most base stations or Environmental Impact Study in cases of base stations requiring road work or are located in natural habitat areas); the EETT (frequency allocation); the local Forestry Authority (for rural base stations); the competent Archaeology Agency (cases related to sights of historic relevance) and the local Building Authority (construction Approval - not a Permit)

Timescales for
Permission

For applications filed following the issuance of Telecom Law 4070/2012 respecting new base stations or the upgrading of existing ones, base station construction is allowed four months after the filing of the application with EETT. Specifically, by the end of the four month period as of filing, EETT issues either an Operation License (if all competent authorities have issued their authorisations/approvals) or a Certificate of Application Completeness (if authorisations/approvals by the competent authorities/agencies are pending, as long as there are approvals by the HCAA and the GAEC, and frequency approval by the EETT). The Certificate is replaced by an Authorisation when all authorisations/approvals are obtained; otherwise, construction is repealed.

For base stations which existed prior to the issuance of Telecom Law 4070/2012, the completion of the process of obtaining all relevant approvals/authorisations is 24 months, given that the relevant paper work cannot be processed through the new EAFS.

Prior to the issuance of Telecom Law 4070/2012, the timescale for the entire process respecting the issuance of Operation Licenses exceeded two years.

Appeals process

An appeal can be filed with the Administrative Court of Appeal regarding individual administrative EETT Decisions (examined as an annulling case, which means limited legal basis in comparison to the examination on the merits of the case) or EETT Decisions pertaining to penalties (examination on the merits of the case). Against EETT Regulatory Decisions, appeals can be filed with the Council Of State

Disputes regarding construction Approvals are resolved at the Administrative Court of Appeals. Appeals regarding decisions of the Administrative Courts are filed with the Council of State.

All initial appeals should be filed within sixty days as of Decision notification date. Indicative timescales for appeal hearings vary considerably between twenty four months to five years.

Public Consultation	Public consultation is indirectly achieved via the involvement of a multitude of competent authorities/agencies which protect the public's interest.
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Exemptions & Existing site upgrade	Micro base stations (with total effective radiated power below 164 W EIRP) or indoor antennae require a simpler licensing procedure.
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Hungary

Exposure guidelines	National limits are based on ICNIRP
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Planning Authority	Local building authorities as part of the local municipalities issue the building permit. If site is located in/on the national monument, the building permit is issued by the regional office of the National Office of Cultural Heritage.
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Requirements for planning permission	Building permit is required for new sites when the complete size of the antenna is bigger than four meters or the complete size (including antenna) of the mast is bigger than six meters. Building permit is required for new sites if it is located in/on a national monument independently from the size of antenna or mast. General technical requirements are set by the National Construction Constitution.
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Timescales for Permission	The permission period typically six to nine months, according to regulations. Worst cases were 18 months (reg. last 2 years).
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A new regulation was issued on 1 October 2007 (with small modifications of the old reg.). (new update of the 37/2007 ÖTM resolution).

The length of a process mainly depends on, how many specialised authorities are involved (National Public Health and Medical Officer Service, National Communications Authority, etc.).

Appeals process	If the local municipality does not give permission the operators can put a request to the regional authority. At the third stage the administrative court intervenes. This may lead to a one year delay.
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Public Consultation	Public consultation with local communities is not mandatory. In cases where a planning permission is required local authorities publish notices (news-board, rarely local newspaper) and make information available in the City Hall offices. In cases where a planning permission is not required we only take action (public hearing, article in local newspaper) for example if the public anger interrupts the site establishment process, but this is very rare.
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Exemptions & Existing site upgrade	Site upgrades must follow the same process as new sites – no exceptions. In addition we have to ask building permit if we reinforce the existing foundation of the mast or the mast itself.
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Ireland

Exposure guidelines COMREG (ICNIRP Guidelines)

Planning Authority Local Authorities

Requirements for planning permission All deployment is governed under the National Planning Acts. Support structures need planning permissions. Albeit, urban development on buildings is generally planning exempt.

A directive was issued from Central Government in the form of a [Circular Letter to Planning Authorities](#) in October 2012 which reinforced previous guidance and was designed to reduce the compliance burden and costs associated with rollout of broadband infrastructure, including mobile broadband. The directive required planning authorities to:

- Permit allowed structures on a permanent basis rather than time limited "Temporary Permission" which was previously recommended
- Avoid the inclusion of minimum Separation Distances between telecoms structures and other developments or buildings e.g. Public Parks, schools, housing etc. in Development Plans or Planning Guidance
- Remove the requirement for tower developers to lodge a bond to pay for removal of redundant structures in the future
- Develop a register or permitted Telecommunications structures in their area of responsibility
- Not include radiation or other monitoring requirements in planning consent
- Waive development contributions, which are fees payable to local authorities on receipt of planning, for all broadband infrastructure

Timescales for Permission Three - six months, typically.

Appeals process If refused by Local Authority, a request can be sent to a Planning appeals board for consideration. This leads to a further three to nine months delay.

Public Consultation Planning notices must be posted on site, notices must be published in newspapers and plans available for inspection at Local Authority Offices. The public have a five week window from date of council receipt of the application within which to make observations or submissions to the proposed development. Voluntary meetings with local communities may take place.

Exemptions & Existing site upgrade Exemptions may apply to adding antennas and dishes to existing support structures and similarly to commercial buildings where the antennas don't rise more than 2 m above the roof.

Italy

Exposure guidelines	<p>EMF limits for Radio Base Stations are up to 100 times lower than ICNIRP: the Italian Law 36/2001 introduced two different limits, applicable to all radio base stations (2G and 3G)</p> <ul style="list-style-type: none">- 20 V/m; as a general limit in open areas <p>6 V/m: as a specific limit inside buildings used for more than four hours a day and in its external premises which can be used as living spaces (such as balconies, terraces and courtyards), as well as outside in the highly attended areas. The 6 V/m limit (0.1 W/m²) is 100 times lower than the EU limit set by the EU Recommendation 1999/519 for the 3G frequencies (10 W/m²)</p>
Planning Authority	Municipalities (planning issues and overall responsibility for the authorization process) and Regional Environmental Authority (providing advice to Municipalities on the EMF impact of each Radio Base Station).
Requirements for planning permission	Planning permission is required in order to construct a new site in Italy. Compliance with the national Electro Magnetic Field exposure limits, specific urban planning and building rules is required.
Timescales for Permission	<p>Timescale for permission is 30 days for activities on existing sites and 90 days for new sites.</p> <p>Decree no. 259/2003 has established that if local authorities do not oppose an authorization request within the time limit, the authorization is considered to be effective.</p> <p>For small and low power antennas an auto-certification is sufficient.</p>
Appeals process	Appeals decisions are assigned to regional administrative courts. In second instance the administrative court of the Lazio region intervenes. The process can be delayed of up to three years as a consequence.
Public Consultation	A public consultation process is not specifically foreseen. However, public consultation is indirectly achieved via the involvement of a multitude of competent authorities/agencies which protect the public's interest.
Exemptions & Existing site upgrade	Exemptions: a simplified procedure (SCIA) has been defined for new sites with power below a set threshold (20 Watt) and for existing sites' upgrade

Liechtenstein

Exposure guidelines	Liechtenstein's thresholds are set from 4 (GSM900) to 6 V/m (GSM1800 and UMTS) in sensitive areas and places, like flats, houses, workplaces, schools, etc. On other areas ICNIRP guidelines have been adopted.
Planning Authority	Office of environmental protection (AUS)

	Office of building (HBA)
Requirements for planning permission	Permissions are needed both from the office of environmental protection and from the office of building.
Timescales for Permission	Depends on the location. The numbers of new sites in the last 10 years were very low (2) and too less to estimate any time frame.
Appeals process	Within 14 days an appeal can be filed. The jurisdiction depends on what kind of appeal.
Public Consultation	Depends on the location of the site.
Exemptions & Existing site upgrade	Site upgrades must follow the same process as new sites – no exceptions.

Lithuania

Exposure guidelines	Local guidelines on power flux density $10 \mu\text{W}/\text{cm}^2$ applies derived from old USSR guidelines still applies. Sites construction on kindergartens and medical institutions is not allowed.
Planning Authority	Roof- top sites: building owners - to obtain initial agreement; regional public health centre - to review and agree on EMF and RF part of the project; regional centre of Department of Cultural Heritage under the Ministry of Culture – to agree on project for sites in cultural heritage zones; NRA – just to register RF and EMF parts of sites projects. For tower sites regional municipality is involved in addition to authorities listed above.
Requirements for planning permission	Roof-top sites: informal form to get initial permit from site owners; EMF and RF part of the project must be designed, reviewed by and agreed with regional public health centre; EMF and RF part must comply with exposure and exclusion zones guidelines. Projects for sites in cultural heritage zones must confirm with regulations for the zones. After site launch EMF monitoring plan must be designed plus health certificate confirming that site corresponds to requirements must be obtained. Tower sites – typical procedure for building permit is required so full construction project to be obtain building permit is required. All other requirements are the same as for sites on buildings. As in 2012 the authorities are considering possibly changes to regulation in this area.
Timescales for Permission	Roof- top sites legal scale is two months. It includes 20 working days or one month for RF part / EMF expertise before site launch. After sites launch EMF monitoring measurements are made; one month timeline for EMF measurements review and agreement is set; 12 working days

for health certificate issuing is set.

Tower sites – building permit must be issued in one month after detailed plan is prepared. But no timescale set preparation of legal plan are set.

Typical timescale for roof- top sites – two months.

Typical timescale for tower sites now is extended to 12 months from six months. It has happened due stricter building permits issuing procedure. In few occasions obtaining of site permits may take up to two to three years.

Appeals process

No appeals for roof-top sites as owners decide what to do with his property.

For tower sites reiterations are allowed if permissions are not granted. Also standard three level court procedures involving three levels of courts (parish court, district court, supreme court) apply.

Public Consultation

Roof- top sites – only building owners needs to be consulted and agreed during initial negotiations.

Tower sites – mandatory during detailed plan coordination and confirmation with public consultations. Typically consultation involves neighbouring inhabitants but can involve any other persons.

Exemptions & Existing site upgrade

Exemptions for in building sites and repeaters.

Formal procedure for upgrades are the same as new site but the task is much easier as initial project and work can be reused in big extent.

Luxembourg

Exposure guidelines

General law for all Regions in Luxembourg: 3 V/m per Operator and per Antenna system

Planning Authority

Regional administrations

Requirements for planning permission

Building permissions are required all installations.

Commodo/Incommodo procedure has to be applied for all installation above 100W Output power.

Timescales for Permission

Regarding building permits it is between 20 and 200 days and depends strongly on the commune and if we need an additional greenfield (environment) authorisation.

The commodo/incommode procedure is the combination of the ITM and the Environment permission. Due to the fact that there is a huge backlog we wait there for more than half a year.

Appeals process

The building permits go directly to the commune.

The commodo/incommode goes in parallel to the ITM and Environment.

Public Consultation	Local authorities publish notices on sites and make information available in the Town Council offices.
Exemptions & Existing site upgrade	No exemptions.

Macedonia

Exposure guidelines	It is expected that the new legislation, which will provide procedures for measuring EMF levels, criteria other authorized companies with the right to work transparently in EMF topic. The new legislation should apply the limits suggested by the ICNIRP. Old EMF national limits are almost twice more rigid than ICNIRP.
Planning Authority	Municipality's building department.
Requirements for planning permission	A planning permission is required for new base station. For the rooftops, structure solution for placement of equipment is required. For Greenfields structures is mandatory obtaining a building permit, which is obtained by preparing all documents according to legal requirements and elaborates on the living environment. No EMF measurements required for each new base station according old legislation.
Timescales for Permission	For rooftops, typically 60 days. For greenfield from 6 months to 3 years depending on who owns the land, private individual or state.
Appeals process	If the permission is not granted and appeal can made within 60 days to the local administration or to the administrative court.
Public Consultation	Not mandatory. Citizens may submit comments only in cases when permission is missing.
Exemptions & Existing site upgrade	Upgrade is allowed without further permission if it does not involve any change in terms of construction work. If construction upgrade of existing site is required, procedure is the same like building a new one.

Malta

Exposure guidelines	ICNIRP guidelines
Planning Authority	Malta Environment and Planning Authority (MEPA)
Requirements for planning permission	Planning application required for site installation on agricultural buildings in the countryside, beach room, kiosk, fireworks factory which happen to be outside the defined Development Zone. Also included are outside development zone areas intended for parking of vehicles or storage of machinery, scheduled property and listed buildings.
Timescales for Permission	Minimum 3 months. Can take longer in sensitive areas. Typical four to Six months.

Appeals process	Submission to MEPA Planning appeals board.
Public Consultation	In cases where a planning permission is required the application will also be made public for informative purposes.
Exemptions & Existing site upgrade	No permits required for installations in non-sensitive sites or buildings with the Development Zone.

Montenegro

Exposure guidelines	National limits are based on ICNIRP
Planning Authority	Municipalities.
Requirements for planning permission	Building permits are required for all new sites. In order to get the building permit the operator has to have: the radio permit issued by NRA; the electrical power approval issued by Montenegrin Electrical Power Trade; the fire protection approval issued by Ministry of Internal Affairs and the ecological approval issued by municipality.
Timescales for Permission	Typically 12 months (it takes six months to get the ecological approval).
Appeals process	If the municipality does not provide the permission, operators could appeal to the Chief administrator of the local government.
Public Consultation	Public consultations with local communities are mandatory.
Exemptions & Existing site upgrade	Exemptions for indoor repeaters. Existing site upgrades are considered as adaptation, and only requested is the radio permit update.

The Netherlands

Exposure guidelines	ICNIRP guidelines
Planning Authority	Municipality
Requirements for planning permission	The National Antenna Policy sets tiers of requirements according to size of masts: full building permit (more than 40 m), light building permit (5 to 40m). Installations shorter than 5 m do not need a building permit but requirements are adjusted with a pre-planning meeting with municipalities. For residential buildings, tenants are involved in the building process for antennas below 5 meters. (If 50% or more of the tenants is not in favour, they can stop the building process).
Timescales for Permission	Permissions with light requirements normally take three to five months. Full requirements permissions take 9 - 15 months to be granted.
Appeals process	Appeal processes go through civil courts and this can add up to five months delay.
Public Consultation	The self-regulatory agreement of the industry with the government provides a mandatory consultation with municipalities (at least once a year) and with tenants of residential buildings.
Exemptions & Existing site upgrade	Most upgrades are permit-free – depends on construction and environmental impact.

Norway

Exposure guidelines	National limits based on ICNIRP.
Planning Authority	Municipality
Requirements for planning permission	Each green field base station requires a building application. If the area (space) is regulated for agricultural area, outdoor life area, natural area, etc., dispensation application has to be sent as well as the building application to the Planning Authority. If the mast is higher than 15 metres a report has to be sent to The National register over obstructions to air navigation (NLR).
Timescales for Permission	Typically four weeks. If the project require a dispensation (see above) case handling in the municipality can be from three months up to two years..
Appeals process	Different stakeholders e.g. neighbours can appeal to the next-level authority which is the county administrator.
Public Consultation	The applicant (the mobile operator in this case) has to inform the citizens affected, i.e. neighbours.
Exemptions & Existing site upgrade	<p>Simple upgrades or sharing of sites do not require further permissions.</p> <p>In July 2013 a modification of the building regulations was issued to simplify establishments of antennas.</p> <p>Exemptions from case handling in the municipality if the project otherwise is in accordance with The Planning and Building Act, include the following:</p> <p>Smaller antenna installations. A mast may have a height of up to 2.0 meters. A parabolic antenna may have a diameter up to 1.2 meters. An Omnidirectional antenna or Panel antenna used for mobile communication may have a maximum height of 3.0 meters with a base of a maximum 2.5 meters if the installation is placed on an existing mast or a roof top, and the total height of antenna including the base does not exceed 4.0 meters. A Panel antenna for mobile communication mounted onto a wall may have a maximum height of 2.0 meters.</p>

Poland

Exposure guidelines	National Law (not based on ICNIRP). 0.1 W/m ² for unlimited exposure duration for frequencies from 300 MHz to 3000 GHz.
Planning Authority	Municipality or local government
Requirements for planning permission	Requirements are defined at the national level by planning law, building permits and ensure compliance with environmental requirements
Timescales for Permission	A new a tower - theoretically six months but practically from 18 months to 24 months. An upgrade - from zero months (the construction < 3 m) to six months
Appeals process	If the requirements concerning the classification of the object as having no impact on the environment are met an appeals process does not occur
Public Consultation	Public consultation is not mandatory.

Exemptions & Existing site upgrade	Upgrades existing sites that are not likely to have a negative impact on the environment and do not require construction of more than 3 m does not require obtaining permits. It is necessary to fulfil the requirements for safety levels of EMF (0.1 W/m ²)
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Portugal

Exposure guidelines	ICNIRP
Planning Authority	Municipality
Requirements for planning permission	A building permission is needed for all new sites. Decree-Law 11/2003 regulates it. In all cases compliance with radiofrequency exposure limits and specific urban planning and building rules must be met. Rooftop installations on residential buildings require an authorization from owners.
Timescales for Permission	The local municipality has to clear a request in 30 days. Otherwise, tacit approval.
Appeals process	Through administrative courts. Delay up to two years.
Public Consultation	Not mandatory.
Exemptions & Existing site upgrade	Temporary base stations and site upgrades do not need planning permissions.

Romania

Exposure guidelines	ICNIRP
Planning Authority	Municipality
Requirements for planning permission	Building permit (requires lease contract, construction project, neighbour agreement in case of towers, agreement from all or 50%+1 the tenants and notarial agreements for the direct affected tenants in case of apartment buildings), Radio Emitter Permit from National regulator and Public Health Institute impact study. Requirements from local authorities for building permit may vary and some have even forbidden the construction of mobile telephony base stations within city limits
Timescales for Permission	Up to 12 months. In some cases, the term is bigger.
Appeals process	Negotiation processes or finding new sites are generally preferred to formal appeal.
Public Consultation	Not mandatory.
Exemptions & Existing site upgrade	Upgrades go through the same process as new sites.

Serbia

Exposure guidelines	<p>Exposure limits are based on ICNIRP, but scaled down.</p> <p>The bylaw setting the exposure limits is based on the ICNIRP / 1999/519/EC recommendation. It introduces a system of Basic restrictions and Reference levels. The Basic restrictions have the ICNIRP values, but the Reference levels are scaled down 6.25 times (in terms of power density), allegedly based on paragraph 15 of the 1999/519/EC recommendations preamble (Member States may, in accordance with the Treaty, provide for a higher level of protection than that set out in this recommendation).</p> <p>Furthermore, <i>Significant Non-Ionizing radiation sources</i> are defined as non-ionizing radiation sources that can generate EM fields with power densities higher than 1% of the Reference levels, within sensitive areas. It is also stated, in the Law on Non-Ionizing radiation protection, that these <i>Significant sources</i> “may be hazardous to health according to the best available scientific knowledge”. Compared to the ICNIRP: a safety factor of 10 provides sufficient protection for occupational exposure and a safety factor of 50 is sufficient for the general public; in Serbia, if the safety factor is less than 31,250, the BTS “may be hazardous to health”.</p>
Planning Authority	Relevant local municipality.
Requirements for planning permission	<p>Vary on base station type. For Rooftops, no building permit is required, only the Non-Ionizing legislation process (in most cases, calculations are submitted, and certain measures are done: always the first measurement, for some locations also periodical measurements; on occasions, an Environment estimation Study is requested)</p> <p>Additionally, general construction laws have to be obeyed and permissions under these laws, if applicable, have to be obtained (e.g. air traffic safety, forest protection, fire protection etc.)</p>
Timescales for Permission	Vary on municipality and site type. The laws in all the municipalities are the same, but personal attitude on base stations of the people working in the local planning and environment authorities determines the timescale. Also, Rooftop and Existing Tower locations require fewer permits. These permissions might be obtained in a minimum of 3 months. On most locations, the permitting process is completed within 9 months. Some took up to 2 years.
Appeals process	Depends on the licence requested. Some appeals go to second stage of making decisions; some go directly to the Ministry. In case they rule us out twice, we can go to court. The periods in which we must appeal are usually eight or 15 days, whilst typical legal period for the authorities to respond is 30 days. We must respect the periods, the authorities not so much.
Public Consultation	The only legal way for the public to state their opinion is in those cases where a ‘study of environmental influence’ is requested. Once finished, the study is publically displayed for 40 days, and all interested parties

can comment. Also, there is a public presentation of the study (in most cases not highly attended by the public, but often very unpleasant when attended) where again anybody concerned can express an opinion. There is a committee of three members, formed locally, that decides on the study and the concerned opinions.

Few public consultations on reallocating planned masts were tried, and certain solutions have been found. Unfortunately later they stuck on property issues, as local communities often do not possess the land they use.

Unfortunately, it has happened that public reaction is so strong, that the planning and/or environmental authorities bend or completely void the law and the bylaws and deny issuing the permits.

Exemptions &
Existing site upgrade

No exemptions.

Upgrade of existing sites has to follow the same processes as building a new one, unless additional antennas and equipment were included in the original plan for which a permit was already obtained.

Slovakia

Exposure guidelines

EU recommendation – Ref: Act No.355/2007 on the protection, promotion and development of public health and amending some laws.

Planning Authority

Local authorities, Telecom Office, Ministry of Health, Environmental Offices.

Requirements for
planning permission

Requirements at the national level are defined by the Construction Act, Electronic Communication Act, Public and Occupational Health Protection Act, Law on Nature Protection Act.

Timescales for
Permission

Three to 12 months.

Appeals process

Appeals can be made to higher-level government authority.

Public Consultation

Not mandatory.

Exemptions & Existing
site upgrade

If a site upgrade qualifies for a "minor construction", the process for obtaining building permit is shortened. Otherwise, there is no exemption for upgrade, and the regular construction permit process applies. In case of antenna upgrade, new power output measurement is necessary.

Slovenia

Exposure guidelines

National document: Uredba o elektromagnetnih sevanjih v naravnem in življenskem okolju 1996 based on ICNIRP values. Limits are below those of the EU Recommendation 1999/519/EC.

Planning Authority	Ministry of Education, Science and Sport, http://www.mizs.gov.si/si/delovna_podrocja/direktorat_za_informacij_sko_druzbo/
Requirements for planning permission	Base stations shall be designed fulfilling requirements contained in new law of electronic communications. The relevant authority to evaluate the request is the local municipality in cases for simple object such as rooftops up to 10 m. The Ministry instead has to evaluate requests related to complex objects, such as new towers. EMF measurements shall be done for all new base stations.
Timescales for Permission	Typically six months.
Appeals process	Appeals go through a standard administrative suit procedure.
Public Consultation	Local authorities evaluate on a case-by-case basis whether a public hearing with affected neighbours is mandatory. EMS Forum is an organization which taking care for competent, objective and impartial informing and communicating with public (http://www.forum-ems.si/index.html)
Exemptions & Existing site upgrade	No exemptions. Existing site upgrades considered as investment maintenance. All upgrades shall comply with EMR limits. New “Rules for simple communication facilities and maintenance of communication facilities” has been issued with 1.of October 2013

Spain	A new version of the General Telecommunications Law is currently in the last phase of amendments and a new version will probably be released in early 2014. The new law aims at simplifying administrative procedures and bureaucracy in general and at avoiding administrative barriers to the deployment of the networks.
Exposure guidelines	Royal Decree 1066/2001 of 28 September, which approves the Regulation establishing conditions for the protection of public radio, radio emissions restrictions and measures of health protection against radio emissions (based ICNIRP limits).
Planning Authority	Municipality and Autonomous Community / Regional Government (Spain has 17 Autonomous Communities)
Requirements for planning permission	First: Construction License (Municipality), Activity License (Municipality or Autonomous Community / Regional Government – Spain has 17 Autonomous Communities). 2nd: Once the station is built, the Municipality checks: <ul style="list-style-type: none"> - That what was planned is indeed built: Occupation License - The activity: Functional License (regular inspection, no RF) Documentation: Building project certificated by an architect, Environmental impact study (does not include anything regarding radiation), deployment plans. Depends on the Municipality / Autonomous Community.
Timescales for	More or less three months. This depends on the ordinance; the typical

Permission	<p>period to receive approval to build a site is 18 months (if obtained).</p> <p>The worst case length of time to get approval to build a site is from two to three years.</p>
Appeals process	<p>First appeal can be made against the local administration (Juzgado Contencioso Administrativo) that issued the permit. In second instance the standard judicial procedure has to be followed. If it goes further, Justice Superior Court (Auto. Comuni) or Supreme Court (National). Any interested party, including neighbours has the right to lodge an appeal. Appeals typically one to three years. Eight to 10 years in extreme cases. New Doctrine of the Constitutional Court and Supreme Court jurisprudence establishing the exclusive competence of State regulation on basic health facilities and telecommunications radio. The Constitutional Court, a body of interpretation of the Spanish Constitution, by judgment on the constitutionality of a regional law (Ley de Castilla-La Mancha) regulating technical aspects of radio facilities. The Constitutional Court passes verdict on any regional/local legislation which regulates telecommunications and technical aspects of health protection other than the rules of the States are considered void. The Supreme Court (highest court), and some chambers of the Regional Superior Courts of Justices, are agreeing to cancel regional and local standards governing technical aspects of the radio installations specified following the Doctrine of the Constitutional Court.</p>
Public Consultation	<p>The consultation or notification is not required for all sites, depends on the ordinance / municipality. When operators apply for a license, depending on the ordinance, there may be an obligation to notify all the neighbors. Some Town Councils may not only impose public inquiry but even an individual notice to each potentially interested party. In such a case, the residents have the right to make claims, which is part of the process of obtaining license. The operator then has to prove that communication and subsequent report in the Bulletin have been carried out. The Operator and/or the Municipality undertake the consultation. Approval of new release endorsing State regulation of municipal authorizations on matters affecting the radio installations. The Spanish government, implementing structural reforms Plan submitted the European Commission, is reforming all laws applicable to the obligation to obtain authorizations from the authorities to provide services, modifying, in general, these rules liberalizing other administrative processes. A reduced procedure only requiring advance notice to the Administration to provide services, interpreting the permissions needed to install base stations, compliance with state standards of control, would be within this new scheme of advance notice.</p>
Exemptions & Existing site upgrade	<p>In some areas, e.g. Galicia, there are simplified procedures when operators decide to install microcells.</p>

There are exemptions or simplified procedures for changes to existing sites, sometimes. The need to follow complete procedures depends on the level of details in the application submitted in the first place. If the initial project was well described to include possible changes in the installation, and if the change made on the existing site was considered in the initial project, then the Town Council may authorize to make the change without applying again. If any change, even small, was not planned or identified in the initial project, then there should be no exemption. If the change is major (e.g. tower replacement), full submission will be requested.

Switzerland

Exposure guidelines	ICNIRP reference levels are applied for protection against proven adverse health effects. They must be respected anytime at all places accessible to persons. In addition precautionary exposure limitations, so called installation limit values, must be respected at places of sensitive use, e.g. apartments, schools, hospitals, permanent workplaces, children playgrounds. These precautionary exposure limits are 10 times below ICNIRP recommendations. They refer not only to the installation of one single operator but consider also mobile transmitters in vicinity (up to 100 m distance and more, depending on the emission power). The compliance with the exposure guidelines must be guaranteed by the operator with a certified quality assurance system. In addition authorities order EMF measurements on site.
Planning Authority	Municipality
Requirements for planning permission	Each base station requires a full planning permission. Even if it is built on existing infrastructure. Compliance with national environmental regulations, spatial planning regulation and the local construction guidelines have to be met.
Timescales for Permission	Typically one to two years. Worst cases are delayed up to five years.
Appeals process	Different stakeholders can appeal to the next-level court (sequence: local administration, first level of appeal, cantonal court and national court).
Public Consultation	A public consultation is mandatory.
Exemptions & Existing site upgrade	No exemptions. Upgrades have to be resubmitted to the planning authorities if the exposure around the installation changes. Compliance has to be re-confirmed. Public consultation is again mandatory and the possibility of appeals is renewed.
	Since 2013 it is possible to shift the emission power from one frequency band to the other without resubmitting a new building permit application, as long as the emission comes from the same antenna panel.

Furthermore, criteria have been defined under which the changes in the exposure are judged to be minor. In such a case, the changes of the site can be implemented without asking for a new building permit.

Sweden

Exposure guidelines	National limits based on ICNIRP.
Planning Authority	Municipality
Requirements for planning permission	Each green field base station requires a full planning permission. Compliance with regulations from the Swedish Airport Navigation Service and the Swedish Armed Forces must be met.
Timescales for Permission	Typically three months. Worst cases are delayed up to one year.
Appeals process	Different stakeholders can appeal to the next-level court (sequence: local government, county administration, Administrative Court, Administrative Court of Appeal and Supreme Administrative Court).
Public Consultation	Each municipality can decide whether to impose a consultation and to whatever extent and they wish.
Exemptions & Existing site upgrade	No exemptions. Upgrades do not need to comply with additional requirements.

Turkey

Exposure guidelines	Turkey has adopted ICNIRP limit values for a given area, but specific limits of $\frac{1}{4}$ of ICNIRP are applied per installation.
Planning Authority	The Information and Communication Technologies Authority (Bilgi Teknolojileri ve İletişim Kurumu) plays the role of both the RF and planning authority.
Requirements for planning permission	The documentation to be submitted is called Montaj Survey. It contains all engineering plans with photograph, antenna performance, building plan, measurements. 2-D dimension field information and RF measurements
Timescales for Permission	According to the ordinances, the Information and Communication Technologies Authority must give the certificate in one month. But sometimes it takes more than one month. This may be extended due to the public reaction as well. Typically three months in total.
Appeals process	None. There is the possibility to apply 4 or 5 times again. Hence no authority that deals with the appeal.
Public Consultation	There are no mandatory procedures for public consultation or notification. Only voluntary procedures. However the Information and Communication Technologies Authority set up a web base tool for public, which can be searched for the EMR values of nearest mobile GSM base station sites around specific locations.
Exemptions & Existing	There are no exemptions for small antennas. For picocells, microcells

site upgrade	and macrocells, a certificate is needed. There is no simplified procedure for low power stations either. Femtocells are different – the device must be compliant. For any significant change (safety distance, additional antenna, antenna position / beam direction or higher power), a new certificate must be obtained. If the power is decreased, there is no need for application for a new certificate but only for a simple declaration.
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United Kingdom

Exposure guidelines	ICNIRP exposure guidelines adopted in the UK in 2000. All base stations deployed are certified as ICNIRP compliant. Ofcom (the industry regulator) undertakes audits of base station emissions on request from the public.
Planning Authority	Municipalities in England, Scotland and Wales. In Northern Ireland Planning Service
Requirements for planning permission	<p>Throughout the UK minor works constitute Permitted Development which does not require planning permission. The definition of “minor works” varies between England, Northern Ireland, Scotland and Wales. More Permitted Development is allowed in England. In England and Wales there is a system known as Prior Approval which is an intermediate stage between Permitted Development and Full Planning. The Code of Best Practice on Mobile Phone Network Development provides advice on consultation and planning procedures in England and Wales.</p> <p>http://www.mobilemastinfo.com/images/stories/2013_Code_of_best_practice/Code_of_Best_Practice_on_Mobile_Network_Development_-_Published_24-07-2013.pdf</p> <p>http://www.mobilemastinfo.com/images/stories/documents/pdf/Mobile_Networks_-_What_They_Are_How_They_Work_-_Final_Revised_-22-08-13.pdf</p> <p>Scotland and Northern Ireland have their own advice documents.</p>
Timescales for Permission	<ul style="list-style-type: none"> • 56 Days for prior approval applications (e.g. ground based masts below 15 metres and some rooftop developments in England and Wales). • Around 80-100 days for other “full planning” applications for larger developments or development in sensitive environmental areas (e.g. Conservation Areas).
Appeals process	If a planning or Prior Approval application is refused operators can refer to the Planning Inspectorate (governmental agency). There is no third party right of appeal. In Scotland, from 3rd August 2009, those applications dealt with by a planning officer under ‘delegated powers’ are now (if the application is rejected) be appealed to a local

	member review body. Appeals made against a decision of a planning committee (made up of elected local councillors) will be dealt with by Scottish Ministers.
Public Consultation	Pre-application consultations are carried out by operators following the Code of Best Practice. A Public consultation post application submission is carried out by the Local Planning Authority and is defined in the planning regulations for that region.
Exemptions & Existing site upgrade	Masts below 15 m can go through a simplified procedure (see above). Minor upgrades are permitted for non-sensitive areas.

5. Guidelines for Network Deployment Principles

The GSM Association recognises that there is public concern about the aesthetics of siting and allegations of possible health effects of radio base stations. This public concern is in contrast to a number of independent expert reviews that have concluded that there is no convincing scientific evidence of a link between public exposure to low level radio signals generated by mobile telecommunications systems and adverse human health effects. The wireless industry acknowledges that there is a responsibility on it, with central and local government, to address community concerns about radio base stations.

Background to the Guidelines

The main elements of these guidelines include clear information exchange with local authorities and other key stakeholders, proactive operator site sharing initiatives when feasible, environmental sensitivity considerations, and more efficient and detailed availability of data. The key health and safety aspects include operator provision of declarations of network infrastructure compliance with relevant national or international guidelines.

These guidelines are consistent with voluntary commitments made by GSM Association members in Australia, the UK, and other countries and with the GSMA Europe 'best practice' recommendation on network rollout adopted in late 2001.

The GSM Association Guidelines

- The GSM Association and its Members welcome continuing independent, high quality and objective research and are currently supporting research recommended by the World Health Organisation to address scientific uncertainties. On-going research will ensure that policy can be based on substantiated scientific evidence and will provide the basis for on-going review of exposure guidelines.
- The GSM Association believes that all existing and new radio base stations should be designed to comply with relevant national radiofrequency exposure guidelines. The GSM Association supports national exposure guidelines that are based on sound scientific evidence and are subject to on-going expert review. We encourage international harmonisation of standards. The GSM Association opposes the imposition of local unscientific restrictions on siting that discriminate against mobile communications.
- GSM Association members should consider the appropriate form for a declaration of compliance with radiofrequency exposure guidelines. This would support openness and improve the confidence of local communities in the compliant operation of base stations.

- The GSM Association believes that the provision of technological information to regulatory and planning authorities is an effective means of raising awareness and understanding of the deployment issues confronting Members.
- Improved dialogue with local authorities and other key regulatory stakeholders will increase understanding of network infrastructure development requirements and the impacts of local planning frameworks. The consultation process should take into account planning, environmental and community issues.
- GSM Association Members should consider whether communication with regulatory and planning authorities could be improved through the use of clear and consistent supporting documentation.
- Site sharing with other radio installations or existing structures, where technically feasible and in line with competition law and licensing conditions, should be factored into decisions on the most environmentally appropriate radio base station solution.
- Appropriate siting and design that reduces the visual profile of antennas can help allay public concerns. The GSM Association recognises that, where reasonable and practical, measures can be taken to minimise the environmental impact of radio base station developments.
- The GSM Association supports clear processes to respond to enquiries about radio base stations and that the information provided to the public needs to be of a high standard.

6. Glossary

Acronym	Description
3G	3rd Generation Mobile Telecommunications.
4G	4th Generation Mobile Telecommunications.
Base Station	Radio transmitter and receiver used for transmitting and receiving voice and data to and from mobile phones in a particular cell. Mobile networks consist of interconnected base station sites serving areas called cells, giving rise to the terms cellular communications and cellphone. Each antenna site or base station consists of a mast or existing building to support the antennas and associated transmission and network equipment. The radio signals are transmitted by the antennas and not by the supporting structures. The number of frequencies available for use by mobile networks is small compared to the number of subscribers so the same frequencies have to be re-used. To avoid interference, base stations using the same frequency must transmit at low power and be separated by distance.
EMF	Electromagnetic field. Electromagnetic waves are emitted by many natural and man-made sources and play a very important part in our lives. Electromagnetic waves are used to transmit and receive signals from mobiles phones and their base stations. The type of electromagnetic waves mobile phones use is called radio frequency (RF) waves/fields.
LTE	Long Term Evolution, "4th generation" standard for wireless communications technology.
ICNIRP	International Commission on Non-Ionizing Radiation Protection
Mast	A ground-based structure that supports antennas at a height where they can satisfactorily send and receive radio waves. A typical mast is 15m high, and of steel lattice or tubular steel construction. New slimmer versions of masts are now available which can be painted to blend in with their surroundings, disguised as trees or used in conjunction with street lighting and CCTV cameras. Masts themselves play no part in the transmission of the radio waves.
Microcell	Microcells provide additional coverage and capacity where there are high numbers of users within urban and suburban macrocells. The antennas for microcells are mounted at street level, typically on the external walls of existing structures, lamp-posts and other street furniture. Microcell antennas are smaller than macrocell antennas and when mounted on existing structures can often be disguised as building features. Microcells provide radio coverage over distances, typically between 300m and 1000m and have lower output powers compared to macrocells, usually a few watts.
Picocell	A picocell provides more localised coverage than a microcell. These are normally found inside buildings where coverage is poor or where there are a high number of users such as airport terminals, train stations or shopping centres.
UMTS	Third generation mobile cellular technology.
GSM	Global System for Mobile Communications, second generation standard for networks.



Europe

About the GSMA

The GSMA represents the interests of mobile operators worldwide. Spanning 219 countries, the GSMA unites nearly 800 of the world's mobile operators, as well as more than 200 companies in the broader mobile ecosystem, including handset makers, software companies, equipment providers, Internet companies, and media and entertainment organisations. The GSMA also produces industry-leading events such as the Mobile World Congress and Mobile Asia Congress.

For more information, please visit Mobile World Live, the online portal for the mobile communications industry, at www.mobileworldlive.com or the GSMA corporate website at www.gsmworld.com

In the European Union the GSMA represents over 100 operators providing more than 600 million subscriber connections across the region. www.gsmworld.com/gsma_europe

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