

mobile inSite

news, issues and science on mobile
telecommunications deployment

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Editorial

Welcome to the September 2011 edition of *Mobile InSite*, the Mobile Carriers Forum's newsletter on news, science and policy decisions about mobile telecommunications networks.

Australia's telecommunications regulator the ACMA said they expect Australia's mobile carriers to deploy more network infrastructure to meet their customer's demand for access to faster mobile data in a wider coverage area. But with more base station deployment there is sure to be more concern from the community in regard to the health effects of mobile phone technology. As explained in this edition of *Mobile InSite* it is up to the industry to better educate the public about how mobile networks operate if they are to allay these community concerns.

The [recent classification](#) of radio frequency fields as "possibly carcinogenic" by the International Agency for Research on Cancer, and the response from the [World Health Organisation](#) have already been a source of some confusion in the community about the health effects from mobile phone radio signals.

The Australian radiation protection agency [ARPANSA](#) have said the public should not be alarmed by the IARC classification and have restated their position that there is no scientific evidence to suggest that living close to a base station or using a mobile telephone poses a health hazard.

In light of the IARC assessment, the mobiles industry is investing more time and energy into [community consultation](#) in an effort to explain the



precautionary measures the industry takes when deploying network infrastructure. The success of the consultation process under the ACIF code can be seen in figures from last financial year where carriers recorded [complaints at less than one per cent](#) of the more than four thousand sites where they carried out notification and consultation programs.

Editorial

Our report on [Swiss research](#) that found people were more likely to support mobile phone towers in residential areas if they better understood how base stations and handsets adapt their power output, highlights an opportunity for carriers to better explain how placing antennas near mobile users and providing good network coverage actually reduces emissions from both towers and handsets. Many residents don't realise that both mobile phones and their base stations are designed to operate at the lowest levels to make a quality call and so the best location to build base stations in order to minimise emissions, is often closest to where the services are required. This common misconception is also looked at in our article on [exclusion zones](#).

The industry is also addressing the environmental and financial challenges of increasing energy usage across the mobile network with the launch of Australia's first energy efficiency training program for industry employees at the 'Smart Power for Smart Telecom Networks' Conference in Sydney this September. [The Energy Efficiency Training Program](#) is an interactive online learning program that will help mobile carriers service more subscribers with less energy.

Other articles covered in this edition include Australia's telecommunications regulator the ACMA says demand for mobile data requires more spectrum and more infrastructure, the MCF discussed Queensland's future planning laws with the Deputy Premier Paul Lucas and the 3

network carriers, a comprehensive analysis has found people claiming to be especially sensitive are not psychologically damaged by mobile phone emissions and public reassurance is a challenge despite the lack of evidence of a link between health effects and mobile phone signals according to German researchers.

As always we appreciate any feedback from our stakeholders within industry, government and the community about any of the stories in this edition.

Matt Evans
Program Manager
Mobile Carriers Forum

International cancer research agency finds mobile phones are possibly carcinogenic

The radiofrequency electromagnetic fields emitted by mobile phones are possibly carcinogenic to humans the International Agency for Research on Cancer (IARC) announced in early June.

IARC classified radio frequency electromagnetic fields as possibly carcinogenic to humans (Group 2B), based on an increased risk for [glioma](#) – a malignant type of brain cancer – associated with wireless phone use its [statement](#) said.

“The evidence, while still accumulating, is strong enough to support a conclusion and the 2B classification. The conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk,” Dr Jonathan Samet the overall Chairman of the Working Group said.

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International cancer research agency finds mobile phones are possibly carcinogenic

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Dr Robert Baan, Dr Kurt Straif and Dr Christopher Wild of the International Agency for Research on Cancer (IARC) led a panel of 31 independent experts through the eight-day monograph meeting, which classified radio frequency electromagnetic fields as possibly carcinogenic to humans (Group 2B).

The classification was largely based on the results of a small group of ‘heavy users’ of the 13 country INTERPHONE project which looked at mobile phone use and head and neck cancers.

However, in a press conference to announce the classification IARC cautioned that current scientific evidence showed only a possible link, not a proven one, between wireless devices and cancers.

“There is some evidence for an increased risk of glioma” and acoustic neuroma – a benign tumour of the ear nerve – said Kurt Straif, head of the IARC Monographs Program. “It’s not at the moment clearly established that the use of mobile phones does in fact cause cancer.”

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International cancer research agency finds mobile phones are possibly carcinogenic

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IARC Classification and Base Stations

However, the 2B classification was not limited to mobile phones IARC said. It has “broad applicability” to all sources of RF radiation, Dr Samet said at the press conference.

IARC have now published the [summary](#) of the classification decision in *The Lancet Oncology* journal and have also explained that exposures for base stations are much lower than from mobile phone handsets.

“The general population receives the highest exposure from transmitters close to the body, such as handheld devices like mobile telephones,” the summary says.

“Typical exposures to the brain from rooftop or tower-mounted mobile-phone base stations and

International Agency for Research on Cancer



from TV and radio stations are several orders of magnitude lower than those from ...handsets.”

The much lower level of exposure from base stations is regularly confirmed by ongoing and independent [audits of Australian base station sites](#) by the Australian Radiation and Nuclear Safety Agency (ARPANSA). These audits show that base stations operate at [hundreds to thousands of times below](#) the exposure limits set in the Australian safety standard.

Since the IARC classification ARPANSA have also updated their [fact sheet](#) on mobile phone base stations and health and concluded:

“No adverse health effects are expected from continuous exposure to the RF radiation emitted by the antennas on mobile telephone base station towers.”

The IARC assessment will now be considered by health authorities, such as the World Health Organisation, in order to evaluate if there are any overall impacts on our health from base stations and what needs to be done in order to address them.

The WHO will conduct a formal risk assessment of all studied health outcomes from exposure to radiofrequency fields in 2012.

WHO clarifies mobile phones not shown to cause health effects



World Health
Organization

Despite the classification of mobile phones as a ‘possible carcinogen’ by the International Agency for Research on Cancer (IARC) the World Health Organization (WHO) has clarified that no adverse health effects have been shown to be caused by mobile phones.

Following the IARC announcement in early June the WHO updated its overall fact sheet – [number 193](#) – on electrometric fields and health regarding mobile phones and while acknowledging the IARC classification still said mobile phones were not known to cause any health problems.

“A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phone use,” the June 2011 fact sheet concluded.

This fact sheet does not cover mobile phone base stations or Wi-Fi health concerns which are

addressed in a separate fact sheet – [number 304](#) – which was first published in May 2006, but is the most up-to-date on this topic.

The different WHO fact sheets and their relevance to the IARC classification has caused some confusion about the accuracy of information often provided to concerned residents.

In one very public example, the residents of the Scottish town of Rutherglen near Glasgow complained to their local newspaper, [the Rutherglen Reformer](#), they had been given out of date information about the dangers of phone masts in early July.

The residents claimed Cornerstone, a joint initiative between O2 and Vodafone to share mobile phone infrastructure, who proposed to build a base station nearby had avoided mentioning the IARC classification because it

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WHO clarifies mobile phones not shown to cause health effects

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was not mentioned in fact sheet 304 about base stations they provided as part of the community consultation.

However, Cornerstone had provided the most up-to-date WHO fact sheet on base stations, because only the fact sheet on mobile phone handsets mentioned the IARC classification.

The WHO fact sheet on handsets acknowledges the IARC classification because it was largely based on the results the 13 country [INTERPHONE](#) project which looked at mobile phone use and head and neck cancers. The study was not a study of base station exposures.

There has also been confusion between IARC and the WHO over the classification. Because IARC is an agency of the WHO and it was widely reported the WHO not IARC had classified mobile phone technologies as a possible carcinogen

– this apparent sudden change of view was confusing for some media organisations.

Some tabloid newspapers such as [The Sun](#) in the UK ran articles with headlines such as “**World health chiefs in U-turn on phone fears.**”

IARC undertook a hazard identification process which is designed by default to red flag any potential concerns, but did not quantify the risk or likelihood of cancer.

The assessment of health risks is the responsibility of another part of the WHO – the International Electromagnetic Fields (EMF) Project – which was set up in 1996 to assess the scientific evidence of possible adverse health effects from electromagnetic fields.

The WHO EMF Project will conduct a formal risk assessment of all studied health outcomes from exposure to radio frequency fields in 2012.



Australia's radiation protection agency says public should not be alarmed by IARC classification

The recent classification of radio frequency (RF) fields as 'possibly carcinogenic' by the International Agency for Research on Cancer should not alarm mobile phone users or those worried about emissions from base stations, Australia's radiation protection agency has said.

"ARPANSA does not consider that the new classification should give rise to any alarm," the agency said in a [statement](#) after the announcement.

ARPANSA noted IARC's classification was based primarily on limited evidence from studies of heavy mobile phone users and although RF fields from mobile phone base stations were included in the assessment, typical exposures are far below those of handsets.



Australian Government
**Australian Radiation Protection
and Nuclear Safety Agency**

"IARC's classification was based primarily on epidemiological studies of glioma, a malignant type of brain cancer, which some studies have shown to occur more frequently in heavy users of mobile phones. These studies could not rule out other possibilities for the apparent increase in risk but indicated that radio frequency electromagnetic fields were credible as a cause," ARPANSA said in a [statement](#) after the IARC announcement.

"Typical exposures to the public from mobile phone base stations are well below international and Australian exposure limits and very far below the localised exposures from mobile phone handsets."

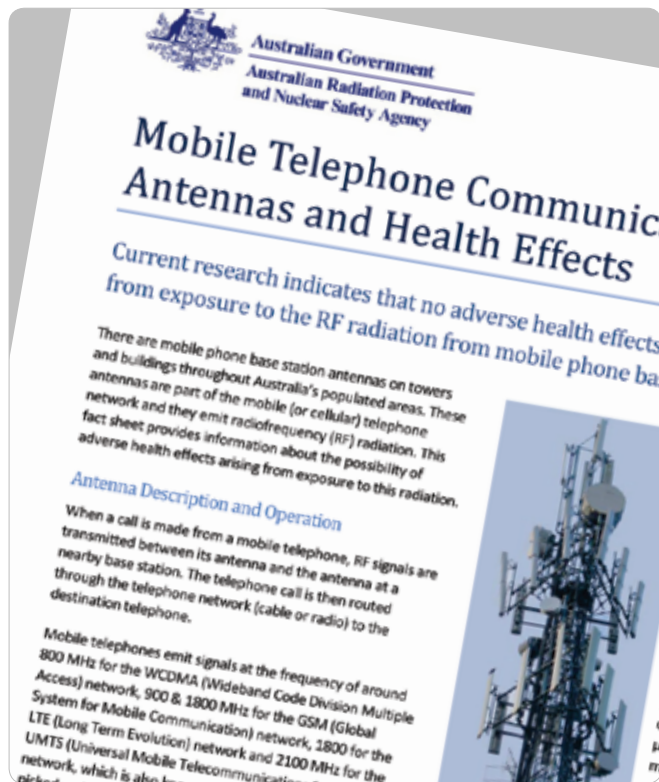
ARPANSA have also restated their position on the safety on mobile phone base stations in an update to their [EME series](#) of fact sheets.

"There is no clear evidence in the existing scientific literature that living close to a base station or using a mobile telephone poses a long-term public health hazard (although the possibility of harm cannot be ruled out)," ARPANSA's [overall fact sheet](#) on electromagnetic energy says.

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Australia's radiation protection agency says public should not be alarmed by IARC classification

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“The RF emissions from mobile phone base stations can be measured and have been shown to be weak in the everyday environment.”

“At typical levels, mobile phone base station emissions are hundreds of times below the general public exposure limit of around 4.5-10 watts per square metre (frequency dependent) as set out in the ARPANSA standard or around 5000 times below the level where significant heating can occur.”

In ‘[mobile telephone communication antennas and health effects](#)’ a brand new publication from ARPANSA’s new series of general fact sheets, ARPANSA say they don’t expect any adverse health effects, including cancer, to be linked to the RF fields emitted by mobile phone base stations based on the lack of evidence from laboratory studies and reviews of the scientific literature.

“No adverse health effects are expected from continuous exposure to the RF radiation emitted by the antennas on mobile telephone base station towers,” ARPANSA’s [fact sheet](#) on base stations said.

“While human studies to assess the possibility that RF exposure increases the risk of cancer are few in number, laboratory studies do not provide evidence to support the notion that RF fields cause cancer.”

“Review groups evaluating the state of knowledge about possible links between RF exposure and excess risk of cancer have concluded that there is no clear evidence for any links.”

ARPANSA’s new series of general fact sheets and the recently updated EME series of fact sheets can be viewed [here](#).

MCF launch online Energy Efficiency Training Program

The Mobile Carriers Forum has launched Australia's first energy efficiency training program for industry employees at the '[Smart Power for Smart Telecom Networks](#)' Conference in Sydney this September.

The Energy Efficiency Training Program is an interactive online learning program targeted at project managers, design engineers and life cycle managers to help them improve the energy efficiency of their mobile networks in the face of increasing power costs and the demand for more network infrastructure.

MCF Program Manager Matt Evans said the education program is an important step in creating a greener and more cost effective mobile phone network in Australia.

"The growing demand for data services on mobile devices and improved coverage across



the network has resulted in an increase in the industry's energy use of around 10 per cent each year," Mr Evans said.

"Not only are mobile carriers facing costs associated with increased network energy usage, but the cost of electricity continues to rise steeply."

"This training program will help mobile carriers employ energy efficient technologies and designs so they can service more subscribers with less energy."

The product of 12 months research and development, the program uses an interactive online format to help participants learn about energy efficiency in design, procurement and maintenance activities within mobile networks such as improvements to air-conditioning systems, control, hardware, planning options, and alternative energy sources.

Mr Evans said the MCF had received excellent feedback since a [pilot](#) of five training modules launched in June and he expects the online resource to be a valuable source of information for the industry.

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MCF launch online Energy Efficiency Training Program

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“This training program will support a cultural and systemic shift, focused on changing work practices and behaviour for technical staff in the area of radio networks, which can contribute up to 93 per cent of some mobile carriers’ total energy consumption,” Mr Evans said.

“We are focused on developing an industry approach to address the significant amount of total network operator energy use for mobile network carriers, contributing to a sustainable and environmentally responsible industry.”

The MCF launched the Program at the ‘Smart Power for Smart Telecom Networks’ Conference and Workshop Series, at the Westin Sydney on 12-13 September 2011.



The conference, which highlights how energy efficiency and renewable energy alternatives can provide cost-effective solutions, brought together

executives, senior management, and project managers from the Telecommunications and Infrastructure Industries.

In addition to the launch, several of the [MCF Energy Efficiency Training Modules](#) were conducted as part of the Workshop Series.

Significant funding to develop and implement the training program was provided by the NSW Office of Environment and Heritage through its Energy Efficiency Training Program. And the project also received valuable support from member network carriers: Optus, Telstra and Vodafone Hutchison Australia.

“We could not have reached this point without the valuable input from our three MCF members, their partners and Energetics and we thank them and the NSW Government,” Mr Evans said.

Australia's demand for mobile data requires more spectrum and more infrastructure says ACMA

Australia's mobile carriers will need to secure a wider range of the radiofrequencies used by mobile devices to communicate if they are to keep up with Australia's growing appetite for mobile data according to a recent discussion paper from Australia's telecommunications regulator the Australian Communications and Media Authority (ACMA).

The ACMA noted the pressure on mobile carriers to meet user's expectations and predict a total of 1100 megahertz (MHz) of what's commonly referred to as [spectrum](#) will be required by 2020 to handle the increased volume of data traffic on the network.



"The expectation of end users for access to services exhibiting increased speed and data allowance puts pressure on network operators in meeting demand and leads to requests from operators for access to greater amounts of spectrum," the ACMA said in their [consultation paper](#): Towards 2020 – Future spectrum requirements for mobile.

"The ACMA estimates that an additional 150 MHz of spectrum will be required by 2020. This estimate takes into account the 800 MHz of spectrum already dedicated for operation by mobile communications services; and includes the 150 MHz previously identified by the ACMA as being required by 2015," the ACMA said.

In their response, the Australian Mobile Telecommunications Association (AMTA) acknowledged the ACMA's paper as an important step in ensuring network operators have the capacity to meet demand into the future

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Australia's demand for mobile data requires more spectrum and more infrastructure says ACMA

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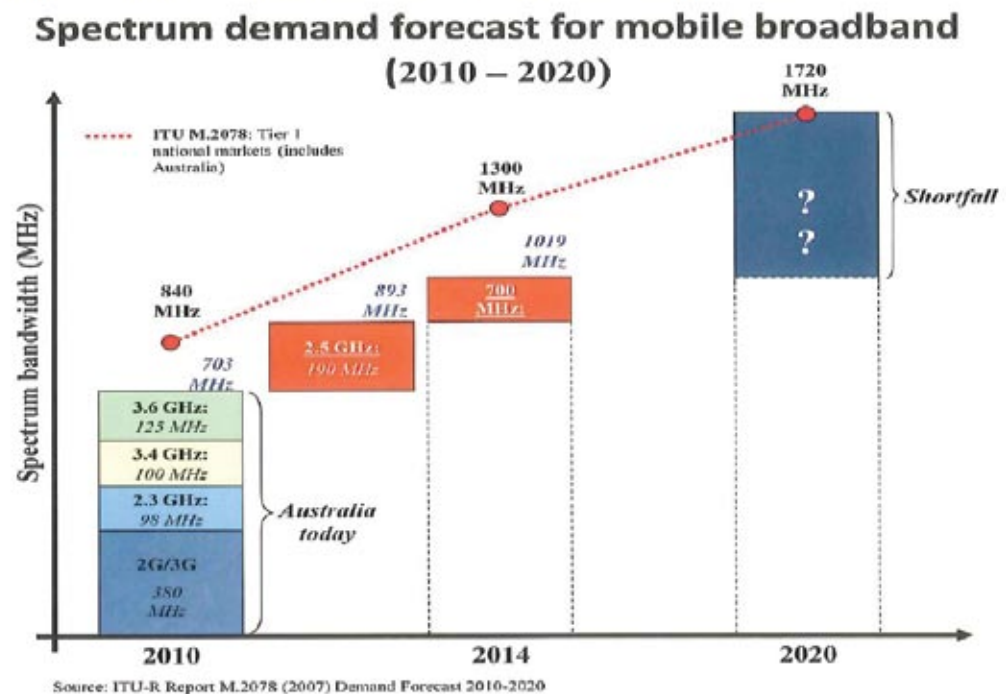
“We are in an environment where the expectations of end-users are rising, which is in turn increasing pressure on mobile network operators to ensure they have the capacity to meet an ever increasing demand for faster speed and bandwidth-hungry mobile data applications and services,” AMTA said in their [submission](#) to the ACMA.

“AMTA considers the ACMA’s Paper to be a useful first step towards a strategic roadmap document to inform both Government and industry on the supply and demand for spectrum resources to 2020 and beyond.”

But the amount of radio frequencies are limited and must be shared between carriers and other

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Figure 3.4 Spectrum demand forecast for mobile broadband (2010–2020)³¹



AMTA’s submission to the ACMA said pressure is increasing on mobile network operators to ensure they have the capacity to meet their customer’s demand for mobile data.

Australia's demand for mobile data requires more spectrum and more infrastructure says ACMA

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services such as television, radio, Wi-Fi and emergency radios the ACMA noted.

“Making spectrum available to meet the future requirements of mobile broadband services is complex as prime spectrum for mobile broadband services is also heavily utilised by other services and is a scarce resource.”

“The ACMA also expects industry to deploy infrastructure more extensively in order to ease the pressure on spectrum.”

One way the industry is maximising their current capacity is through the deployment of more spectrum efficient 4G infrastructure, which uses long-term evolution (LTE) technology.

Telstra was Australia's first carrier to switch on 4G base stations using LTE in Sydney, Perth, Melbourne and Brisbane, in late May for the first time outside of field trials.

“Ultimately, LTE will also provide faster data speeds, high quality video conferencing and faster response times ... However, the biggest benefit it will bring is additional capacity, meaning more customers can do more things on the network at the same time.” Telstra Networks and Access Technologies executive director [Mike Wright said](#).

All network carriers are expected to have 4G services rolled out in some capacity by the end of the year.



Carriers' consultation with the community results in less complaints

Australia's mobile carriers conducted notification and consultation programs for more than four thousand deployment sites last financial year, with the number of complaints below one per cent.

MCF Program Manager Matt Evans said the Carriers compliance with the industry's code for consulting on all network deployments big and small meant there was less angst in the community.

"Deployment statistics and the continued decline in complaints to the government regarding the industry's consultation practices show the code is achieving what it is meant to achieve," Mr Evans said.

Under Industry Code C564:2004 for the Deployment of Mobile Phone Network Infrastructure (commonly referred to as "[the ACIF Code](#)") all network carriers are required

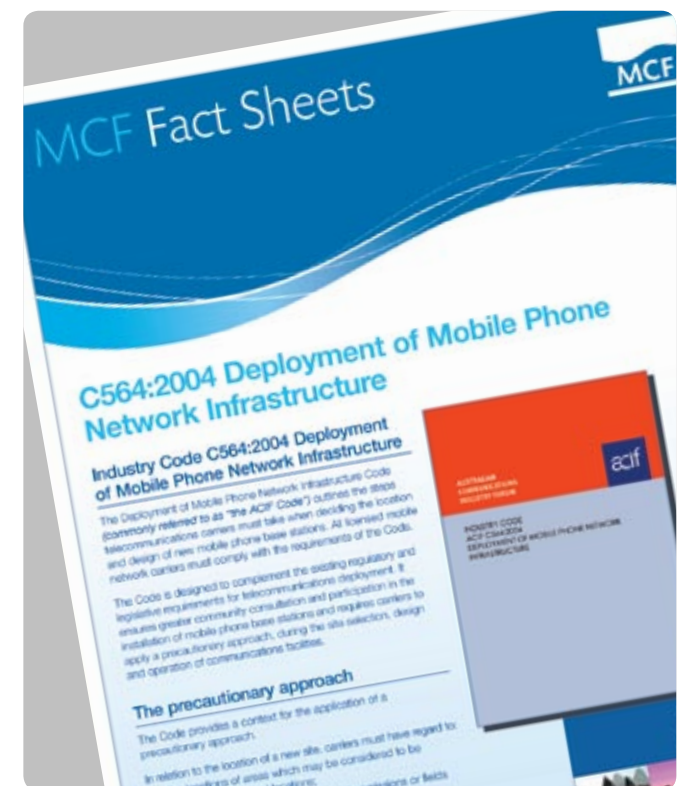
to consult with local councils and communities when upgrading network facilities or building new mobile phone base stations, whether they require a Development Application (DA) or not.

Mr Evans said the carrier's compliance with the code was resulting in fewer complaints despite their increase in deployments to keep up with consumer's demands.

"From 1 July 2010 to 30 June 2011 Optus, Telstra and VHA conducted notification for 4432 sites across Australia where a Development Application was not required," Mr Evans said.

"The official numbers will be reported in the ACMA annual report but based on information from the Carriers we expect that complaints lodged under section 7 of the ACIF Code will be less than one per cent of the total number of sites."

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Carriers' consultation with the community results in less complaints

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Type of Consultation	Number of sites			
	Optus	Telstra	VHA	TOTAL
ACIF 5.3 (Low RF)	133	242	414	789
ACIF 5.4/5.5 (New sites)	102	100	14	216
ACIF 5.6 (Existing sites/Upgrades)	179	1175	2073	3427
TOTAL	414	1517	2501	4432

ACIF 5.3 Low RF Power Infrastructure and Fixed Radio Links

A Carrier must notify the Council and local residents of all proposed Low RF Power Infrastructure. Low RF Power Infrastructure is similar in power to that of a handheld mobile telephone.

ACIF 5.4/5.5 5.4 Installation at a new site without Development Application

An installation at a new site, that does not require a Development Application, requires a carrier to prepare a consultation plan based on its assessment of possible interested and affected parties and requires a carrier to consult with the council about its consultation plan.

ACIF 5.6 Installation at an Existing Site Without Development Application

A Carrier must notify the Council and local residents of all proposed work to be carried out at any premises where there is existing RF infrastructure. The Carrier must also publish a notice regarding the work to be carried out in a newspaper circulating in the local area.

“We expect that there will continue to be an increased level of mobile carrier deployment Activity for 2011/12 with a focus on catering for exponential growth in mobile broadband as well as rural coverage.”

Under the ACIF code carriers must consult with communities for sites deemed to be ‘Low-Impact’, such as panel antennas on road signs, building facades and roof tops, sites that

previously did not require this level of community consultation by law.

Importantly, because of their minimal visual impact and small design, low impact sites do not require formal council approval.

“The policy rationale for treating low impact facilities differently was to achieve a balance between approval of facilities that are essential

to maintain telecommunications networks, and to minimise significant planning or environmental issues of concern to the local community. It is only through the consistent application of the Code’s consultation processes that this balance has been retained,” Mr Evans said.

Telstra also had 135 of 145 Development Applications approved for new sites across Australia within the last financial year.

Diverse views reported about community consultation in practice



Representatives from Telstra address the Sellicks Beach phone tower public meeting at Sellicks Beach Community hall – image courtesy of the [Southern Times Messenger](#).

Community consultation attempts to allay residents' concerns and let carriers and their contractors get on with the job of rolling out network infrastructure. However, it does not always work like that in practice contractors told *iNews* in a recent three-part [review](#), which presents a diverse view of the rollout in Australia.

Contract property developer Daly International's development manager Jeremy Bierer told *iNews* it's always been a fairly sensitive type of development.

"People want the services and they don't want the infrastructure that goes with it," he said.

"[Electricity] transmission line towers have the same issues. Everyone expects power but they don't want to see dirty big high-voltage powerlines being mown through a forest."

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Diverse views reported about community consultation in practice

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Bierer suggested that opposition was a-fact-of-life when working in construction.

“No matter what you’re building, every council will have some form of action group and every engineer will find some issue with a development proposal,” he said

Michael Marom, Telstra’s area general manager for the Illawarra region, south of Sydney agreed.

“Every time you propose a mobile tower or any new infrastructure, there’s groups that express concern,” he said.

“As a general rule there are concerns expressed around aesthetics and the impact on the environment.

“That’s why we look to minimise the size of the towers, paint them colours to fit into the background, and look at industrial sites where we can tag onto [existing infrastructure] as an absolute first preference.”



Mr Marom is a strong advocate for community consultation.

“Communities have their concerns and our job is to provide information, which is why we have community consultation and information sessions,” he said.

“As a company, we feel it’s prudent to engage councils and the local community to provide

information and tease out any issues that might be there.

“At the end of the day we want to work with communities, not against them.”

However, *iTnews* also reported that residents felt the consultation process was perfunctory and there is no commitment to act on the views obtained from them.

Councillor Jeff Johnson who is involved in a dispute over a base station in Ballina Shire told *iTnews*: “They know the [Telecommunications] Act is skewed in their favour so they’re only managing a cursory consultation phase to satisfy the requirements of the [ACIF] code.”

“It shows contempt for the local community and no general willingness to address concerns.”

“They’ve really brushed over the consultation phase and haven’t given us the proper respect the legislation requires,” he said.

MCF and Carriers discuss Queensland's future planning laws with Deputy Premier

Moves to streamline the laws governing the installation and upgrade of telecommunications infrastructure in Queensland are back on track after a successful meeting between Queensland's Deputy Premier Paul Lucas, the Mobile Carriers Forum and representatives from Optus, Telstra and Vodafone Hutchinson Australia.

MCF Program Manager Matt Evans said the state government has agreed to work through issues in the telecommunication facilities code with Australia's three network carriers to ensure that infrastructure can be deployed consistently across the state in a timely manner.

"We are pleased that Mr Lucas has agreed that the Government should work with the Carriers to resolve issues that have arisen in the Code from

the exhibition process with a view to adopting consistency across the State", Mr Evans said.

"The Code is of critical importance to the industry as it provides consistency across the State for securing development approval for network infrastructure from local Councils."

The future of the telecommunications facilities code within the state's efforts to reform planning and development rules was in doubt last year when the Queensland government decided to remove the code from the draft [Queensland Planning Provisions](#) (QPP) to review its workability.

Mr Evans said the mobiles industry has worked with the Coordinator General's Office since 2005 on this reform and they were

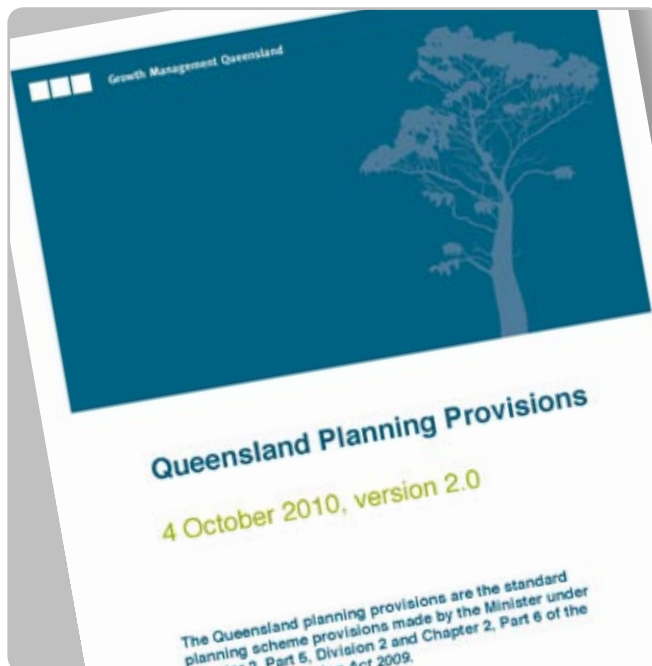
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Queensland Deputy Premier Paul Lucas has agreed to work through issues in the telecommunication facilities code with Australia's three network carriers.

MCF and Carriers discuss Queensland's future planning laws with Deputy Premier

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committed to developing a workable code that would provide more clarity and certainty for Australia's network carriers.

"In Queensland, network Carriers are deploying or upgrading telecommunications infrastructure at more than 400 sites, so consistent planning rules applied by Queensland Councils can greatly assist carriers to make the correct decisions at the start of the process about the design and location of a telecommunications pole or tower," Mr Evans said.

Mr Evans said a number of other matters were addressed during the meeting including high council application fees in Queensland, and the need to overcome problems with tenure arrangements for Carriers' use of land managed

by the Queensland [Department of Environment and Resource Management](#) (DERM), and land managed by Brisbane City Council.

The MCF's regional planning program is working with state governments throughout Australia to highlight the benefits of consistent planning controls.

Recently, the MCF worked closely with the New South Wales Government who have taken the lead on reforming their planning laws to provide for fast-track delivery of telecommunications facilities, including new mobile network towers and antennas.

No evidence kids are at risk from base stations but public reassurance a challenge

German scientists have found that despite the lack of evidence of a link between radio transmission towers and brain tumours or childhood leukaemia, this view is at odds with the public's view and therefore it will be a challenge to reassure the public about their safety.

Peter Wiedemann from the Karlsruhe Institute of Technology and Holger Schütz of the Jülich Research Center in Germany [reviewed](#) all published papers on childhood brain tumours and leukaemia in children as well as experimental studies on cognition and general health and found “no or only scant evidence that exposure to base stations poses a hazard to children.” “At present, a critical evaluation of the existing scientific evidence on children’s health and RF [radio frequency] EMF [electromagnetic fields] exposure does not support the notion that cell phones are a risk factor to children,” Wiedemann and Schütz said.



The researchers explained one of the challenges is that it’s impossible for science to prove a negative, that is, it’s not possible to show that something is not happening. It can only look for solid evidence of health effects.

“Communication is especially exacerbated by the fact that current risk assessments cannot exclude that RF EMF might have adverse health effects

due remaining knowledge gaps, but especially due to the impossibility to prove a non-effect,” Wiedemann and Schütz said.

This poses problems for those trying to reassure the public, because warning people appears better than reassuring people and because people are biased toward negative information, they said.

Wiedemann and Schütz suggest the following three steps to help to reassure the public:

1. Try to make clear the difference between a hazard (the potential to cause harm) and a risk (likelihood of harm occurring).
2. Emphasise the overall trend in scientific evidence is towards no health risks.
3. Be transparent about both the pros and the cons for being cautious and disclose all the scientific evidence – including the remaining uncertainties – on which the opinion is based.

Mobiles towers supported in residential areas if adaptive power explained

If the community are provided with information booklets on how mobile phones reduce their power output when operating in areas of good network coverage they are much more likely to support mobile phone towers in residential areas Swiss researchers have found.

“Provision of this knowledge would help people to better understand authorities’ base station siting policies and, if wished, decrease radiation emission from the own mobile phone,” said lead researcher Dr Marie-Eve Cousin.

“Most people would prefer to site base stations outside residential areas, but from a public health perspective, this may result in even more radiation for the phoning population,” Dr Cousin said.

“Reading the information booklet increased participants’ knowledge and led to some perceptual changes of base stations and mobile phones. Importantly, participants reading the booklet were able to transfer their knowledge to

a base station siting task and found locations that would emit less radiation for the phoning population.”

Dr Cousin an expert in consumer behaviour from the Swiss Federal Institute of Technology provided 200 people with a [short booklet](#) which explained how networks operated with an emotionally charged newspaper article from a recent base station dispute in Zurich which described a father’s fears for the health of his children.

The booklet avoided jargon and included simple diagrams showing how mobile phone networks worked including how handsets reduced their output in areas of good coverage and base stations reduced their output depending on number of calls and proximity to the handsets. It also included precautionary advice about how the public could reduce their personal exposure.

When people read the booklet rather than the



Lead researcher Dr Cousin said reading the information booklet increased participants’ knowledge and led to some perceptual changes of base stations and mobile phones.

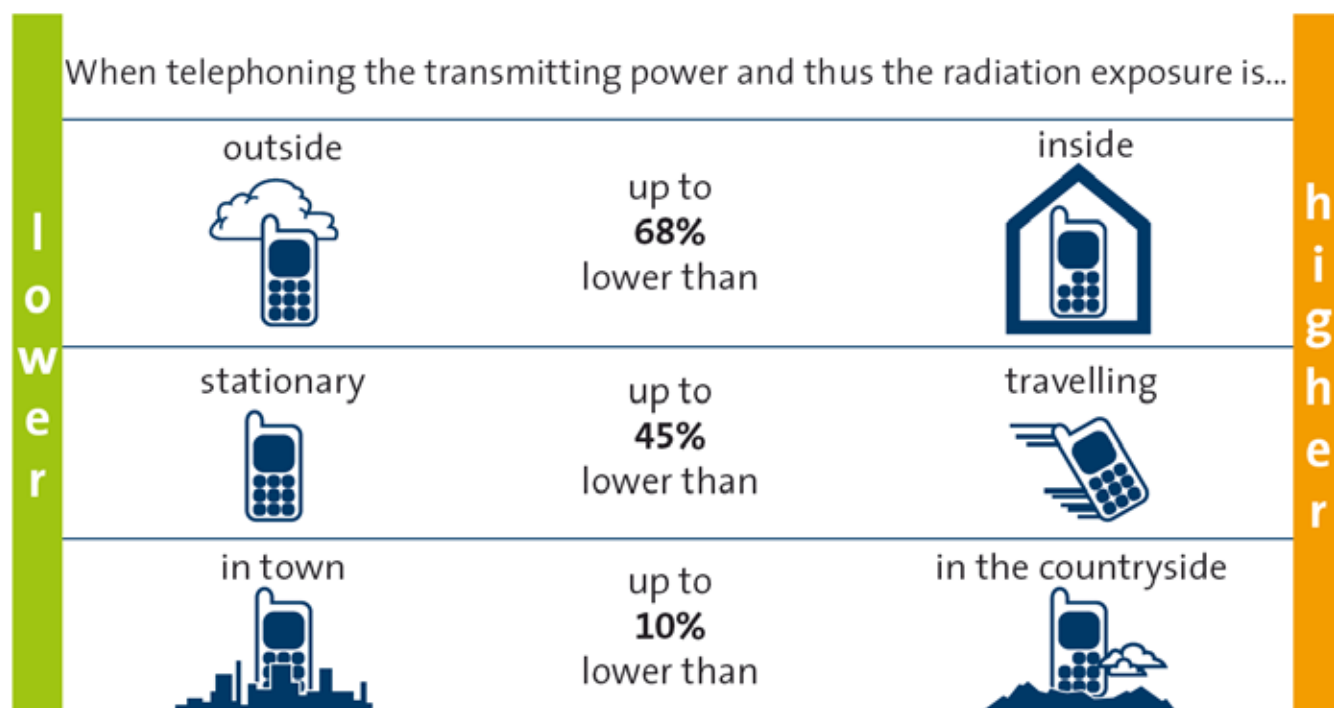
newspaper article they were significantly less concerned about health effects from both base stations and mobile phones and expressed more positive views about base stations.

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Mobiles towers supported in residential areas if adaptive power explained

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Radiation exposure when telephoning



A diagram from the booklet given to study participants explaining how networks operate.

The [study](#) participants were also provided with a map of a small village, with six possible scenarios for siting base stations at different locations in order to provide service to the entire village. They were asked to compare each of the base station plans and to rate them.

People who read the information booklet selected base station plans for the village that were closer to where the mobile phone services were required.

“Participants who read the booklet used the opposite heuristics (‘the nearer, the better’, ‘the more antennas, the better’). Thus, they were able to transfer the information given in the booklet to the base station siting task and correctly inferred that a higher number of antennas and a central location in the village would be better options for the village community,” Dr Cousin said.

Interestingly those who read the newspaper article noticed the emotional tone of the article but did not identify with the concerned resident in the story, she said.

Sensitive people not psychologically damaged by mobile phone emissions

A comprehensive analysis of scientific studies conducted on individuals who claim to be especially sensitive has found no evidence they suffer psychological damage from exposure to radio signals from mobile phones or base stations.

Electromagnetic hypersensitivity (EHS) is a controversial illness in which people report symptoms, such as headaches, skin irritations and fatigue after exposure to electrical fields or radio waves. The condition is also known as Idiopathic Environmental Intolerance attributed to electromagnetic fields (IEI-EMF).

A [2001 survey](#) found that people related their symptoms most frequently to mobile phone base stations (74%), followed by mobile phones (36%), cordless phones (29%) and power lines (27%).

However, the World Health Organisation (WHO) has issued a [fact sheet](#) stating there is no

connection between mobile phones and their base stations to electrical hypersensitivity.

“The majority of studies indicate that EHS individuals cannot detect EMF exposure any more accurately than non-EHS individuals. Well controlled and conducted double-blind studies have shown that symptoms were not correlated with EMF exposure,” the WHO said.

Despite no clear evidence there is a direct link there remains concerns that some people might suffer psychological damage which is still regarded as a health effect and therefore the concerns should be taken seriously by governments and regulators.

Researchers led by [Dr James Rubin](#) from King’s College London’s [mobile phone research unit](#), conducted a comprehensive [review](#) of the existing scientific evidence to try and find signs of such damage.

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Lead Researcher Dr James Rubin said at present, there is no reliable evidence to suggest that people with IEI-EMF experience unusual physiological reactions as a result of exposure to EMF.

Sensitive people not psychologically damaged by mobile phone emissions

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The researchers also included Rosa Nieto-Hernandez from King's College, Lena Hillert of the Karolinska Institute in Sweden, Eric van Rongen of the Health Council of the Netherlands, and Gunnhild Oftedal of Sør-Trøndelag University College in Norway.

“At present, there is no reliable evidence to suggest that people with IEI-EMF experience unusual physiological reactions as a result of exposure to EMF. This supports suggestions that EMF is not the main cause of their ill health,” Dr Rubin concluded.

“We included studies in this review if they: included a discrete set of participants who reported symptoms that were explicitly attributed to the presence of electromagnetic fields or proximity to electrical equipment; deliberately exposed the participants to two or more conditions involving different low levels of electromagnetic fields; conducted the exposures

single or double-blind; and used one or more objective outcome measures during or after each of the exposures,” he said.

They also included studies published in languages other than English as well as studies published in the non-peer-reviewed literature.

Another [recent review](#) has concluded the phenomenon known as the nocebo effect, where negative expectations lead to undesirable physiological outcomes, is a likely explanation for the symptoms experienced by sufferers.

The WHO fact sheet also says there is some evidence to show negative expectations could be responsible for the symptoms experienced.

“There are also some indications that these symptoms may be due to pre-existing psychiatric conditions as well as stress reactions as a result of worrying about EMF health effects, rather than the EMF exposure itself.”

Exclusion zones counterproductive says German researcher

Calls for safety buffer zones between a mobile phone base station and homes, businesses or childcare facilities are counterproductive because exposure to electromagnetic energy (EME) does not continuously increase the closer you get to an antenna, according to a German researcher.

“The demand for a safety distance from base stations of about 100 m for places of sensitive use like kindergartens and schools as claimed by some groups, might even be counterproductive,” Dr Christian Bornkessel a researcher from IMST GmbH radio electronics research centre in Kamp-Lintfort, Germany said in a recent [journal article](#).

Dr Bornkessel said because of the vertical radiation pattern of a typical base station the areas that receive the highest exposures of radio

signals may actually be quite some distance from of the base of an antenna.

“Contrary to the usual opinion, it can be concluded that the exposure is not continuously increasing when approaching the base station,” Dr Bornkessel said.

“The distance to base stations is no reliable exposure classifier.”

MCF program director Matt Evans agreed that there is a common misconception that that the further a base station is away from people the less they would be exposed to the radio signals it uses to communicate.

“Once a call is connected, both mobile phones and their base stations are designed to operate at the lowest levels to make a quality call,” Mr Evans said.

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German Researcher Dr Christian Bornkessel said the demand for safety distances around base stations might be counterproductive.

Exclusion zones counterproductive says German researcher

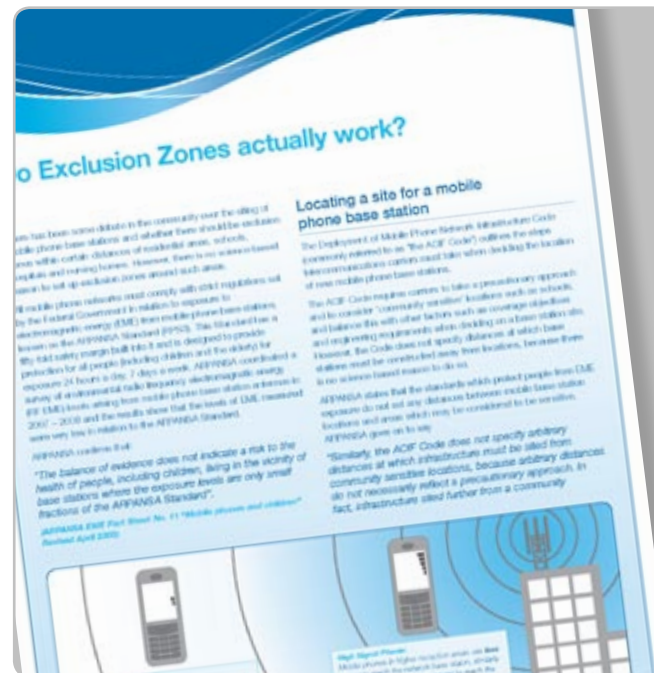
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“As a precautionary approach, base stations are constantly adapting their output levels depending on the number of calls they are handling and how far away the handsets are from them.”

“The further a base station is built from homes, the more power it needs to keep customers in the vicinity of those homes connected, which could actually increase exposures in that area – the very thing calls for exclusion zones are trying to avoid.”

“In most circumstances the best location to build base stations in order to minimise emissions, is closest to where the services are required.”

Mr Evans said base stations are very low powered operating between 2 to 50 watts and typical exposure levels around base stations



are hundreds of times below international exposure limits.

Dr Bornkessel said 1,867 measurements taken in Bavaria, Germany in one of the largest ever EMF measurement campaigns, reinforced the view that base stations operate well below exposure guidelines.

“Typical general public exposures around mobile radio service base stations consume only tiny fractions of exposure levels ... typical emission levels are about one tenth of a per cent or even less,” Dr Bornkessel said.

See the MCF fact sheet on [exclusion zones](#) for more information.

In Brief

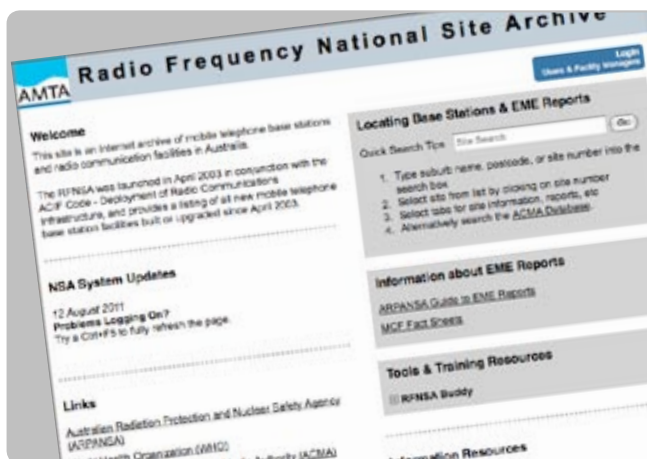
Facelift for AMTA base station website

Australia's official source for telecommunications base station information, the AMTA Radio frequency National Site Archive (RFNSA), has been upgraded.

The new [RFNSA](#) front page will provide a greatly enhanced entry point and navigation for users with simple instructions on how to search for telecommunications sites and compliance reports.

The RFNSA, which now has a listing of more than 17,000 sites, has been progressively developed since its inception in 2003. The revamped front end will make it even easier for the community to access and search for sites and compliance information, further boosting transparency of the industry's activities.

There are many features that regular industry users will also appreciate like being logged in for the whole day and quick navigation to last sites visited. There are also simple tool links and navigational aids for fact sheets and training packs.



Thousands of Australians have obtained site specific information regarding electromagnetic energy (EME) levels around base stations over the past 12 months from the RFNSA.

In the 12 months to June 30, 2011, the “EME Environmental Report” has been downloaded 12,805 times by the community providing information regarding the maximum EME level likely to be encountered in the neighbourhood of a telecommunications base station.

Also in this period, 2,101 visitors from the wider community have been able to confirm a carrier's EME compliance through downloading a “Site Compliance Certificate”.

The Certificate is produced to verify the base station site meets the requirements of Australia's EME Safety standards.

MCF Program Manager Matt Evans welcomed the upgrade and this year's figures as a demonstration of the continuing contribution of the RFNSA as a resource for the Australian community.

“The mobile network carriers have a proud record of operating their mobile networks at precautionary power levels below national and international public health and safety limits. The industry remains committed to providing useful information about EME to the community consistent with a precautionary approach”, he said.

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Kids adequately protected by exposure guidelines

Speaking at an international workshop of 150 experts, chairman of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Dr Paolo Vecchia confirmed that current safe exposure guidelines adequately protect children.

“The purpose of the meeting was to determine if our guidelines are adequate to protect children – who are different in terms of physiology, anatomy, and lifestyle,” Dr Paolo Vecchia the chairman of ICNIRP said in a press conference following the [conference](#) held in Slovenia in May.

“From the scientific results of the workshop, we can conclude that our guidance is adequate.”

For some time now concerns have been raised about the possibility of greater vulnerability for

children because of an increased susceptibility to health risks during developmental stages and because young people will be exposed to electromagnetic radiation for most of their lives.

However, it was clear from the deliberations at the workshop, international safety guidelines have taken these concerns and potential risks into account when setting safe exposure limits.

“For UV radiation, we do know that people are at risk and now we have even more evidence for this position. In contrast, for EMF, and mobiles in particular, there is no evidence that children are at special risk,” Dr Vecchia said.

“This means that there is no reason to change current guidelines. Nevertheless, we will continue to review the science, and the outcome of this workshop has contributed to that.”

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“ICNIRP Chairman Dr Paolo Vecchia”

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Swiss LTE fact sheet says emissions from new infrastructure will be similar to 3G

A new [fact sheet](#) from the Swiss Federal office of Communications explains that emissions from new Long Term Evolution (LTE) infrastructure will be approximately in the same order of magnitude as current networks.

“Both the base station transmitter antennas and the LTE handsets will emit non-ionising radiation into the environment. This will be approximately in the same order of magnitude as the networks already in operation,” the fact sheet says.

LTE is designed to allow more users on the network and deliver faster mobile broadband data speeds.

“To meet the requirements for higher capacity and higher data rates, the industry has developed the new LTE mobile radio system,” the fact sheet says.

“The aim is to enable up to four times more people to use the mobile network or to enable more data to be transmitted.”

The [German Federal Agency for Radiation Protection](#) (BFS) said last year that because the frequency bands used by LTE are similar to those used currently – and which were previously allocated to other radio services, like TV and FM radio - they didn’t expect any fundamental differences in the health effects of the technology.

“Since these bands are near to the frequency spectrums currently used for mobile communication and other radio technologies, one cannot expect that their biological-medical effects differ fundamentally,” BFS said.

Also, a [study](#) by the German Mobile Information Center (IZMF) in November last year found LTE exposure levels were significantly below the safety limit.